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THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

The pages which are missing were removed because they were advertisements

New Brunswick, The Nova Scotia Farmers' Association, Growers' Associations, The Maritime Stock Breeders' and The Newfoundland Agricultural Board.

Volume 24. SUSSEX, NEW BRUNSWICK, OCTOBER 8, 1918. Number 1.

Co-Operation Grows Apace in Maritime Provinces

In Few Years Farmers Have Developed Many Progressive Co-operative Organizations---Many Lines are Covered

Co-operation is making marked progress in the Maritime Provinces among farmers. A few years experience has demonstrated that along certain lines co-operation is not only feasible, but profitable. New lines of co-operative work have been opening up continually, until now the amount of business transacted by farmers in a co-operative way runs into hundreds of thousands of dollars, aye, the total may be measured in millions. And the game is only in its infancy. Everywhere co-operation is being talked and adopted by farmers and the experience of those interested has in many cases been gratifying.

Of course there have been failures. The co-operative store has in too many instances proved unprofitable and losses followed failure to bring to bear on many undertakings of this character ordinary business precaution. Success in co-operation, like any other venture, must be founded on sound, common sense methods. To properly manage a business, one must have a knowledge of business and in the case of a co-operative retail business this means much. The man who would make a business "go" must be versed in buying and selling. He must know goods and just what goods he can sell in his community. He must be able to take advantage of markets both in buying and selling. He should be a "keen" commercial student and have the capacity to make friends for his business. A co-operative store should be up-to-date in every way. It should be clean and attractive, and should be the centre of trade in its locality. Unfortunately, not only have some of these conditions been found wanting in connection with the management of some co-operative business ventures, but every one has been missing and the result has been disaster with a capital D.

However, this is the dark side of the cloud. There has been success achieved in co-operation in all three provinces by the sea, New Brunswick, Nova Scotia and Prince Edward Island. In New Brunswick, the Agricultural Societies United have in the past few years distributed hundreds of thousands of dollars worth of fertilizers through the agricultural societies of the province. This has resulted in the saving of thousands of dollars to farmers who use fertilizers. It has been a success from the start and has brought home to hundreds and thousands, the advantages of co-operation. And still there are thousands of farmers who are not yet alive to the usefulness of this splendid organization.

In Nova Scotia, we might mention the United Fruit Growers as the outstanding concern which has made a hit with co-operation. This strong organization started in to handle apples for its stockholders. The idea was to pack all apples at central warehouses, ensuring uniformity in sorting; to secure better ocean freights, better prices, cash remittances, etc. All these things were accomplished. The day when impecunious speculators might fleece the farmer was closed, and business on business principles was started and maintained. The United Fruit Growers, too, furnished their patrons with fertilizers. flour, feeds, germicides, etc., at cost. It has developed a business which is one of the big things in the agricultural life of the Annapolis and Cornwallis valleys and its ramifications are extending. It has succeeded.

In Prince Edward Island the P. E. I. Co-operative Egg and Poultry Association has established a record which it would be hard to excell. They have a splendid plant at Charlottetown. All eggs are handled with the greatest care. They are graded and sold on the highest market and the producers are given the benefit of sales service which is right up to date. On the Island, too, many other lines of produce are handled in the same way and the farmer there gets every dollar out of his produce that it is possible for him to get. The effect has been to revolutionize farm conditions in the progressive portions of the Island and to establish a firm faith in co-operation among many.

In a general way co-operation in the production of butter and cheese has been adopted in all three provinces. Under this system, there have been built up concerns which distribute to farmers every year over $100,000 each. They are giving back to their patrons every cent of profit that is earned by the plants. Not only that, but they have come to realize that excellence counts in the sale of their output and there is keen rivalry to be FIRST in the race for better methods and better finished products.

In Carleton county, New Brunswick, the United Farmers are making their bow to the public with a co-operative movement, which, with careful management may be expected to do much for its members. A warehouse has been established in Woodstock, and besides selling at wholesale rates to its members, the United Farmers hope to sell co-operatively potatoes and hay, which are the large items of produce in that section. They propose to get every dollar for the farmer that can be got and there seems to be no reason why success should not attend their efforts, quite as much as it has the movement inaugurated in Nova Scotia by the United Fruit Growers, or the Co-operative Egg and Poultry Association, of Prince Edward Island. Good management will be an essential but that can be had. In its infancy as yet, the progress of this newest venture among farmers will be watched with interest. Its success will mean much to the farmers of Carleton County, who can support it with profit to themselves.

Possibly the biggest thing in co-operation in the history of Canada was the handling of the wool production of 1918. A co-operative company formed early in the year undertook to sell co-operatively the wool production of all Canada. Although the organization was in its infancy, it sold practically the output of the country and it returned to the farmers more money for their wool than they had ever received before. Not only that, but the strength of the movement was such that when an effort was made to prohibit the export of wool, and thus restrict prices, the representatives of the wool producers were able to defeat that end and get the very best price available. It was a big demonstration of the efficiancy of co-operation and next year should see even greater success in connection with the sale of wool.

The Grain Growers, of the West, is another big success for farmers. That institution had many a hard row to hoe. All sorts of disappointments were encountered. The Grain Growers in one year lost a quarter of a million. Were they down-hearted? A little, perhaps, but they realized that all businesses must have losses as well as gains, and they stayed with the game to a finish. To-day the activities of the Grain Growers are widespread. The organization has assets of $6,000,000, which represents profits that have been made through co-operation. Of course there were big men at the helm, as there are to-day. The Grain Growers picked out big fellows to run their business and they paid big men's salaries. The present financial standing of the Grain Growers demonstrate satisfactorily the wisdom of getting a man to do a man's work. And besides being a big factor in the business life of the west, the Grain Growers must be reckoned with as the "big stick" in the public life of that country.

"Getting together" is just now the one thing that is engaging the attention of all classes in Canada. Wise men are realizing that after-the-war conditions will bring an entirely new outlook. And so they are preparing for the future. Labor unions are everywhere organizing as they have never done before. The manufacturers are getting closer together, in order that they may better meet the competition that will inevitably follow the war. Financial interests are uniting and building up institutions of immense strength. The returned soldiers and those in France and England see the wisdom of union and they are laying the foundation of a society which will lay down their demands upon this country. Retail merchants are everywhere working side by side. Prices are being fixed at which goods may be sold. If the prices are not adherred to, the merchant who transgresses finds himself without the goods to dispose of. Union is everywhere in evidence. It is recognized as the only modern method of accomplishing things.

And so the time is ripe for farmers of the Maritime Provinces to get together and see to it that they, too, organize. They can by co-operation make money, just as other united bodies are making money. There is everywhere in the cities a demand for increased wages and the control of food prices. That is to say, the farmers are invited to take less for their crops and pay more for everything they buy. If every other interest in Canada is to unite to impose their views upon parliament and farmers alone are content to stand aloof, what will the end be? This is the get-together period and the longer the getting together is delayed, the worse it will be for the mob and the better the pickings will be for the well led and well united organizations of Canada.

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If farmers are to take advantage of their opportunities they must co-operate. It is only a short time since it was impossible to buy fertilizers co-operatively. The big manufacturers at one time would not sell direct. But to-day the best available business in the country, the spot-cash kind is being handled by the farmers themselves and they are saving thousands of dollars. How did they win recognition in the fertilizer market? By co-operation. The manufacturers found out that the farmers had real money to spend and

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The Prince Edward Island Exhibition

The terrible catastrophe which occurred in the city of Halifax last December, precluded the holding of an exhibition in that city this fall. The explosion racked the exhibition buildings from turret to foundation stone. Homes were erected for the homeless on the exhibition grounds, and until such a time as proper repairs can be effected and ample housing accommodation in other sections of the city is procurable, the holding of an exhibition in the garrison city is out of the question.

The New Brunswick Department of Agriculture did not favor the holding of an inter-provincial exhibition in that province this year, and consequently they did not vote a grant for exhibition purposes.

The Prince Edward Island Department of Agriculture did not vote a grant for the annual inter-provincial exhibition at Charlottetown this year, but encouraged by a substantial grant from the Dominion Live Stock Department, the Charlottetown Driving Park and Exhibition Association, under whose auspices the exhibition is held, decided to carry on their annual fair.

This progressive association found it necessary to reduce the prizes offered this year to the extent of from 25 to 33 per cent. and consequently the amounts offered in the various sections were not so attractive to exhibitors as were the sums offered in previous years.

Frequent rain storms, protracted the harvesting season so that grain which was cut and stooked a couple of weeks ago, was still in the fields at exhibition time, September 24th to 27th inclusive. Under conditions of this kind a farmer could hardly justify his absence from the farm and possibly miss taking advantage of getting necessary work performed whenever the weather conditions were favorable.

The high cost of feed, the scarcity of labor, the lack of opportunity to exhibit at only one exhibition did not warrant the stock breeders an opportunity to get money spent on high fitting back, and consequently the major portion of the live stock that was shown at the fair was in good, thrifty, field fit, and minus the bloom in many instances that goes with special fitting for exhibition purposes.

The weather man did his best to make matters disagreeable for the management, exhibitors and visitors alike by furnishing damp, cold days with but little sunshine, yet the attendance records were particularly good.

The main building held an exceptionally fine exhibit representative of the work carried on by the Dominion Experimental Farms. A careful study of this educational display revealed many features of interest to the visitors, the majority of whom commented freely and favorably upon the artistic arrangement and truths silently yet forcibly presented.

The Entomological Division also put up a very instructive display of the plant enemies that the farmers have to combat. Ways and means to effectively fight these pests were explained by the officers in charge, and by placards judiciously placed where they would draw the attention of the public to the best advantage.

The Dominion Live Stock Branch conducted a booth in which one could learn all about the co-operative marketing and proper care of wool.

Then there was a booth in which the proper handling of eggs from producer to consumer was cleverly shown in conjunction with an exhibit showing many tempting ways in which eggs may be used to help conserve meat products for our soldiers and their allies.

There was a very creditable display of July, August and September cheese from the majority of cheese factories operating in Prince Edward Island. Mr. Geo. Barr, who judged this display, said the quality was not quite so high as that of the cheese shown last year, and consequently the scoring was somewhat lower. This is a feature, however, which is characteristic of Canadian cheese this year. A list of the scoring of the cheese will be found in tabulated form elsewhere in this issue. The total score for the prize winning butter exhibits will be found in the published list of awards.

The roots, vegetables and grains made a small but select exhibit. Any shortage in this department will be more than compensated at the big Maritime Seed Fair which will be held in Summerside next December.

The fruit display was very creditable. Island grown fruit on exhibition was considerably supplemented by exhibitors from the Annapolis Valley, who went over with a line of their best apples.

The horse classes at Charlottetown were the slimmest in point of numbers that we have seen there for some years. The aged Clydesdale stallion class was the most outstanding feature of the horse show. In the ring were Baron Kelvin, Thorndale by Hiawatha, Dean of St. Cuthberts by Keppock Prince and Pan Baron and Baron Rossiter, both by Baron Kelvin. The noted prize winner Baron Kelvin went down to second place, Thorndale carrying off the coveted red and subsequently the diploma for best Clydesdale stallion, any age. Dean of St. Cuthberts came in for third money. The champion mare was by Baron Kelvin. The best foal of 1918 was by Thorndale.

Alex. McKay, Charlottetown, showed the majority of the Percherons in the ring. The male championship went to Ormeaux, shown in the three year old class by David Reid and son of Montague.

In the Standard bred class, Jas. W. McKinney carried off the coveted red in the aged stallion section, while further down the list stood Harvest Bells, Prince Marjor, Moko Jr., and Dingold in the order named.

A Parkwood, A Brazillian and A Darkwood stood in for first, second and third monies in the roadster section for mare or gelding, 4 years old and over.

The majority of the entries in the Carriage Class did not possess carriage horse breeding or quality. They were distinctly of roadster type. The prize list needs revision so that places may be provided where horses of roadster breeding may be shown to better advantage.

Beef Cattle

Shorthorns, Heresfords and Aberdeen Angus cattle made up the beef classes, all of which were out in creditable fit.

Horne Bros. showed their splendid herd of Blacks. G. L. Hayden was the only exhibitor of white faces.

J. M. Laird & Son of Kelvin Grove had the largest number of entries in the Shorthorn Class and carried off the most coveted prizes. Their first prize junior bull calf was sold at the close of the fair to go to Nova Scotia as a future herd header for A. N. Griffin's herd at New Minas.

J. S. Irving of Cherry Valley was Messrs. Laird's main competitor, with several other breeders whose winnings will be found elsewhere in this issue.

Dairy Cattle

The dairy cattle section did not show the number of entries of previous years. The biggest showing was made in the Ayrshire and Holstein classes. A. McRae & Sons, Easton Bros., Pope Noy, Edwin Reid, A. E. Ings, Vernon McMillan and W. R. Yonker exhibited Ayrshires. The male championship went to Easton Bros. on their aged bull, White Hill King of Hearts. A. McRae & Sons captured the female championship with their aged cow, Queenie II.

The battle royal in Holsteins was between the herds of W. M. Lea and W. J. Gibson & Son. The latter captured the coveted breeder's young herd prize, while both male and female championships went to the Lea herd on a two year old bull and an aged cow. The majority of the red ribbons went to the Lea herd. The Canadian Bank of Commerce special prize for best yearling heifer was won by Messrs. Gibson.

W. M. Stead had everything his own way in the Jersey Classes.

Roper Bros. had a similar walk over in the Guernsey sections.

The grade dairy cattle sections were well filled.

Swine

There was a splendid display of swine shown by H. R. Moase, Ernest Ings, S. C. Lane, Peter Brodie, Wallace Stead, Geo. Crockett, J. F. Roper, S. C. Stewart, G. W. Wood, A. H. Boswell, S. Holroyd and David Reid & Son. The Canadian Bank of Commerce Bronze Medal for best Yorkshire sow went to Geo. Crockett.

Sheep

The sheep classes at Charlottetown showed the care and attention Island sheep men are devoting to the maintenance of good flocks.

The only competition from outside sources came from Burden Goodwin, who was over with his Oxfords to vie with J. M. Laird & Son and A. H. Boswall. The majority of the choicest plums was captured by the mainland flock, but they had to fight every inch of the way.

The Canadian Bank of Commerce Bronze Medal for the best flock of sheep, any breed, was captured by Albert Boswall, with his splendid flock of Lincolns.

The poultry display was not very large, but of good quality.

The Judges were:—

Agricultural Products—S. J. Moore, Truro.

Dairy Products—Geo. Barr. Ottawa.

Heavy Horses—J. M. McCallum, Shakespeare, Ont.

Light Horses—Dr. J. A. Sinclair, Cannington, Ont.

Beef Cattle and Swine—Prof. G. E. Day, Guelph, Ont.

Dairy Cattle—B. A. Bull, Brampton, Ont.

Sheep—J. D. Brien, Bridgewater, Ont.

It is hoped that ere the next exhibition season arrives, Britain and her Allies will have entered Berlin and that a victorious peace will thus be consummated, so that the pendlum of economic conditions will begin to revert back towards the normal mark. The breeder who has read the foresight to be prepared for that day, will find ready sale for all his surplus stock and he who has the quality that can with good performance win out in the show ring, is assured of top notch prices. It will be well for all our breeders to prepare early to put forth their best efforts at the 1919 series of interprovincial exhibitions.

PRIZE WINNERS AT CHARLOTTETOWN

Carriage Horses

Stallion, 4 yrs. and upwards, carriage or coach—1, David Reid & Son, Montague, P. E. I.

Feeds are Still Advancing and Scarce

Agricultural Societies who Bougt Early Saved Money---Dealers Everywhere Without Feed---About Cotton Seed

Feed is very scarce. The Maritime Farmer has been warning its readers since last spring of the conditions that would prevail this fall. The prediction has been verified. Not only are feeds scarce, but the prices are steadily climbing. The wise agricultural societies have bought and those who have not bought will buy now. We will get you feeds and good feeds, if you want them. Dealers everywhere are complaining of the scarcity of feeds. Already they are offering molasses feeds of various kinds at prices which are higher than your society can buy for if the members will only get together. Our advice is to buy your feeds and buy them quickly.

About Cotton Seed

Cotton seed meal will possibly be available. Mark the word, POSSIBLY. The Food Controller, Mr, H. B. Thompson, is arranging for cotton seed, if it be possible to get license from the United States. The Maritime Farmer has asked for fifteen cars. Some of this is already spoken for. The balance will go to the first agricultural societies wanting it. THE PRICE WILL BE THE PRICE MR. THOMPSON PAYS FOR IT PLUS THE FREIGHT TO YOUR STATION, EXCHANGE AND OTHER CHARGES. We have asked for cotton seed meal of not less than 36 per cent. protein.

The prices of feeds are now:

COMPARATIVE ANALYSES

	Ground Special	Ground Standard	Molasses Hog Feed	Molasses Dairy (about)
Moisture	12.80	13.13	10.78	11.00
Crude Protein	13.31	14.38	18.42	17.00
Ether Extract (fat)	4.00	4.92	6.49	4.5
Crude Fibre	18.81	10.32	14.00	15.00
Carbohydrates	64.11	67.96	55.58	62.00

	1918 Bran Average	1918 Midds. Average
Moisture	11.35	11.03
Crude Protein	14.91	17.09
Ether Extract (fat)	3.99	5.33
Crude Fibre	12.43	10.89
Carbohydrates	63.50	62.23

PRICES

Ground Special	$32.00 per ton
Ground Standard	$49.00 " "
Molasses Dairy	$45.00 " "
Molasses Hog Feed	$55.00 " "

These prices are all subject to change without notice. This is not a quotation, but is the last price the mill submitted to us.

Note high protein and fat content of Molasses Dairy feed.

Filly, 3 yrs. old—1, Mrs. Geo. L. Boswall, French Fort, P. E. I.; 2, Frank Andrew, New Glasgow, P. E. I.

Filly, 2 yrs. old—1, Clara E. McMillan, Cymbria Lodge.

Filly, 1 yr.—1, H. L. Boswall, Marshfield.

Foal of 1918—1, A. A. McBeath, Marshfield, P. E. I.; 2, B H. Newson, North River, P. E. I.; 3, Andy McDonald, McDonald, York Point, P. E. I.

Mare, with foal at foot—1, A. A. McBeath.

Carriae Mare or Gelding, 15½ hands or over, shown in harness—1, Dr. Leo Frank, Charlottetown; 2, W. A. Wright, Charlottetown; 3, Mrs. J. Richards, Bideford.

Carriage Mare or Gelding under 15½ hands, shown in harness—1, G. D. Wright, Charlottetown; 2, John Cunningham, North River; 3, A. A. McBeath.

Champion Mare, any age—Diploma, A. A. McBeath.

For Dealers Only

Pr. Horses, Geldings or Mares, shown in carriage, Horse to count 60 per cent., appointment 40 per cent. Horses to be property of exhibitor—1, Horne Bros., Winsloe Sta.; 2. D. M. McDonald, Charlottetown.

Standard Bred Horses

Stallion, 4 yrs. old and upwards, shown in harness—1, Frank C. Reading, North Sydney; 2, Ines & Murdock, Montague; 3, J. H. G. Murphy, York Point.

Stallion, 2 yrs. old—2, J. F. MacKie, Charlottetown; 3, Duncan Robertson, North River.

Filly, 3 yrs. old and upwards—2, D. W. White, York Point.

Filly, 2 yrs. old—Duncan Robertson.

Filly, 1 yr. old—1, Duncan Robertson; 2, Alex. Kennedy, Southport; 3, D. W. White.

Saddle Horses

Gentleman's Saddle Horse, Gelding or Mare, ridden by a gentleman—1, Gordon Hughes, Charlottetown; 2, Dr. Frank, Charlottetown.
Frank, Charlottetown; 3, Horne Bros.

Lady's Saddle Horse, Gelding or Mare, ridden by a lady—1, Samuel Kennedy; 2, S. Holyroyd.

Roadsters

Mare or Gelding, 4 yrs. and upwards—1, H. R. Hillson, Charlottetown; 2, D. M. McDonald, Charlottetown; 3, Fulton Moreside, North River.

Filly or Gelding, 3 yrs. old—1, Mrs. Geo. L. Boswall; 2, J. H. Judson; 3, Wallace Wood, Charlottetown.

Mare or Gelding to be shown in carriage—1, W. M. Lea, Victoria; 2, Mills & Thorne; 3, J. J. McLeod.

Clydesdales

Registered in Canadian Clydesdale Drafthorse register.

Stallion, 4 yrs. old and upwards—1, Roper Bros.; 2, J. Norris Sinclair; 3, J. Heber Crosby.

tSallion, 3 yrs. old—1, J. F. McFarlane, Marshfield.

Stallion, 2 yrs. old—1, W. W. Crosby; 2, J. H. Crosby.

Stallion, 1 yr. old—1, Athol Roberts.

Filly, 3 yrs. old—1, W. W. Crosby.

Filly, 2 yrs. old—1, W. W. Crosby.

Filly, 1 yr. old—J. R. Munn.

Foal of 1918—1, Jas. F. Roper; 2, A. H. Boswall.

Mare, with foal at foot—1, A. H. Boswall; 2, Jas. Roper.

Champion Stallion, any age—Diploma, Roper Bros.

Champion Mare, any age—Diploma, A. H. Boswall.

Stallion and 2 of his get—Get not to exceed 3 yrs.—Diploma, J. Norris Sinclair.

Special Prizes iven by the Clydesdale Horse Association of Canada. Best Clydesdale Stallion, Imported or Canadian Bred—1, Roper Bros.

For the best Clydesdale Female, Imported or Canadian Bred—1, A. H. Boswall.

Best Clydesdale Stallion, Canadian Bred—1, W. W. Crosby.

Best Clydesdale Female, Canadian Bred—1, W. W. Crosby.

Best single mare or gelding in harness sired by a registered Clydesdale Stallion—1, J. L. Connolly.

Best. pr. of horses in harness (mares or geldings), sired by registered Clydesdale Stallion—1, J. Heber Crosby.

CHEESE SCORES AT CHARLOTTETOWN

	Month	Flavor 45 points	Texture 25 points	Closeness 15 points	Color 10 points	Finish 5 points	Total Score	Award
Hazelbrook Dairy	July	43.5	23.6	14.2	9.8	5.		
	Aug.	42.8	23.6	14.3	9.8	4.6		
	Sept.	42.5	23.	14.3	9.8	4.8		
		128.8	70.2	42.8	29.4	14.4	95.19	1
		42.93	23.40	14.26	9.80	4.80		
Grand River Dairy	July	43.	23.	14.5	9.8	5.		
	Aug.	42.7	23.	14.	9.8	4.8		
	Sept.	43.	23.5	14.3	9.8	4.8		
		128.7	69.5	42.8	29.4	14.6	94.98	2
		42.9	23.16	14.26	9.8	4.86		
New Glasgow	July	42.5	23.	14.9	9.9	4.7		
	Aug.	42.8	22.8	14.7	9.9	4.9		
	Sept.	42.0	23.4	14.3	9.9	4.7		
		127.3	69.2	43.9	29.7	14.3	94.78	3
		42.43	23.06	14.63	9.9	4.76		
Tignish	July	43.	23.	14.8	9.8	4.6		
	Aug.	41.	23.2	14.4	9.8	4.8		
	Sept.	43.	22.8	14.8	9.8	4.6		
		127.	69.0	43.8	29.4	14.0	94.36	4
		42.3	23.0	14.6	9.8	4.66		
Stanley Bridge	July	43.	23.2	14.4	9.7	4.6		
	Aug.	43.	23.	14.8	9.8	4.6		
	Sept.	41.5	22.5	14.0	9.7	4.5		
		127.5	68.7	43.2	29.2	13.7	94.09	5
		42.5	22.9	14.4	9.73	4.56		
Summerside	July	41.7	23.	14.9	10.	5.		
	Aug.	42.8	23.	14.	9.7	4.4		
	Sept.	43.	23.	13.5	9.8	4.		
		127.5	69.	42.4	29.5	13.4	93.92	6
		42.5	23.0	14.13	9.82	4.46		
Emerald	July	43.	23.4	14.2	9.9	4.5		
	Aug.	41.5	22.8	13.8	9.7	4.6		
	Sept.	42.	22.8	14.3	9.8	4.5		
		126.5	69.0	42.3	29.4	13.6	93.59	7
		42.16	23.00	14.1	9.8	4.53		
Union Valley	July	40.5	23.	14.	9.9	5.		
	Aug.	40.3	24.	14.6	9.9	5.		
	Sept.	42.5	22.7	14.5	9.8	5.		
		123.3	69.7	43.1	29.6	15.	93.55	8
		41.1	23.23	14.36	9.86	5.		
Kinkora	July	43.	22.6	13.8	9.9	4.9		
	Aug.	41.7	23.	14.	9.7	4.6		
	Sept.	42.	22.5	14.5	9.8	4.5		
		126.7	68.1	42.3	29.4	14.0	93.49	9
		42.24	22.70	14.10	9.8	4.66		
Hamilton	July	42.5	23.	13.6	9.8	4.9		
	Aug.	42.	23.	13.6	9.8	4.5		
	Sept.	42.	22.8	14.	9.8	4.6		
		126.5	68.8	41.2	29.4	14.0	93.28	10
		42.16	22.93	13.73	9.8	4.66		
Kensington	July	41.	22.7	14.3	9.8	4.6		
	Aug.	43.	23.	13.8	9.7	4.6		
	Sept.	42.6	22.8	13.7	9.7	4.5		
		126.6	68.5	41.8	29.2	13.7	93.25	11
		42.20	22.83	13.93	9.73	4.56		
Cornwall	July	42.5	23.	14.	9.8	4.5		
	Aug.	41.	22.8	14.5	9.7	4.5		
	Sept.	42.	22.9	14.	9.8	4.5		
		125.5	68.7	42.5	29.3	13.5	93.15	12
		41.83	22.9	14.16	9.76	4.5		
Hillsboro	July	42.	23.	13.7	9.9	5.		
	Aug.	42.	22.9	13.7	9.7	4.9		
	Sept.	41.	22.9	14.	9.7	4.6		
		125.	68.8	41.4	29.3	14.5	92.98	13
		41.66	22.93	13.8	9.76	4.53		
East River	July	40.5	23.3	14.	9.7	4.6		
	Aug.	40.5	23.	14.7	9.8	4.8		
	Sept.	42.3	23.	14.3	9.8	4.6		
		123.3	69.3	43.0	29.3	14.0	92.85	14
		41.1	23.1	14.33	9.66	4.66		
Egmont Bay	July	42.8	23.	13.7	9.7	4.6		
	Aug.	41.	23.	13.6	9.8	4.6		
	Sept.	41.	23.	13.5	9.8	4.6		
		124.8	69.	40.8	29.3	13.8	92.56	15
		41.6	23.	13.6	9.76	4.6		

Percherons

All prizes in the Percheron Class went to A. H. McKay, Charlottetown, without competition, excepting in the three year old stallion class, when the first prize went to David Reid & Son, Montague.

Draft Horses

Not eligible for Registration

Filly, 3 years old—1, Goodwin Newson; 2, Neil McPhail; 3, Athol Judson.

Filly, 2 yrs. old—1, Herman Jones; 2, Wallace Wood.

Filly, 1 yr.—1, John Cummings.

Foal of 1918—1, Oliver Saunders.

Mare, with foal at foot—1, Oliver Saunders.

Pr. of Draft Horses not less than 1400 lbs. each, in harness or truck—2, Horne Bros.

Draft Horse or Gelding, not less than 1400 lbs.—1, J. L. Connolly; 2, Russell Abbott.

General Purpose Horses

Mare or Gelding, 4 yrs. and upwards—1, Wallace Wood; 2, Miss Lena Ferguson; 3, Thos. R. Beer.

Mare or Gelding, 3 yrs.—1, J. J. McLeod; 2, J. C. Stewart.

Brood Mare with foal at foot—1, W. H. Roberts; 2, B. H. Newson.

Matched team, Gelding or Mares, in harness, not to exceed 1300 lbs. each—1, G. D. Wright.

Walking Horses

Mare or Gelding shown in carriage—1, P. Byrne; 2, Donald McMillan; 3, J. J. McLeod.

Mare or Gelding, Draft, to be shown in cart or truck waggon—1, Oliver Saunders.

Best four-in-hand team, Mares or Geldings—1, G. D. Wright, Charlottetown.

Single Pony, 12 hands and under in harness—1, Alex. McKay; 2, Horne Bros.; 3, Mrs. Henry Benoit.

CATTLE

Bull, 3 yrs. and upwards—1, J. M. Laird & Son, Kelvin Grove; 2, Alexander Agnew, Charlottetown; 3, S. C. Lane, Pownal.

Bull, 1 yr.—1, Albert Boswall, French Fort.

Bull Calf, under 1 yr. and over 6 mos.—1, J. M. Laird & Son; 2, S. L. Boswall.

Bull Calf under 6 mos. and over 3 mos.—1, J. M. Laird & Son; 2, J. Herman Jones, Pownal.

Cow in milk or calf, 3 yrs. and upwards—1, J. M. Laird & Son; 2 and 3, J. S. Irving, Cherry Valley.

Cow in milk or calf, 2 yrs. old—1, and 2, J. M. Laird & Son;; 3, J. S. Irving.

Heifer, 1 yr.—1. 2 and 3, J. M. Laird & Son.

Heifer Calf under 1 yr. and over 6 mos.—1 and 2, J. M. Laird & Son; 4, S. L. Boswall.

Heifer Calf, under 6 mos. and over 3 mos.—1 and 2, J. M. Laird & Son; 3, John Jewett, North River.

Champion Bull shown in class—Diploma, J. M. Laird & Son.

Champion Female—Diploma, J. M. Laird & Son.

Herd, 1 bull, and 4 females, over 2 yrs.—1, J. M. Laird & Son.

Breeders Young Herd, 1 bull, 4 females, under 2 yrs.—Diploma, J. M. Laird & Son.

Special prizes by Dominion Shorthorn Breeders Association

Bull. and 3 of his get—1, J. M. Laird & Son.

Cow and 2 of her offspring—1, J. M. Laird & Son; 2, J. S. Irving.

Breeder's Young Herd—1 and 2, J. M. Laird & Son.

Best four animals, either sex, any age, progeny of one cow—1, Jas. Irving.

Best 4 animals, get of one sire—1, J. M. Laird & Son.

(Continued on page 10)

THE MARITIME FARMER.

And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

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OCTOBER 8, 1918.

DATES OF ISSUE.

Octoebr 8-22
November 5-19
December 3-17

MAKING GOOD ROADS FROM BAD

Most men will admit that they never knew how bad country roads really were until they started driving an automobile, nor how easily an average dirt road could be improved by a little work of the right kind at the right time. Bumping over a bad road in one's own car is the most effective means known for arousing interest in the road problem and for getting started everywhere the kind of road work that really improves the highway. As the number of automobile owners increases in the country, so will increase the miles of roadway that are maintained by systematic roadwork, by dragging, grading, filling in low places and draining, but especially by dragging. The road drag is the most effective implement there is for caring for an earth road. No other device is anywhre near as effective in maintaining a smooth surface easy to ride over and easy to haul loads over, providing it is used properly and at the right time. The right time to drag is after a rain, when the mud is dry enough to work well, when the drag leaves the surface smooth and level. A little experience teaches just when a particular soil is in best condition after a rain to put the drag over it, and if every two or three miles of main highway in the well settled sections were in charge of a farmer residing on it, preferably the owner of an automobile, as is the case in many districts where the personal interest in roads of the man with the car is being made use of in this way, several thousand miles of improved highway could be added to the good roads map in a single season. The road drag is as necessary as the road itself. One man and a four-horse team can drag twenty miles of road per day at a cost of thirty-five cents per mile, which we would say is a cost that can be met by any municipality, at least for its main roads. It is gratifying to note the progress that is being made in all sections of the country in the improvement of the roads and the interest that people everywhere are taking in the problem. For better roads and a better knowledge generally of the means fo rkeeping earth roads in condition we are indebted chiefly to the motor car. Farmer automoblists are the most enthusiastic supporters the good roads movement has.

ARE THESE YOUR METHODS?

From "somewhere in Missouri" an answer to a world-old query reaches the editorial desk; a rather clever one it is too. And there is about as much truth as real poetry in the lines which we reproduce here in the hope that they may cause some devoted "dad" to sit up and take notice. We quote:

"Why did you leave the farm, my lad?
Why did you bolt and leave your dad?
Why did you beat it off to town
And turn your poor old father down?
Thinkers of platform, pulpit and press
Are wallowing in deep distress.
They seek to know the hidden cause
Why farmer boys desert their pa's.

"Well, stranger, since you've been so frank,
I'll roll aside the hazy bank:
I left my dad, his farm, his plow,
Because my calf became his cow.
I left my dad, 'twas wrong of course,
Because my colt became his horse.
I left my dad to sow and reap
Because my lamb became his sheep.
I dropped the hoe and stuck the fork,
Because my pig became his pork.
The garden truck that I made grow
Was his to sell, but mine to hoe.

"It's not the smoke in the atmosphere,
Nor the taste for life that brought me here.
Please tell the platform, pulpit, press
No fear of toil nor love of dress
Is driving off the farmer lads.
It's just the methods of their dads."

"My pig became his pork!" Yes, we had one once. It was not the best one in the litter either when we were given the right to call that "runt" our own. We found out afterwards that this merely meant the right to stuff and coddle that blessed pig to the limit of our desires; for it grew into a wide-backed, thrifty, "bully" sort of pig; quite good enough to go into the regular course of trade in breeding stock, and our fancied ownership was never altogether recognized. Perhaps that was a boy's own exaggerated idea of what belonged to himself by right of conquest, as it were; but he always considered that father really got the bacon! That is not exactly the explanation as to why this particular boy left the farm. There were more weighty reasons. But there is, nevertheless, some food for thought in the rhymestic lines.

AN APPEAL TO INTELLIGENT SELFISHNESS

Farmers are continually being urged not to be selfish in their aims—to look at the national rather than a sectional interest. A good deal of this sort of chatter comes from people who are themselves as completely and narrowly selfish as they are wholly divorced from real work. One of these pleaders for unselfishness, on the part of the other fellow, is the mayor of a western Ontario city and a man who, to the best of my belief, has not done any real work in the last ten years. On the same day that I heard this official pleading for unselfishness on the part of farmers, I heard a group of three or four men, all of whom had a waist measurement surpassing by several inches that about the chest, most vigorously denouncing the scale of prices being charged for food produced on the farm. It was all right, from their point of view, that everything the farmer has to buy should double and treble in price, but all wrong that the price of things the farmer had to sell in order to make a living should advance at all.

Occasionally, however, this appeal for unselfishness on the part of the farmer does come from good and sincere people. As a general principle, too, the appeal made by such is in every way commendable. The ideal of none for the party but all for the state is a most excellent one. But we are faced by a condition, not a theory. All classes in the community except agriculture are organized. Individual members of these other classes may be all right, but collectively they are pursuing wholly selfish aims. They may be doing this unconsciously, but doing it they assuredly are. Under such circumstances, if farmers do not show an intelligent selfishness, for the time being at least, they are going to be forced into an inferior position, a very much inferior position. And that would be disastrous not only to agriculture but to every other legitimate interest as well.

It would be disastrous for the nation as a whole for this reason: Farmers form the one great class with ample opportunity for real thinking. Not that they have more leisure than people of other classes; they have less leisure. But a man can think while following a plow, driving a binder, or even while forking sheaves onto a load. A man cannot really think amid the clatter of machinery in a factory or in the bustle of an office with a telephone at one side, a stenographer at the other, and callers constantly demanding attention in front. Moreover the farmer is independent; he does not depend on others for employment; he is not, at present at least, dependent on great financial interests for the means of carrying on his business. There is no other class of which this can be said. And the proper working of democratic institutions depends on the existence of a really independent body of voters. Not only is a well established agriculture essential to the preservation of real democracy, but it is essential to the permanent real prosperity of every other class. For these reasons I make no apology for a direct appeal to intelligent selfishness, to a looking to the preservation of their own special and vital interests, on the part of farmers.

THE BEST PAYING PROPOSITION ON THE FARM

It has been proved beyond doubt that the drains constitute one of the best investments possible to the farmer with surplus cash and a wet farm. For the man without the surplus there is no purpose for which he can borrow money with greater assurance that it will be refunded principal and interest in a very short time than by draining his farm. The Government could not render more effective aid to the farmers than by loaning them money with which to drain their lands at a low rate of interest.

The cost of tile drainage runs from $25 to $40 per acre. This amount to say $3,000 per 100 acres, a considerable sum for most of our farmers to raise, but they may be sure that the farm will repay it.

Professor Day, of Guelph, conducted an investigation some years ago in Ontario as to results of underdrainage in that province.

The following facts were established: (1) The average cost of drainage was $25 per acre; (2) that underdrainage paid for itself in from 2 to 4

* * *

years; (3) that the average increase in yield per acre was worth $20; and (4) that underdrainage proved beneficial in dry as well as in wet seasons. This last point has been expressed thus by one observer: "Underdrainage makes wet lands dry and dry lands moist." This sounds paradoxical, but it is true.

CLOVERS AND CLOVER SEED PRODUCTION

Red clover is one of the principal foundation stones of permanent agriculture. It has for centuries constituted an important factor in maintaining a permanent system of agriculture in the Old World. In this country, it has assumed in recent years a more and more important role in the maintenance of soil fertility. It is utilized both as hay and as a pasture crop, and sometimes as a soiling crop.

Clover as Feed—Clover cut at the right time and properly cured can hardly be surpassed as a dry fodder for dairy cows and beef cattle. A moderate amount mixed with timothy is also good for horses. Sheep and young stock are fond of clover and will thrive better upon it than upon timothy. It contains more digestible protein and is also a better fat producing fodder than timothy.

Clover as a Fertilizer—Clover stores in the tubercles on its roots nitrogen from the air and it also forms humus in the soil when ploughed under as a green manure. Consequently, it adds plant food to the soil and improves its texture. From 1894 to 1902 comprehensive experiments were conducted at the Central Experimental Farm, Ottawa, to determine the effect of clover upon soils. Various kinds of farm crops were grown on plots, a portion of which had grown clover in the previous and a portion of which had not been seeded to clover the previous year. A large number of plots were used in this experiment, many kinds of crops were grown and as the experiment extended over several years, the results are reliable and valuable. There was a noticeable increase in yield on the plots where clover had been grown. The increase in Banner oats amounted in some instances to as much as 19 bushels an acre. The increase in barley was as high as 15 bushels an acre. In corn fodder, the increase on the plots receiving clover was as high as four tons in the case of Longfellow, while with Leaming, there was an increase, in some instances, of over 11 tons per acre. Potatoes showed an increase as high as 50 bushels to the acre on the clover plots.

The method of conducting these experiments was, briefly, as follows: Ten or twelve pounds of clover seed were swon in the spring with a nurse crop. Late in the fall the resulting clover crop was ploughed down if grain was to follow the next year, or ploughed down the second or third week in May of the following spring if corn and potatoes were to be planted. Thus, it was from only one year's growth of the clover, that these results were obtained. Other experiments have been conducted which have shown that a crop of clover stubble ploughed under increased crop yields.

Good Seed Necessary.—In sowing clover, good seed should be used. Good seed, though costing more, has been found by repeated trial to be the cheapest in the end.

Methods of Seeding.—While clover has been hailed as a great soil improver, it must not be thought that it can always be grown successfully on poor and worn-out soils, or that it will give satisfactory results when carelessly sown. In some counties, clover is usually seeded with the spring grain. On sandy soils it should be sown a little deeper than on the heavier soils in order that it may come in contact with the moist earth, which will aid germination. From one and one half to two inches is not too deep in sandy soil. A better seeding will usually be obtained when sown with a nurse crop that will be harvested early than if sown with later maturing crops. When clover seed is being sown, it is best to sow the nurse crop slightly thinner than usual. A light top dressing of manure on the knolls and on spots where the soil is poor will often prove beneficial and will help the young plants to make a stronger growth to carry them through the winter.

There are various opinions regarding the effect of clover seeding on the nurse grain crop. This matter has received attention from the Central Experimental Far mat Ottawa and it has been found that the seeding of clover has no noticeable effect upon the yield of the grain crop with which it is sown. Further south, it has been found that, when the nurse crop is cut, the hot dry weather often kills out the young crop of clover. This may occasionally happen in Eastern Ontario, but the weather is usually cool enough and there is generally sufficient moisture in the soil to enable the young plants to survive and become vigorous before going into the winter.

Clover Sown with Summer Pasture.—Land where annual summer pastures are sown, such as oats and peas, or oats and vetches is usually a good place to seed with clover. It has been found that, on account of the nurse crop being pastured off early, the clover seeding is given an opportunity to develop. While the tramping of the ground may be thought to injure the clover plants, it has been found to be beneficial rather than harmful.

Seeding with Fall Grain.—While very little fall grain is grown in Dundas county, the method of seeding fall crops may be here maintained. Timothy is sown in the fall with the fall grain and the clover seeded in the spring. The clover seed should be sown upon the last light fall of snow late in the spring or on a morning when the ground is slightly frozen.

Thickness of Seeding.—Many farmers fail to get a good stand of clover because the ydo not sow enough seed. Where a field is to be kept for hay and pasture, timothy should always be sown with the clover. If the clover does not come through the winter successfully, or, for some other reason, does not give a good crop, the farmer will have the timothy to fall back upon. A good mixture, is eight pounds of red clover, two pounds of alsike, and eight pounds of timothy. This may seem a fairly heavy seeding, but from many tests conducted at our experimental stations, the thick seeding of clover and timothy has given uniformly better results than the thin seeding. On the heavier soil of Dundas county, if the season is favourable, a lighter seeding of clover will give good crops, but it is safer to sow a sufficient amount to allow for the seeds that will not germinate and for the plants that will be killed out. The thicker stand of clover also forms a winter protection and helps the plants to survive the cold weather. A thick crop of clover also helps to control and smother out weeds. In a thin crop of clover there will always be open spaces where weeds ar sure to grow. An excellent test for each farmer in Dundas county to conduct would be to sow, on a field where soil conditions are uniform, a round or two of the drill with a lighter seeding than he usually sows, and a round or two of the drill with a heavier seeding than he usually sows. The two plots should be sown side by side and each seeding carefully marked in order to compare the results, both as to ability to come through the winter and as to yield.

Care of Clover Going into the Winter.—Many farmers make a practice of pasturing the young seeding in the fall after the grain crop has been cut. They think it is a waste to allow the young crop to go unpastured. Experience has shown that very often young clover crops closely pastured down have been killed out during the winter, because the vitality and strength of the plants were gone and in their weakened condition they could not survive the trying winter and spring weather.

If clover is being tried on a field where the soil is poor, it is a good plan to give it a light top dressing of manure after the grain crop has been cut. This will strengthen the young plants and will help them to come through the winter in better condition.

Seed Production.—A very small percentage of the farmers in Dundas county are producing their own clover seed. This is not because it cannot be successfully produced in Dundas, but because very little attention has been given to this matter in the past. Some splendid crops of seed were harvested and threshed by Dundas County farmers during the past season. There are many advantages to be gained by growing and sowing home-grown seed. The farmer who has seed of his own this year (1918) will not likely sow it so sparingly a she would if he had to buy it at the present high price. Best results are obtained from the home-grown seed. On a number of illustration farms conducted in other parts of Ontario by the commission of Conservation in previous years, home-grown seed, and seed purchased from seed merchants, were sown side by side in the same field, under uniform conditions. In every instance, the home-grown seed came through the winter better. In some cases, the crop from home-grown seed came through the winter safely, while that from purchased seed was badly injured. By sowing home-grown seed, there is no risk of introducing noxious weeds from other parts of the country as often happens when the seed is purchased.

The second crop of clover is often pasture dwhen it would pay much better to allow it to ripen for seed. It does not matter if some timothy or other grasses be present, as the clover aftermath is but little affected by other grasses in the second crop, which usually make a light second growth. It often happens too, that a second crop of clover looks thin and may be thought too poor to produce a crop of seed. Let it be remembered, however, that a thin crop will not produce much pasture. In one case in Quebec, known to the writer, a 24-acre field of second crop, which was being kept for seed, looked to be too thin to be worth harvesting and though it gave only one-half ton to the acre of the clover before being threshed, it yielded 141 pounds of seed per acre. Had this field been pastured much of the clover would have been tramped down into the ground and the amount of feed really obtained by the stock would have been small.

Cut First Crop Early.—A mistake commonly made by many farmers is the cutting of the hay crop too late. Very often this will prevent the harvesting of a crop of clover seed. The seed on red clover comes from the second cutting; consequently, the first crop should be cut early to allow the second crop to produce seed before danger of frost in the fall. To get best results, the first crop should be cut very early. Many farmers postpone the cutting of the first crop, thinking that the longer they leave it the tomtons of hay they will obtain. This is true up to a cetrain point, but, after thore point is reached in the maturity of the crop, the percentage of crude fibre becomes greater, lowering the percentage of digestible protein. Early ctu hay, providing it is well cured, will be more nutritious and more readily eaten than hay which is allowed to become too ripe. Cut the first crop early if the second crop is to be saved for seed.

Keep Weeds Cut.—Home-grown seed is good, but absolutely clean home-grown seed is better. There will likely be more weeds in th first crop than in the second. The weeds in the second crop should be kept cut or pulled. This is usually an easy matter to handle. The weeds at this time of year are not so troublesome and, as the second crop does not usually grow so high, the weeds can be seen and removed. It will pay to do it. The cleaner the seed, the higher it will grade; and the higher it will grade, the higher price that can be obtained for that which is to be sold.

Time to Cut for Seed.—As a rule, the second crop may be cut for seed when nearly all of the heads are well browned. Do not be governed altogether, though, byt the number of browned heads. It is well to go carefully over the field and pluck a few heads here and there and rub them out in the palm of the hand. If the heads shell easily and the seeds come out clean, it is time to cut. If the seed is soft and not properly filled, or if it cannot be shelled out easily, let the crop stand, even if a few of the riper heads are lost. If the seed is ripe in the head, the early frosts of fall will not hurt it. If the seed is not ripe, it will not be good for sowing, even if cut to avoid frost. A common mistake made by inexperienced clover seed growers is to cut the seed crop too early.

How to Cut.—The old self-rake reaper was commonly used in Western Ontario for cutting clover seed and a few may be found on farms to-day, kept for this purpose. Some implement companies manufacturc a clover harvester which is especially designed to cut clover seed. Any farmer who has not one of the self-rake reapers, or a clover harvester need not be deterred from growing clover on this account as other devices can be used. The ordinary mower can be utilized for this purpose. It should be used in the morning while the dew is still on, to prevent the seed from shelling. A better arrangement is the ordinary mower with a table attached to the cutter bar. It requires two men to handle this outfit. A couple of holes are drilled at the back of the cutter bar and the table is attached by means of wire close up to the cutter bar and allowed to drag on the ground behind. A man follows with a fork or rake to keep the clover drawn back on to the table, and pushes it off to one side in windrows. The ordinary grain binder may also be used, the twine and the trip arm may be removed and the two small boards that hold the sheaf may be slackened or removed in order to allow the clover a free course to the ground. This will lay it out in a swath on the stubble in a splendid position to dry and out of the way of the horses and machine. If the clover is high enough to permit of cutting in this way, it is probably one of the best methods which can be used. The windrow can be easily gathered with a barley fork.

The length of time to allow the clover to remain in the windrow will depend on the weather and the condition of the crop when cut. It frequently happens that the crop will have to remain out two or three weeks before it is dry enough to thresh or draw into the barn.

Method of Threshing.—The clover huller is the best machine for threshing the seed. A better job can be done with this machine than with any other, but it is not absolutely necessary to have a huller. A fairly good job can be done with teh ordinary grain thresher providing certain adjustments are made. If the clover straw is to be used for feed, it might be well to run the material through, just the same as grain is put through. This will separate the heads and chaff from the straw. The heads and chaff can then be put through a second, or third time, but before putting them through, a plate of sheet iron or a hard board should be placed directly behind the cylinder, closing up all of the back space except about nine inches on the left-hand end of the cylinder. Another board should be placed in front of the cylinder to close up all except one foot at the right-hand end. All small holes in the concaves should be closed and the concaves set as close to the cylinder teeth as possible. This will cause all of the material to pass from one end of the cylinder to the other, which will hull the seed much better than if passed through in the ordinary way. The chaff can be put through two or three times carefully, and it will be found that nearly all of the seed will come out clean. This is not as good as the clover huller, but is very useful when a huller cannot be obtained.

THE PRINCE EDWARD ISLAND EXHIBITION

(Continued from page 7)

Two animals, either sex, progeny of one cow—1 and 2, J. M. Laird & Son.

Heresfords

Bull, 2 yrs.—1, G. L. Hayden, Cherry Valley.

Bull, 1 yr.—1, G. L. Hayden.

Cow in milk or calf, 3 yrs. and upwards—1, G. L. Hayden.

Cow in milk or calf, 2 yrs. old—1, G. L. Hayden.

Heifer, 1 yr. old—1, G. L. Hayden.

Heifer Calf, under 1 yr. and over 6 mos.—1, G. L. Hayden.

Heifer Calf under 6 mos. and over 3 mos.—1, G. L. Hayden.

Herd, 1 bull and 4 females, over 2 yrs.—1, G. L. Hayden.

Aberdeen or Polled Angus

With Certificate of Registration

Bull, 3 yrs. and upwards—1, Horne Bros., Winsloe Sta.

Bull, 2 yrs.—1, Horne Bros.

Bull, 1 yr.—1, Horne Bros.

Bull Calf, over 1 yr. and under 6 mos.—1, Horne Bros.

Cow in milk or calf, 3 yrs. and upwards—1 and 2, Horne Bros.

Cow in milk or calf, 2 yrs. old—1 and 2, Horne Bros.

Heifer, 1 yr. old—1 and 2, Horne Bros.

Heifer Calf under 1 yr. and over 6 months—1 and 2, Horne Bros.

Heifer Calf, under 6 mos. and over 3 mos.—1, Horne Bros.

Herd, 1 bull and 4 females over 6 yrs.—1, Horne Bros.

Breeders Young Herd, 1 bull and 4 females under 2 yrs. old—Diploma, Horne Bros.

Champion Bull, shown in class—Diploma, Horne Bros.

Champion Female, shown in class—Horne Bros.

Ayrshires

Bull, 3 yrs. and upwards—1, Easton Bros., Charlottetown; 2, A. E. Ings, Charlottetown; 3, Pope Noy, Hazelbrook.

Bull, 2 yrs. old—1, Easton Bros.

Bull, 1 yr.—1, Vernon McMillan, Charlottetown; 2, Easton Bros.; 3, Edwin Reid, Rollo Bay.

Bull Calf, under 1 yr. and over 6 mos.—1, Edwin Reid; 2, Easton Bros.

Bull Calf, under 6 mos. and over 3 mos.—1 and 2, Easton Bros.

Cow in milk or calf, 3 yrs. old—1, A. McRae & Sons; 2, W. R. Yonker, Charlottetown; 3, Edwin Reid.

Cow in milk or calf, 2 yrs. old—1, John Barr, Charlottetown; 2, Ernest Munn, Hazelbrook; 3, Easton Bros.

Heifer, 1 yr.—1 and 3, Easton Bros.; 2, A. McRae & Sons.

IN BUYING WESTERN LAND you can be sure of fair dealing and reliable information if you make your enquiries through

UNITED GRAIN GROWERS' SECURITIES COMPANY, LTD.

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SECURITIES COMPANY, LTD.

WINNIPEG, REGINA, CALGARY.

Heifer Calf, under 1 yr. and over 6 mos.—1, W. R. Yonkers; 2, A E. Ings.

Heifer Calf, under 6 mos. and over 3 mos.—1, A. E. Ings; 2, Easton Bros.

Herd, over 2 yrs.—Easton Bros.

Breeders Young Herd—Diploma, Easton Bros.

Champion Bull shown in class—Diploma, Easton Bros.

Champion Female shown in class—Diploma, A. McRae & Sons.

Special prizes by the Canadian Ayrshire Breeders' Association.

Best 4 animals, either sex, any age, get of 1 sire, bred by exhibitor—1 and 2, Easton Bros.

Best 2 animals, either sex, any age, produce of one cow, owned by exhibitor—1, Easton Bros.; 2, John Barr; 3, A. McRae & Sons.

Cow in milk or calf, 4 yrs. and upwards—1, A. McRae & Son; 2, Edwin Reid; 3, Easton Bros.

Jerseys

Bull, 3 yrs. old and upwards—1, Wallace Stead, Highfield; 2, Alex. McKay, Charlottetown.

Bull, 1 yr.—1, Wallace Stead.

Bull Calf, under 1 yr. and over 6 mos.—1, Stephen Holroyd, Winsloe; 2, Alex. McKay.

Bull Calf, under 6 mos. and over 3 mos.—1, 2 and 3, Wallace Stead.

Cow in milk or calf, 2 yrs. old—1, Wallace Stead.

Heifer, 1 yr.—1, Wallace Stead.

Heifer calf, senior—1, Wallace Stead

Heifer Calf, Jr.—1 and 2, Wallace Stead.

Herd, 1 bull, 4 females over 2 yrs.—Diploma, Wallace Stead.

Breeders Young Herd, under 2 yrs.—Diploma, Wallace Stead.

Champion Bull, any age—Diploma, Wallace Stead.

Champion Female—Diploma, Wallace Stead.

Guernseys

All prizes to Roper Bros., without competition.

Holstein-Friesian

Bull, 3 yrs. old—1, W. J. Gibson & Son, Marshfield.

Bull, 2 yrs. old—1, W. M. Lea, Victoria.

Bull, 1 yr. old—1, W. M. Lea.

Bull, Senior Calf—1, W. J. Gibson & Son; 2, W. M. Lea.

Bull, Junior Calf—1, W. M. Lea; 2, W. J. Gibson & Son.

Cow, 3 yrs. old—1, 2 and 3, W. M. Lea.

Cow, 2 yrs. old—1, W. M. Lea; 2, W. J. Gibson & Son

Heifer, 1 yr. old—1 and 3, W. J. Gibson & Son; 2, W. M. Lea.

Heifer, Senior Calf—1, W. J. Gibson & Son; 2, W. M. Lea.

Heifer, Junior Calf—1 and 2, W. M. Lea.

Herd—1, W. M. Lea; 2, W. J. Gibson & Son.

Breeders Young Herd—Diploma, W. J. Gibson & Son.

Holstein-Friesian Association Special Prizes

Best 4 calves, bred by exhibitor—1, W. M. Lea; 2, W. J. Gibson & Son.

Best 4 animals, any age, get of one sire—1, W. M. Lea; 2, W. J. Gibson & Son.

Best 2 animals, any age, get of one cow—1, W. M. Lea; 2, W. J. Gibson & Son.

Breeders' Young Herd—1, W. J. Gibson & Son.

Canadian Bank of Commerce Special Prize Champion Holstein-Friesian heifer, one year old—Silver Medal, W. J. Gibson & Son.

Beef Grades

Cow, 4 years old—1, Horne Bros.; 2, S. L. Boswall; 3, J. S. Irving; 4, Jos. Praught.

Cow, 3 years old—1, Horne Bros.; 2, J. S. Irving; 3, G. L. Hayden.

Cow, 2 yrs. old—1, Jos. Praught.

Heifer, 1 yr. old—1, Wallace Stead; 2, Jos. Praught; 3, Albert Boswall.

Heifer, Senior Calf—1, Jos. Praught; 2, G. L. Hayden.

Heifer, Junior Calf—1, J. S. Irving.

Ayrshire Grades

Cow, 4 years old—1, J. H. Love; 2, Wm. Gregory; 3, Calvin Wood.

Cow, 3 yrs. old—1, S. Holroyd; 2, Edwin Reid; 3, J. H. Love.

Heifer, 2 yrs. old—1, J. H. Love.

Heifer, 1 yr. old—1, A. McRae & Sons; 2, Easton Bros.

Heifer, Junior Calf—1, A. McRae & Sons; 2, Easton Bros.

Jersey and Guernsey Grades

Cow, 4 yrs. old—1, Jas. F. Roper; 2, Stephen Holroyd; 3, A. McRae & Sons.

Cow, 3 yrs. old—1, Jas. F. Roper.

Cow, 2 yrs. old—1, Jas. F. Roper.

Heifer, 1 yr. old—1, S. Holroyd; 2, Jas. F. Roper; 3, J. L. Connolly.

Heifer, Senior Calf—1, S Holroyd; 2, Jas. F. Roper.

Heifer, Junior Calf—1, Jas. F. Roper.

Holstein Grades

Cow, 4 yrs. old—1, W. M. Lea; 2, J. L. Connolly.

Cow, 3 yrs. old—1, W. J. Gibson & Son.

Heiefr, 2 yrs. old—1, W. M. Lea; 2, Calvin Woods; 3, Ernest Ings.

Heifer, 1 yr. old—1, Calvin Wood; 2, J. H. Love.

Heifer, Senior Calf—1, Wm. Gregory; 2, W. M. Lea.

Heifer, Junior Calf—1, Calvin Wood; 2, W. J. Gibson & Son.

W. M. Lea, Special Prize for Best Heifer Calf under 1 year, sired by a Pure Bred Holstein Bull—1, Calvin Wood; 2, Wm. Gregory; 3, W. M. Lea.

Advance in Ford Prices

Owing to the high csot of raw materials the Ford Motor Co. of Canada have been forced to advance al lprices on cars. The changes are as follows:—

TOURING	$ 690
RUNABOUT	$ 660
CHASSSIS	$ 625
COUPE	$ 875
SEDAN	$1075
TRUCK	$ 750

F.O.B. FORD, ONTARIO

In our August 27th issue the old prices were quoted. The advance is these prices is a small matter considering War conditions and the evergrowing popularity of the Ford will hardly be affected by the change.

P. E. Island Dept. Agriculture Special Prize to the person showing the greatest skill in judging Dairy Cattle—1, Earle McRae; 2, Percy McRae; 3, E. Ings; 4, W. Gibson; 5, P. Praught.

Steers

Best pair fat Cattle, 2 yrs. old—1, G. L. Hayden.

Best single fat animal, 2 yrs old—1, G. L. Hayden.

Best pair fat animals, 1 yr. old—1, Jos Praught.

Best single fat animal, 1 yr. old—1, Jos. Praught.

Canadian Bankers Competition for Boys and Girls under 17 yrs. Dairy Calf, Pure Bred or Grade, fed by same—1, Myrtle Stead; 2, Ella Ings; 3, Russel Roper; 4, Clifford Munn; 5, Geo. McLaren.

Prizes iven by Prof. G. E. Day to Boy or Girl for best fed beef calf—1, Cyril Jones; 2, W. Praught.

SHEEP

Leicesters

Ram, 2 shears and over—1, S. L. Boswall, Pownel; 2, Almon Boswall, Pownal; 3, W. H. Moase, New Annan.

Ram, shearling—1, S. L. Boswall; 2, W. H. Moase; 3, S. C. Stewart & Son, Dunstaffnage

Ram, lamb—1, S. C. Stewart; 2, W. H. Moase; 3, S. L. Boswall.

Ewe, 2 shears and over—1, S. L. Boswall; 2, S. C. Stewart; 3, W. H. Moase.

Ewe, shearling—1, S. C. Stewart; 2, S. C. Lane; 3, S. L. Boswall.

Ewe, lamb—1, W. H. Moase; 2, S. C. Stewart; 3, S. C. Boswall.

Flock, 1 ram, 2 ewes, each to have raised a lamb this season, 1 shearling ewe, 1 ewe lamb—1, S. L. Boswall; 2, S. C. Stewart; 3, W. H. Moase.

Cotswolds

Ram, 2 shears and over—1, John Tweedy, Ernscliffe; 2, Almon Boswall.

Ram, shearling—1, Harry Tweedy, Ernscliffe; 2 and 3, John Tweedy.

Ram, lamb—1, Almon Boswall; 2, John Tweedy; 3, Harry Tweedy.

Ewe, 2 shears and over—1 and 3, John Tweedy; 2, Harry Tweedy.

Ewe, shearling—1 and 2, John Tweedy; 3, Harry Tweedy.

Ewe, lamb—1 and 3, Almon Boswall; 2, John Tweedy.

Flock—1, John Tweedy; 2, Harry Tweedy; 3, Almon Boswall.

Lincolns

Ram, 2 shears and over—1, Albert Boswall, French Fort; 2, Pope Noy, Hazelbrook.

Ram, shearling—1 and 3, Albert Boswall; 2, Ernest Lund, Hazelbrook.

Ram, lamb—1 and 3, Albert Boswall; 2, Pope Noy.

Ewe, 2 shears and over—1 and 2, Albert Boswall; 3, Ernest Lund.

Ewe, shearling—1, 2 and 3, Albert Boswall.

Ewe, lamb—1, Ernest Lund; 2, Albert Boswall; 3, Pope Noy.

Flock—1, Albert Boswall; 2, Ernest Lund; 3, Pope Noy.

Southdowns

Ram, 2 shears and over—1, W. M. Lea, Victoria; 2, E. Saunders, Winsloe; 3, Oliver Saunders, Wnisloe.

Ram, shearling—1 and 2, Oliver Saunders; 3, E. Saunders.

Ram, lamb—1 and 2, E. Saunders; 3, Oliver Saunders.

Ewe, 2 shears and over—1 and 3, E. Saunders; 2, Oliver Saunders.

Ewe, shearling—1 and 3, E. Saunders; 2, Oliver Saunders.

Ewe, lamb—1 and 2, E. Saunders; 3, Oliver Saunders.

Flock—1, E. Saunders; 2, Oliver Saunders.

Shropshires

Ram, 2 shears and over—1 and 2, Geo. L. Boswall; 3, Almon Boswall.

Ram, shearling—1, Geo. Boswall; 2, J. S. Irving, Cherry Valley.

Ram, lamb—1 and 2, Geo. Boswall; 3, Almon Boswall.

Ewe, 2 shears and over—1 and 2, Geo. L. Boswall; 3, Almon Boswall.

Ewe, shearling—1, J. Boswall Stewart, Dunstaffnage; 2 and 3, Geo. L. Boswall.

Ewe, lamb—1 and 2, Geo. L. Boswall; 3, Almon Boswall.

Flock—1, Geo. L. Boswall; 2, Almon Boswall.

Oxford Downs

Ram, 2 shears and over—1, J. M. Laird & Sons, Kelvin Grove; 2, A. E. Boswall, York.

Ram, shearling—1, Burden Goodwin, Baie Verte, N. B.; 2, J. M. Laird & Son; 3, David Laird & Son.

Ram, lamb—1 and 3, Burden Goodwin; 2, J. M. Laird & Son.

Ewe, 2 shears and over—1, J. M. Laird & Son; 2 and 3, Burden Goodwin.

Ewe, shearling—1, Burden Goodwin; 2 and 3, J. M. Laird & Son.

Ewe, lamb—1 and 2, Burden Goodwin; 3, J. M. Laird & Son.

Flock—1, Burden Goodwin; 2, J. M. Laird & Son; 3, A. H. Boswall.

Oxford Down Association Specials

Best yearling ram—1, J. M. Laird & Son.

Best yearling Ewe—1, Burden Goodwin; 2 and 3, J. M. Laird & Son.

Best Pen 4 lambs—1, Burden Goodwin; 2, J. M. Laird & Son.

Suffolks

Ram, 2 shears and over—1, A. Parker Horne, Winslow; 2 and 3, J. Reagh Horne, Winslow.

Ram, shearling—1, J. Reagh Horne; 2, A. Parker Horne.

Ram, lamb—1, J. Reagh Horne; 2, A. Parker Horne.

Ewe, 2 shears and over—1 and 3, A. Parker Horne; 2, J. Reagh Horne.

Ewe, shearling—1 and 3, A. Parker Horne; 2, J. Reagh Horne.

Ewe, lamb—1 and 3, A. Parker Horne.

Flock—1, A. Parker Horne; 2, J. Reagh Horne.

A Safe Investment

If your neighbor has a horse that is blemished and after two or three weeks of faithful treatment you see this same horse sound and in the best of spirits. doesn't it make you feel guilty to see your own horse "Down and Out" and you making no effort to relieve him?

This is the case with many horse owners. If they see a puff or bunch developing on their horse, instead of starting treatment immediately with a good, reliable liniment, they let it go, thinking that Nature will take care of it. The result in many cases is that the horse gets so bad that he is useless.

When using any kind of a liniment the first thing to be considered is, "Is it safe?" Absorbine is perfectly safe and harmless and is composed of the best ingredients that can be purchased. A pamphlet of interest to horse owners will be sent to anyone upon request. If your case requires special directions or there is some point not made perfectly clear in the pamphlet, the manufacturers are always glad to take the matter up and suggest line of treatment for each individual case.

Absorbine $2.50 a bottle at durggists or postpaid.

W. F. YOUNG, P.D.F.
124 Lymans Building.
Montreal, Canada.

Hampshire Downs

All Hampshire prizes were won by Cephas Nunn, Winsloe, without competition.

Dorsets

Ram, 2 shears and over—1, John Tweedy, Ernscliffe.

Ram, shearling—1, Geo. L. Boswall; 2, John Tweedy.

Ram, lamb—1 and 2, Geo. Boswall; 3, John Tweedy.

Ewe, 2 shears and over—1 and 2, Geo. Boswall; 3, John Tweedy.

Ewe, shearling—1 and 2, Geo. Boswall; 3, John Tweedy.

Ewe, lamb—1, Geo. L. Boswall; 2, John Tweedy.

Flock—1, Geo. L. Boswall; 2, John Tweedy.

Cheviots

Ram, 2 shears and over—1, Chas. D. McLean, Clyde River; 2, Robert Furness, Vernon Bridge.

Ram, shearling—1, Roebrt Furness.

Ram, lamb—1, Chas. D. McLean; 2 and 3, Robert Furness.

Ewe, 2 shears and over—1 and 3, Robert Furness; 2, Cephas Nunn.

Ewe, shearling—1 and 3, Robert Furness; 2, Chas. D. McLean.

Ewe, lamb—1 and 2, Robert Furness.

Flock—1, Robert Furness.

Canadian Bank of Commerce Special for best flock of sheep, any breed—Bronze Medal, Albert Boswall.

Long Wool Grades

Ewe, 2 shears and over—1, Albert Boswall; 2, S. C. Lane; 3, A. C. Boswall; 4 and 5, Edwin Reid.

Ewe, shearling—1, A. C. Boswall; 2, S. C. Lane; 3, Robert Furness.

Ewe, lamb—1 and 3, Pope Noy; 2, Ernest Lund.

Wether, shearling—1 and 2, S. C. Lane; 3, Robert Furness.

Wether, lamb—1, Robert Furness; 2, Alex. R. McKay; 3, S. C. Stewart.

Best fat ewe or wether—1, Robert Furness; 2, A. H. Boswall; 3, A. C. Boswall.

Short or Medium Wool Grades

Ewe, 2 shears and over—1, J. M. Laird & Son; 2, Oliver Saunders; 3, Cephas Nunn; 4, E. Saunders; 5, J. C. Irving.

Ewe, shearling—1, J. M. Laird & Son; 2, Geo. L. Boswall; 3, Cephas Nunn.

Ewe, lamb—1, Oliver Saunders; 2, J. M. Laird & Son; 3, Geo. L. Boswall.

Wether, shearling—1, Oliver Saunders.

Wether, lamb—1, Cephas Nunn; 2 and 3, Oliver Saunders.

Best fat ewe or wether—1 and 2, Oliver Saunders; 3, Cephas Nunn.

Fleece Wool

Domestic, medium—1, Earl W. Foster, Marshfield; 2, Cephas Nunn, Winsloe.

Domestic, Coarse—1, S. C. Lane, Mt. Mellick, Pownal; 2, Heath E. Foster, Marshfield.

SWINE

Berkshires

Boar, 2 yrs. old—1, H. R. Moase, Kensington.

Boar, 1 yr. old—1, Ernest Ings, Hazelbrook.

Boar, over 6 months and under 1 yr. —1, H. R. Moase; 2, S. C. Lane, Mt. Mellick.

Boar, under 6 months—1, A. E. Ings; 2, Peter Brodie, York.

Sow, 2 yrs. old—1, Ernest Ings; 2, Peter Brodie.

Sow, 1 yr. old—1, Peter Brodie.

Sow, over 6 months and under 1 yr. —1 and 2, H. R. Moase; 3, A. E. Ings.

Sow, under 6 months—1 and 4, H. R. Moase; 2, Peter Brodie; 3, A. E. Ings.

Pair of pigs, 3 months old and under 6 months, farrows excluded—1, H. R. Moase; 2, A. E. Ings; 3, Ernest Ings.

Brood Sow with litter—1, Ernest Ings.

Sweepstake Boar—1, H. R. Moase.

Sweepstake Sow—1, H. R. Moase.

Pen, 1 boar and 3 females—1, H. R. Moase.

Yorkshires

Boar, 1 yr. old—1, H. R. Moase; 2, Wallace Stead; 3, Geo. Csockett.

Boar, over 6 months and under 1 yr. —1, Geo. Crockett; 2, H. R. Moase; 3 and 4, Jas. F. Roper.

Boar under 6 mos.—,1 Geo. Crockett.

Sow, 2 years and over—1, Geo. Crockett.

Sow, 1 year old—1, G. W. Wood; 2, Geo. Crockett.

Sow, 6 months and under 1 year—1, Geo. Crockett; 2, G. W. Wood.

Sow, under 6 months—1, H. R. Moase; 2, Geo. Crockett; 3, S. C. Stewart.

Pair of Pigs, 3 months old and under 6 months—1, H. R. Moase; 2, Geo. Crockett; 3, S. C. Stewart.

Breeding Sow with litter—1, Geo. Crockett; 2, G. W. Wood; 3, Calvin Wood.

Sweepstake boar—1, H. R. Moase.

Sweepstake sow—1, Geo. Crockett.

Pen—1, Geo. Crockett.

Canadian Bank of Commerce for Sweepstake Yorkshire Sow—Bronze Medal—Geo. Crockett.

Chester Whites

Boar, over 2 years—1, A. E. Ings; 2, Wallace Wood.

Boar, 1 year old—1, A. E. Ings.

Boar over 6 months and under 1 yr. —1, Wallace Stead; 2, A. H. Boswall.

Boar, under 6 months—1, A. E. Ings; 2, Wallace Stead; 3, H. R. Moase; 4, A. H. Boswall.

Sow, 2 years old—1, Wallace Stead; 2, A. E. Ings.

Sow, 1 year old—1, A. E. Ings; 2, Wallace Stead; 3, Wallace Wood; 4, Stephen Holroyd.

Sow, over 6 months and under 1 yr. —1, A. H. Boswall.

Sow under 6 months—1, Stephen Holroyd; 2, A. E. Ings; 3, Arnest Ings; 4, A. H. Boswall.

Pair of pigs 3 months old and under 6 months—1, A. E. Ings; 2, Stephen Holroyd; 3, A. H. Boswall.

Breeding Sow with litter—1, A. E. Ings; 2, Wallace Wood; 3, Stephen Holroyd.

Sweepstakes Boar—1, A. E. Ings.

Sweepstakes Sow—1, Wallace Stead.

Pen—1, A. E. Ings.

Canadian Bankers Competition for Boys and Girls under 17 yrs.

Two Pis, pure bred or grade, fed by same—1, Howard W. Roper; 2, Ella Ings; 3, Sydney Stead.

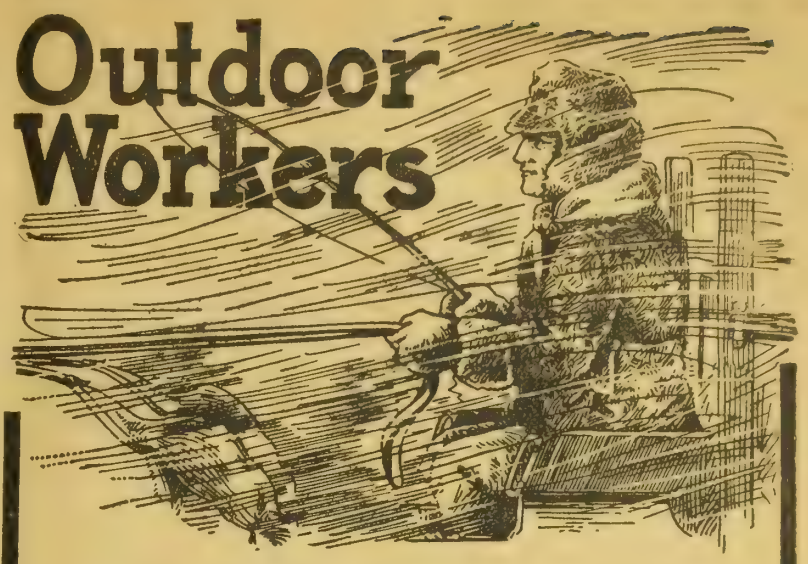
Any Other Breed

Boar, 2 years old—1, David Reid & Son.

Boar, under 6 months—1, David Reid & Son; 2, H. R. Moase.

Sow, 2 years old—1, David Reid & Son.

Sow, under 6 months—1, 2 and 4—David Reid & Son; 3, H. R. Moase.



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ATLANTIC UNDERWEAR

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Pair of Pigs—1, H. R. Moase; 2 and 3, David Reid & Son.

Sweepstakes Boar—H. R. Moase.

Sweepstakes Sow—David Reid & Son.

Pen—David Reid & Son.

Export Bacon Hogs

Best pen of Pure Bred Hogs—1, Geo. Crockett; 2 and 3, H. R. Moase; 4, A. E. Ings; 5, S C. Stewart.

Best pen of hogs, Crosses and Grades—1, S. C. Stewart.

Messrs. Davies & Fraser prizes for best finished hogs—1, Peter Brodie; 2, David Reid & Son; 3, A. E. Ings; 4, Geo. Crockett; 6, Roy Moase.

POULTRY

Fowls

Anconas Mottled Cock—1, E. J. Vessey, York; 2, W. H. D. Vessey, York.

Anconas Mottled Hen—1, E. J. Vessey; 2, W. H. D. Vessey.

Bantam, Japanese Cock—1, A. F. Houston, Charlottetown.

Bantam, Japanese Hen—1, A. F. Houston.

Bantam, Cockin Cock—1, A. F. Houston.

Bantam, Cochin Hen—1, A. F. Houston.

Bantam, Seabright Cock—1, A. F. Houston.

Bantam, Seabright Hen—1, A. F. Houston.

Bantam, Rosecomb Cock—1, A. F. Houston.

(Continued on page 26)

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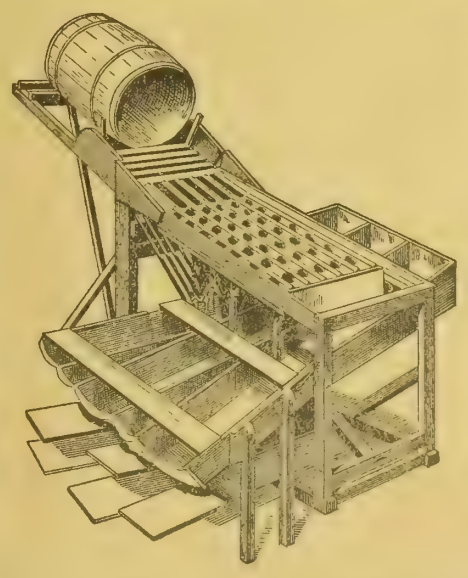

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DAIRYING.

FEEDING OF MILCH COWS

The feeding of the milch cow should start when she is dry in order properly to prepare her for the milking period. The thin cow at calving is in poor condition to make milk profitably, nor can she produce the most rugged and healthy calf. Allow the cow four to ten weeks dry period before freshening. A first-class pasture, with or without grain, according to the needs of the cow, is the best conditioner for the dry cow in preparation for the milking period. A pound of grain during the dry period is worth at least three pounds of grain fed after the cow has freshened. On poor pastures feed the dry cow green feed or silage and a grain ration composed of equal parts of any of the two following meals, bran, ground oats ,ground barley, ground screenings. To the thin dry cow feed four to seven pounds daily, even though on good pasture. To the dry cow in good flesh and on good pasture no grain whatever is necessary.

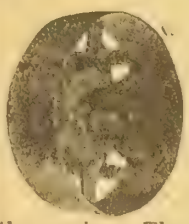
Feeding at Calving.—Special care is required in the feeding of the cow at freshening, the procedure varying with the individuality of the animal. Be sure that the condition of the bowels is normal. Constipation at this time is apt to induce such troubles as milk fever, while the opposite condition is tepid drink containing a handful of linseed meal. Allow to rest quietly for twelve hours, after which give a warm bran mash with two bran mashes on the second day. Feed indoors for three days, giving a limited supply of green feed or good hay. Draw a little milk three to four times daily for the first three days. Do not milk dry until after the third day, as such procedure freuently induees milk fever. On the fourth day the cow may start on pasture but it is usually advisable to supply a meal ration consisting of equal parts bran and oats in addition thereto. Unless pastures are good, this grain ration should be continued and even strengthened with some more concentrated meal.

Feeding the Fresh Cow.—The cow weighing 1,000 pounds requires the equivalent of 40 pounds of mixed pasture grass, or 10 pounds each of clover, hay and oat straw for the maintenance of her body alone. To this must be added the food to supply energy and the ingredients to manufacture milk, hence meagre feeding of milch cows means light returns, and liberal feeding is always followed by heavy production and a lawer cost per gallon.

As a rule, milk produced during the summer months with an abundance of pasture is the cheapest production during the year, hence the proper care of pasture is most essential. Cattle should not be allowed to graze too early or so closely that the pasture is unable to withstand drought. With a shortage of permanent pasture, spring or fall sawn grains may be used as a supplement. Fall rye may be grazed both in the fall and spring. Such annual pastures as heavily seeded oats and barley or a mixture of oats, barley and wheat, will make excellent summer pasture. With present labor shortage it is probable that these annual pasture crops are more economical than the growing of soiling crops to be cut and hauled to the stock on pasture or in stables. However, such soiling crops as peas and oats seeded at different dates, second cut clover, corn or fall turnips fed with tops pulled, provide an excellent substitute for pasture. Silage made from corn or peos and oats, if available, is both a superior and a cheaper substitute for pasture.

Whatever the roughage may be, the majority of successful dairymen, as a rule, feed a limited grain ration during the summer months. A mixture of equal parts bran and oats or with the addition of 10 per cent. ground peas or some similar concentrated meal will give excellent results.—E. S. Archibald, Dominion Animal Husbandman.

BERNARD FRICTION PULLEY



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WATER AND SHADE INCREASE PROFITS OF DAIRY HERD

On dairy farms, where milk production is made a special business, there is seldom a want of attention to the matter of plenty of good water and shade for the cows during the hot and dry season. It is the ordinary farmer, who keeps cows only as a side line to general farming who is often negligent in this matter.

Cows giving milk during the hot weather, not only require an abundance of water, but they require it often. As the milk is composed largely of water, and its secretion goes on continually, there should always be plenty of water on hand, that the animal can get a supply. The low yield of milk in the dry season is usually attributed to the dired-up and partly scorched pasture, but we are certain that this is not so much the cause as the scant supply of water. In most cases a gain of 10 to 15 per cent. would easily be obtained, if the cows had free access toplenty of water.

It is surely very poor practice to water the milk cows only at milking time, mornings and evenings. It is also a cruel pratice, and it seems to us that such cases should have the attention of the humane officer. We have known animals not having enough water to become "breachy" beiny driven to this in attempting to search for water.

The farm having a small stream fed by a never-failing spring is nearly ideal for keeping milch cows. Many farms have small streams, but they become dry during droughts. In such cases there should by all means be a large tank in the barn yard to which the cows can have access at all times. The farmer is not upt-o-date who does not have either a windmill or gasoline engine to pump water for his stock. Those who would give the proper attention to the cows will see to it that the gate to the barnyard is always open at al times for them to enter. It is really surprising to notice how often the cows will come from the pasture during the day to drink, when they know they can get water.

tI sould be kept in mind that the quality of the water is just as important as quantity. We know of farms where the only supply furnished is fro ma small pond filled by the surface drainage after rains. The water stands until it is filled with myriads of insects, and becomes covered with a green scum. The cows wade about the pond ,or stand in it to fight the flies, stirring up the dirt from the bottom, rendering the water totally unfit for them to drink. Yet they will drink it because they can get no other.

Besides plenty of water for the cows, shade trees are an excellent thing in a pasture field. If there are no shade trees it is advisable to keep the cows in the stable from 10 o'clock until 3, giving them water before putting them in and also when turning them out. They will then feed with a good appetite. An open shed in the barn yard is better than the stable, and even at the present high price of lumber it would pay every farmer to build one.

Beyond the Experimental Stage

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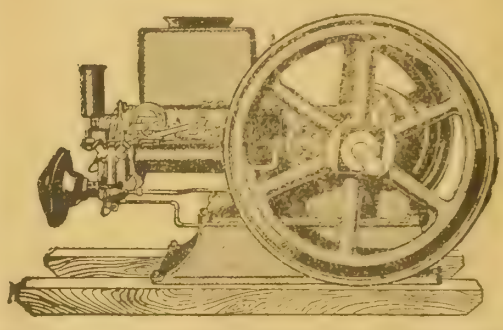

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CAUSES OF STREAKS IN BUTTER

A reader asks as to the cause of streaks appearing in butter. For his information, as well as for others who may experience the same trouble, we publish here an article on the subject by a well-known dairy authority:

It may safely be stated that streaked butter is first of all due to imperfect distribution of the salt. Salt has the effect of deepening the color of butter and when it is applied unevenly the result is streaks of lighter and darker shades atlernating with more or less regularity unless they are removed by working. Of course, it is practically impossible by the ordinary methods of salting butter on the farm to apply the salt evenly and the distribution must be left to the butter worker. If the working is thoroughly done the streaks will not appear in the finished product. But since overworking is one of the things which the amateur buttermaker is cautioned about, it sometimes happens that the color is not even.

In case one should doubt that the streaks in butter is due to the salting, a very simple test will be convincing. Let a pound of butter be taken from the churn, washed as usual and set aside for a few hours with an ounce of salt applied carelessly and not worked in, or make a ash in the surface of the butter with the ladle and throw in some salt. Where the salt is thick the color will be several shades deeper than where there is no salt. Brine salting practically does away with this trouble, because the salt is applied in solution. This method, however, is not entirely satisfactory, since it is somewhat difficult to obtain the desired degree of saltiness.

If the following suggestions for churning, salting and working are carefully followed there will be no troubel wtih streaks in butter. Churn

well-ripened cream at a temperature which will bring it to the draining point in granules the size of grains of wheat or rice. When that condition is reached, draw off the buttermilk and rinse the butter in plenty of water that is at about the same temperature as the buttermilk when drawn. Agitate gently so as to mass the granules and drain. Apply water at about the same temperature a seccnd time, again agitate, preferably by revolving the churn a few times and drain thoroughly. Have the salt sifted and weighed or measured. The latter is more convenient and quite accurate for all practical purposes since an ordinary half-pint measuring cup holds approximately one-half pound. One ounce of salt to the pound of butter is about right. Sift half the salt evenly over the surface of the butter, revolve the churn so as to expose teh bottom of the butter and sift the remainder of the salt over the granules thus brought to view. Only a fine grade of dairy salt should be used.

Now put the cover on the churn and revolve the churn slowly for a dozen times. Then remove the cover, drain off the brine and if the butter is gathered in large lumps break them up with a ladle or wooden paddle. Again close and revolve the churn as before, allowing the butter to drop solidly from end to end as it revolves. After a few minutes of this the butter is ready for the final pressing to eliminate the excess brine. This may be done with a butter-worker or in an ordinary wooden bowl with an ordinary ladle. In either case very little more work will be required and no subsequent handling necessary whatever.

To summarize, remember that streaks in butter are caused by uneven distribution o the salt. Working the butter first instance. Overworking spoils the grain, while insufficient working leaves too much brine and possible streaks. A thin wafer of perfectly worked butter should not break when folded almost over upon itself and should have a distinctly granular appearance when a bit of it is broken apart. Artificial coloring has nothing to do with streaks in butter, as some people suppose.

PRESERVING BUTTER FOR WINTER

It was the practice of our grandmothers to preserve the butter made in summer for winter use, packing it into jars and setting the jars in as cool a place as they had,—the cellar or the old fashioned milk house. Packed butter could be sold in the stores fifty years ago as readily as any other kind. Some people seemed to have a hankering for old butter in those days just as some have a hankering for old cheese in these. Butter put into crocks in June and left in the milk house till December or February had a "punch" that fresh butter altogether lacked. It had a taste and smell not distasteful to the butter consumer of those times who naturally expected to find butter a little frowsy towards the end of the winter.

It would not be possible to sell butter of this kind in the market now. It is possible, however, to preserve butter in fairly good condition, and those who are willing to use butter that is not first class may find it of advantage to use this plan. Butter that is to be kept for several months should be made from cream that has not been kept more than tw oor three days before churning. The quicker it is churned the better. The churning should be stopped when the butter is in small granules so that as much butter-milk as possible can be worked out. It should then be worked and salted and packed in a glazed crock or jar. A layer of about one inch of brine as strong as can be made should be kept over the butter. The jar should be kept cool in the basement or other place that is fairly cool. Special attention should be given to keeping the butter entirely away from light and air, because light and air cause butter to spoil rapidly.

KILLING LICE ON STOCK

External parasites are extremely troublesome on livestock. They do most injury when the animals are low in condition, for strong stock can resist them better than the weak ones.

The best way to get rid of body lice is to kill them. This can easily be done by applying contact dips or washes to the portions covered by the insects. The drip from pumping engines may be rubbed over the animals when placed in a small enclosure. A scrub brush or old broom with the end cut off to make a stiff stub makes a good method of applying the oil. If applied on top of the body and the stock turned out in the sun the oil will spread much better and have greater penetrating power. Any kind of oil which comes in contact with the verim will kill them.

One of the best mixtures for killing body lice is the kerosene emulsion. This is made by cutting one pound of hard soap into fine flakes and then dissolving it in a gallon of hot water. This mixture should be added to one gallon of crude petroleum and stirred well. tI may further be diluted by three times its quantity of water or six gallons. Such a quantity will make a good stock solution and can be applied by spray, brush, cloth, or a dipping vat. Keep the dip up well on the higher parts and turn the stock out in the sun so that a thin film of the solution will cover the entire animal. It is always necessary to repeat the dose from six to ten days depending on the season. During hot weather a short time between spraying is bst. Some people claim that lice may be killed by simply feeding the animals well. This is no cure and it is a ver yexpensive method at the present high prices of feed.—R. H. Williams, Animal Husbandman.

ROPY MILK CAUSED BY GERM

Of late not a few letters have been received by the Veterinary Editor regarding the cause and treatment of ropy milk.

Organisms live in stagnant water and infest pastures. On account of the heavy rainfall, this condition is more prevalent this year than usual. The ropy condition in the milk appears in about 18 or 24 hours.

Ropy milk is caused by an organism that is often found in stagnant water, according to the dairy experts at the Iowa State college. Cows in pastures with low ground that has overflowed or flooded lately will wade in such water, and the organisms will adhere to the skin and hairs, and fall into the pail at milking time.

If it is possible these pools and low places should be fenced off. It is also suggested that the water around the drinking tank be dried up and the barns cleaned and whitewashed. Before milking, the cow's side and udder should be cleaned by using clean water and soap, if needed—a little boric acid or common salt, dissolved in the water, will help.

Ropy milk may be caused in some instances by utensils that have not been properly cleaned and sunned or sterilized. Care should be taken to scald all milk pans and pails after they have been used. It is well to pasteurize the milk soon after it is drawn, if there has been trouble with ropy milk. This is done by heating to a temperature og 145 degrees F for 25 minutes. The milk may then be used with perfect safety.—Dr. A. M. Morgan.

SOUR VS. SWEET CREAM TEST

Does cream test more when it is sour than when it is sweet? This question has been asked so many times, especially during the past two years, and it no doubt has caused much trouble. Many have been led to believe that by holding their cream until it was real sour they would be given a higher test. This would be possible under one condition and that is, if a can of cream was allowed to stand for a long time at a rather high temperature, theer would be enough moisture evaporate to increase the per cent of fat slightly, but this would be very slight and in that length of time the cream would no longer be fit for a food. Still this would bring no higher price for the product as the extra per cent of fat would only make up for the amount of moisture which has evaporated.—E. O. Olsen, in Dairy Record.

UNIVERSALITY OF MILK

Whether as milk—raw, malted, powdered, or condensed; whether as cream—plain, whipped, or iced; whether as butter, alone, or in combination with other oils; whether as cheese in its many brands and varieties; whether as buttermilk, as kumiss, or as confection, the call for dairy products is one of the most insistent, universal, and exacting of all the demands of trade. And in fact a necessity, a standard food, a common luxury, is the milk of the dairy cow.—Eugene Davenport.

LIME WATER FOR SEPARATOR

A writer in "Successful Farming," states that by the use of lime, it is possible to leave a separator unwashed after the evening milking, and keep it in good condition until next morning. As soon as the separator is done, take the machine apart, rinse it well in cold water, and then submerge all the parts in a thin solution of milk of lime. While this plan is not as good as cleaning after each skimming, yet it will serve the purpose occasionally. The milk of lime can be prepared by taking one-half pound of slaked lime and mixing with three or four gallons of water.

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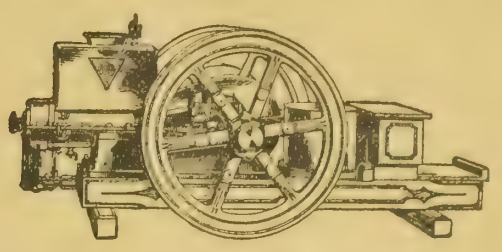

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BENJAMIN DORMAN 147 West 24th Street NEW YORK CITY

LIVE STOCK.

ESTIMATING PIG FFED

Q.—What will be the likely amount of bran and shorts I will need for two sows and 19 pigs. I am going to use a self-feeder and am going to seed one acre to clover and another to rape. Should the sorts and bran be mixed or fed separately? If mixed in what proportion?

A.—The following table gives the average amount of grain mixture eaten by average growing pigs when receiving a fullg rain ration:—

Age	Amt. of Grain
2-3 months	2 lbs. per day
3-4 months	3 lbs. per day
4-5 months	4 lbs. per day
5-6 months	5 lbs. per day
6-7 months	6 lbs. per day

Ordinarily brood sows require very little grain feeding after the litter is weaned, providing good pastur is supplied. However, when brood sows are maintained on grain feed alone, they wil lrequire at least two pounds of mixed grain per day for each 100 pounds live weight; that is, a' sow weighing 250 pounds live weight would require 5 pounds of grain mixture per day.

Two sows averaging 250 pounds live weight would consume between June 1 and Octobed 1 approximately 1,200 pounds of mixed grain. This amount however, may be reduced very considerably by the use of pasture. Nineteen pigs farrowed April 1 and weaned June 1 would consume, acocrding to the above table:—

June	1,140 lbs. grain
July	1,767 lbs. grain
August	2,356 lbs. grain
September	2,945 lbs. grain
Total eaten by young pigs	8,208 lbs. grain
Total eaten by sows	1,200 lbs. grain
	9,408 lbs. grain

I do not consider bran or shorts either mixed or fed separately a good grain for growing pigs. Bran is too coarse and bulky, while shorts fed alone is somewhat pasty. These two feeds when mixed furnishes little variety, but if these are the only two feeds tavailable, I would suggest that they be mixed in the proportion of three of shorts to one of bran.—G. W. Wood, Prof. of Animal Husbandry, Manitoba Agricultural College.

KEEP BULL IN GOOD CONDITION

Sentenced to solitary confinement and often without room to turn around is the fate of too many dairy herd bulls. Month after month some bulls are cooped up in stalls where fresh air and sunshine are shut out like alien enemies. True, many bulls don't deserve a living at all, and should not be allowed to eat expensive feed while our armies need beef.

A number of farmers are reinforcing their herds with young bulls from high producing dairy herds for the first time, this year. It is often with a smaller investment that a farmer can secure a pure bred bull calf which, in a few months, is ready for service. When he is six months old, the bull should be separated from the heifers. At ten or 11 months of age, most bulls are ready for light service. But, to be on the safe side, it is not advisable to breed a bull to more than six cows before he is a year old.

A ring is usually placed in the bull's nose at this time. Copper rings are preferred to gun metal, since copper is not so strong and would break before tearing out of the nose.

To keep the bull in good condition, successful dairymen recommend plenty of exercise. A box stall 10 by 12 feet and connected with a small yard fenced with heavy timber makes an appropriate place. Handling can be greatly reduced if a breeding pen is built off of one corner of the yard, and with a gate arranged so that when the pen is open the yard is closed. In this way the most vicious bulls are safely kept.

A well-fed bull develops greater size than an underfed one. For rapid growth, bull calves are fed somewhat heavier than heifers, and are allowed a liberal protein ration.

SMUT OF BARLEY POISONS THE CATTLE

In view of the fact that annual pasture mixtures are now quite commonly used and that barley forms a part of many of these mixtures it might be well to sound a note of warning regrading smut in this feed. In some fields sumt of barley is very prevalent this year and if the barley is headed out there is danger of smut poisoning in the cattle. The symptoms of the disease are rather vague, cattle may scour, become weak on their legs, and finally go down with what appears to be paralysis, death ensuing very suddenly from spasms of the pharnyx and smothering. The poison affects the nervous system and the heart as well. Cattle go down ond cannot rise Evidently the smut is more dangerous with cows about to calve or immediately fololwing calving. Anyone having cows on annual pasture containing barley heading out and in which there is considerable smut should taake tehm off to avoid danger of loss. There is little danger where the pasture is cropped off to cuh an extent that few or no heads appear. After a heavy rain which would wash all the smut away so that the leaves of the grain were free from it cattle could be returned to the pasture in safety.

CARE OF THE EWES AFTER WEANING

In order to avoid udder trouble it is necessary to keep a close watch of the ewes for a few days after they are separated from the lambs. Not a few cases of defective udders can be traced to the want of a little care in this respect. Milk out just enough to keep the udder soft the day after the lambs have been weaned. After two days time they are again milked out. Some ewes do not need any more attention after the second milking. Such ewes may be marked to indicate that they are dry. Three more days should elapse before the next milking is done and this method followed until it is certain the entire flock is safe. In conjunction with the method outlined above the ewes should be separated some distance from the lambs and be on scant pastures until all are perfectly dry. This is a good time to go over the flock and cull out all undesirable members. Non-producers and those with broken mouths and poor udders should not be retained. A good deal of the success of the subsequent lamb crop will depend upon the treatment the ewes receive from time of weaning until after they are bred. They should have good pastures and be given an opportunity of putting on flesh. This is what is commonly called "flushing." Nothing is better for this purpose than rape pasture. It is usually from six weeks to two months from date of sowing that rape is ready for pasture. If rape pasture is not available, new seeding or second crop of clover will serve fairly well. Stock should not be turned on rape or fresh clover for the first time when the leaves are wet from rain or even dew, in order to avoid trouble from bloating.—J. P. Sackville, B. S. A., O. A. C., Guelph.

FOUL FOOT IN CATTLE

Soreness of the foot in cattle, caused by a crack comingbetween the toes, is commonly known as "fouls." The infection which causes tahe disease becomes localized in the cleft between the toes and sets up an inflammation which is at first superficial, but has a tendency to burrow under the walls of the foot, causing very severe lameness and sometimes leading to the separation of the horny foot from the sensitive parts beneath. When the condition is first noticed the treatment is comparatively easy and consists in cleaning out the affected area and applying some antiseptic. Some cases in the early stages will yield to the repeated applications of turpentine. Tincture of iodine is more effective, and in those cases which are somewhat difficult to heal, a mixture of powdered copper sulphate and pine tar can be smeared on a small piece of cloth and pressed into the diseased area and then held in place by a mandage passing between the toes and around the foot. It might be advisable to soak this animal's foot in a warm 2 per cent. solution of creolin. The treatment should be repeated daily until the parts have healed.

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THE PURE BRED RAM VERSUS THE SCRUB

It is a sound and well established principle in live stock breeding, that improvement must and can only come throuhg the use of the pure bred sire. Unfortunately this principle is either not generally known or else it is ignored and discredited. As an American Live Stock Publication aptly puts it when discussing a pure bred bull, "It is a bully good investment." The same applies even more forcibly to the pure bred ram as the following experimental evidence fully bears out.

At the University of Missouri Agricultural College is was decided to make a test of the relative merits of a pure bred mutton ram and a scrub ram when used on range ewes. Two lots of 17 range ewes identically alike were used in the experiment with the following striking results.

(1) The lambs from the pure-bred mutton ram at 3 months of age, weighed 3½ lbs. more on the average than did those sired by the scrub ram at 4 months of age.

(2) The lambs from the mutton sire sold at $7.35 per hundred—those from the scrub sire sold for $4.50 per hundred lbs.

(3) The quality of the wool of the offsprings from the pure bred sire was noticeably better than that from the stock sired by the scrub ram.

Theoretical Explanation Accounting For the Above Results.

Davenport, one of our leading authorities on breeding problems makes the statement, "Its the concentrated blood of the pure bred that prevails over the dilute blood of the scrub." This statement answers our question. The pure bred mutton ram was bred along mutton lines for generations. As a consequence this characteristic was well fixed or established in his blood. Naturally we would expect that his blood, when mingled with that of a range ewe of uncertain breeding, would predominate. This was the case his offspring grew faster, hence the reason why at 3 months they weighed more than those from the scrub at 4 months, also when put on the market, being much more typical mutton lambs they demanded the highest price per hundred pounds.

Why such poor results from the scrub? The scrub was an animal of very uncertain breeding, likewise the range ewes he was used on. On both sids the blood was dilute, that is to say the characters for any particular thing were not fixed. The result—an offspring without any definite characteristic e. g., lacking ability to make mutton fast, or lacking mutton conformation. Consequently the poor gains and the low prices obtained in the experiment outlined above.

A Business Proposition

There are pure breds and pure breds,, some good, some bad. Such striking results were secured in the above experiment due to the fact that a real pure-bred was used. If the $25.00 ram is good the $50.00 ram is better. Why? because he must be better bred and be a better individual, otherwise he would not command the better price. Such being the case he is more liable to impress his characteristics on his offspring. eHnce it becomes a business proposition to select the best ram that the individual can afford.

The casual onlooker at a livestock exhibit often disputes a judges placing of the stock. The judge made his placing keeping breed type in mind. Realizing that trueness to type means purity of blood and also concentration of blood. The onlooker considered "The biggest was the best." In selecting rams to head the flock this idea of type should be kept paramount. "Watch the type" then look to the cosntitutional vigor, size and, if possible, the history of the ancestry. If not able to get this then look at the other stock sired by the ram that sired he ram under consideration. Are they uniformly typical or is there different types in the flock? This means the old flock ram was not prepotent, i. e. not able to impress his characters on his offspring and probably his rams will not be able to either. In selecting the ram try to combine type, size and constitution.

The pure bred ram will prove just as "bully" an investment as the pure bred bull. If the size of the flock does not seem to warrant the expenditure of the money necessary to purchase one, then combine with a neighbor. In any case get the ram.—Thomas Hetherington.

FARMERS AND BREEDERS

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OILING HOGS FOR LICE

I have had a good deal of experience in oiling hogs and consider that good oil properly applied comes about as near being a panacea for the ailments of the swine family as anything that may be used. It is of much importance that the skin and hair of the hog be kept in a healthy condition, and there is nothing I know of that will do this as effectively as good oil. In those cases where the skin is not in a healthy condition, the oil has a curative effect, and any lice or vermin preying on the animals are readily destroyed by it.

There are various ways for applying the oil, and the one which requires the least work on the part of the owner is the logical one to use. Some farmers who have a hog wallow simply pour a quantity of the oil on the surface of the water and depend on the scum of oil on top of the water coming in contact with the skin of the hogs as they wallow in the wallow. I do not like this method because too much oil is wasted and the hog is never oiled sufficiently to do him much good. Others apply the oil with a sprinkling pot, a spray pump, a brush or a broom, and I would rather apply the oil by one of these methods than not use it at all, but it is certainly no pleasant task to oil the hogs by hand, and there is always more or less waste of oil, besides the job is not usually done as often as it ought to be.

My hogs oil themselves by means of one of the patented hog oilers to be found on the market. The oiler consists of a horizontal iron roller, the bottom of which is submerged in a small reservoir of the oil. As the hog rubs against this roller there seems to be some kind of an inborn habit that causes him to revolve it in such a way that the oil coated surface of the roller rolls up against his skin anad deposits oil on that part of the skin in contact with the roller.

The oiler requires no attention except to keep oil in it, and there is no waste of oil. The oiler is so constructed that both large and small hogs can use it, and I know both find enjoyment in doing so. The hog is a great conserver of energy and he will not do anything that does not make him feeel more comfortable. The oiler can be set pu anywhere or moved from place to place, an dis ready for work at any time of the year. Whether one keeps few or many hogs he will find an oiler a good investment.

If, however, one does not buy an oiler, he should make some kind of an arrangement to oil his hogs at the minimum of trouble. This may be done by setting a post firmly in the ground and wrapping it securely with heavy strong burlap which is kept saturated with oil from an old paoil or vessel of some kind fastened on top of the post. The burlap extends into this vessel and draws ou toil on the principle of a lamp wick.

The kind of oil to use is a matter to be carefully considered. Ordinary crude oil is the cheapest and is used by some farmers, but there are some objections to its use. In hot weather it may burn and crack the skin for the same reason that kerosene does this, as the kerosene has not yet been entirely distilled out of the crude oil. A neighbor of mine who used crude oil in his oilers, said that his hogs licked so much of the oil that it affected some of them in such a way as to cause them to act crazy. I am of the opinion that the gasoline in the oil intoxicated them.

Another neighbor said that during a cold day in the winter he applied crude oil by hand to seven of his hogs and five of them diedly shortly afterward. The local veterinarian informed him that too free application of the oil in cold weather produced spinal congestion. The kind of oil I use is common lubricating oil. It has the same qualities of killing vermin and disease germs that the crude oil has, and there is no danger in using it at any time of the year.

Hogs should be kept so they are able to oil themselves as required. It is little trouble to make a simple oiler at home which will do the trick. Hogs free from lice thrive much better than lousey ones. If you doubt it, try oiling them and see.—By W. H. Underwood.

STARTING THE FARM FLOCK RIGHT

The very first problem of the beginner is to get good foundation stock. If he starts with unthrifty ewes, improperly bred for producing lambs and wool, he gets off on the wrong foot and he will pay a dear price for getting onto the right one. In a fit of discouragement he is likely to close out and "shut the door" against the sheep business. His experience will be no encouragement to those of his neighbors who may be thinking of starting flocks. If the beginner cannot find good ones now, he would better wait until they can be found, rather than start with the undesirable kind. Fortunately, however, it is not hard to get good ewes at reasonable prices this year, several factors combining to make prospects excellent for buying good ewes worth the money.

Desirable breeding ewes should possess certain fundamental characteristics. They should be:

(a) Well grown, healthy and spirited;
(b) Sound in mouth and milking organs;
(c) From one to four years old;
(d) Covered with dense coats of marketable wool;
(e) Uniform in size and breeding;
(f) Straight in body lines and showing capacity for feed.

In going about the buying of sheep, much the same precautions should be taken as apply in the purchase of any kind of breeding live stock. The health of the animals should be one of the first considerations. Good health in a sheep is indicated by lively, energetic movements; by a bright, clean skin, deep pink in color except in occasional specimens of the dark-faced breeds; and by bright eyes with plenty of red blood showing in the veins of the whites of the eye-balls. Pronounced emaciation, hard coughing, pale skin, dry harsh wool, and chronic scouring are indications of poor health. Ewes may eb thin because they have been suckling lambs and have not had enough feed. It is well to buy such ewes if they are otherwise desirable, but unthrifty ewes should not be purchased, for they may be infested with internal parasites which are hard to eradicate and permanently injure the health of the flock.

The teeth should be carefully inspected, especially if the ewes are over four years old. Even though the front teeth be intact some of the molars may be missing, or, worse still, they may be decaying and forming poisonous pus, the absorption of which may later cause the death of the animal.

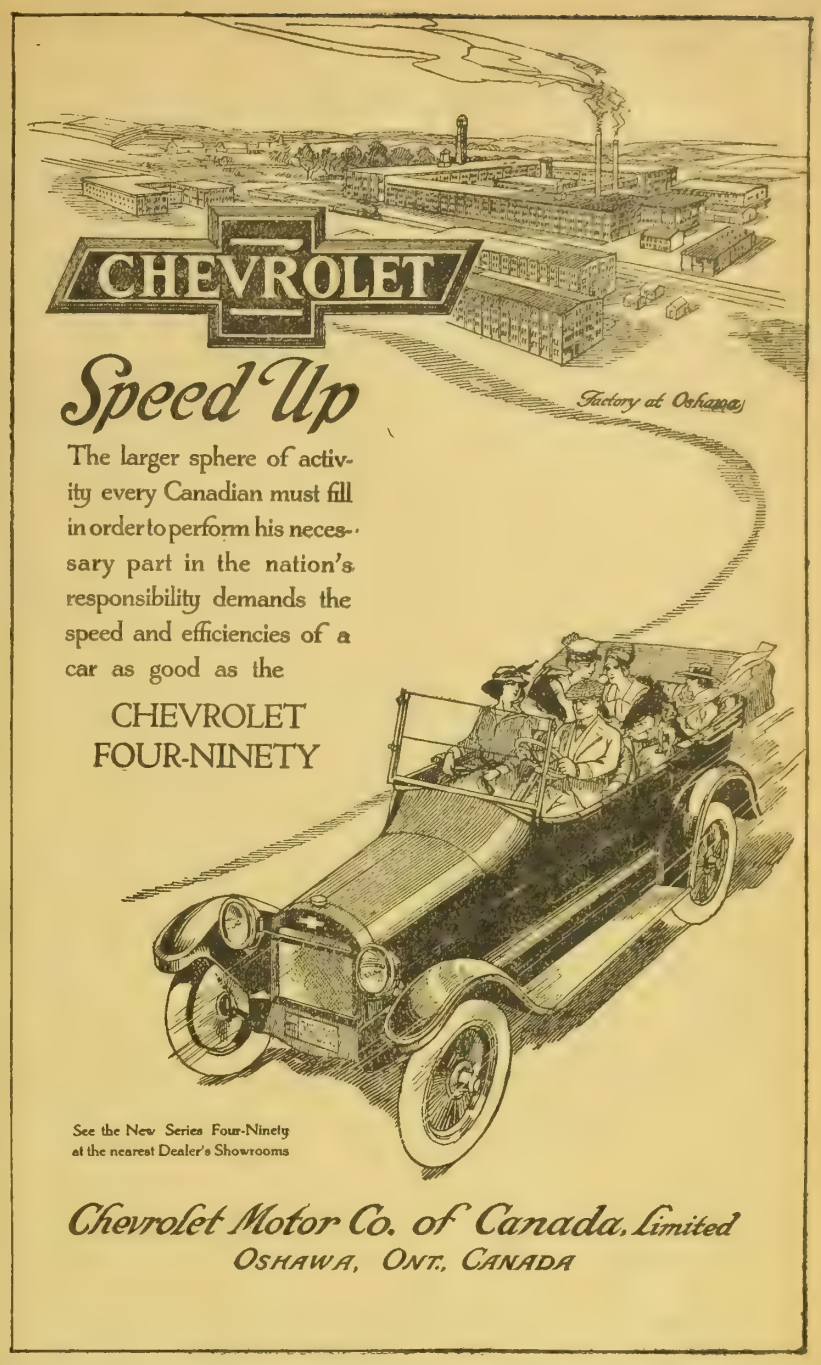
The ewe's udder should be soft and pliable; the teats intact and free from hard cores. Sometimes shearers, accidentally or otherwise, cut off the ends of the teats. In healing, the milk channel is usually closed and the teat becomes functionless.

With respect to age, the ideal ewe for the beginner is the two or three-year-old. Ewes of this age are in their prime for producing both lambs and wool. Having raised one or two crops of lambs they have less trouble in delivering their lambs and they are better mothers than young ewes. Four and five-year-old ewes may be profitable for two or three years, but before a purchase is made they should be carefully inspected by a competent judge. As a whole, six-year-old ewes are on the decline in wool production and they are good for at most only two crops of lambs. Yearling ewes do not equal two and three-year-olds in the first year, but they are a better investment than old ewes because they are incerasing in their producing powers. As a practice, the breeding of ewe lambs is bad flock husbandry. They are too young to be good mothers and their development is likely to be arrested. It may pay now and then to breed well-grown ewe lambs born in February or March so that they will lamb in April or May, but they should receive the best of care during the pregnant and suckling periods.

The wool is a very important factor which too often is partly overlooked in selecting breeding ewes. A ewe yielding less than eight pounds should be discarded unless she is an exceptional producer of lambs. To get a fleece of this weight the body must be densely covered over with wool. Too often the purchaser does not see to it that the belly is well covered and that the wool extends to the knees and hocks, and also over the forehead and cheeks. We know of a case where the extension of wool over the body was overlooked and the ewes selected sheared less than three pounds each. The fleece should be even in quality and for farm flocks should grade from one-fourth blood staple to fine staple. In addition to its commercial value a dense, compact fleece, completely covering the body of the ewe, protects her health by keeping her skin dry and by lessening the effects of sudden changes in temperature. One should attempt to get ewes that are uniform in size and breeding for the sake of the greater value which results from the uniformity of teh lamb and wool crops.

The beginner can learn more about sheep from a small flock than he can from a large one. If he has a flock of twenty-five ewes it is easily possible for him to take note of each relative to her capacity for producing lambs and wool. He develops a conception of the type of ewe that is prolific, motherly, and able to produce enough milk to grow her lambs rapidly. By observing certain individuals from day to day he also becomes familiar with the habits of sheep and learns to know when they are slightly "off" in health. Knowledge gained in this way contributes much to one's ability to handle sheep successfully, for often a little attention will restore a sheep if it is taken in hand in the first stage of its illness, but if it is neglected until it no longer attempts to stay with the flock, the task of treating it is much more difficult.

But the beginner should buy enough sheep to justify giving them adequate attention.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Divide the milking among the family. It takes a long time for one man to milk eight or nine cows, but if three people milk three each, the work is soon finished and agreeable. Children must help a great deal this year, too, and can be taught to do milking quite effectively.

THE HORSE

DRAFT HORSE BREEDING THAT WILL COIN MILLION OF DOLLARS FOR FARMERS

Breeding the best class of heavy draft horse is not getting its due share o fattention in many districts of Canada. "There is no money in horses," is only true in countries that neglect hor esbreeding. If there is no money in rearing the best class of horses, there is certain loss in rearing the common and undersized, and the latter class is the rule with too many farmers. A whole day's touring by car last week in one of the reputed fertile areas of Ontario by the writer, did not reveal one horse of the stamp that would encourage any horse buyer who is alive to the requirements of the time in horse flesh.

The High-Priced Horse

The reason is not far to find how it is that Canadian farmers meantime fail to get a share in the millions of dollars that all the Allied Governments are spending for the motive power as it is found in the best class of draft horse. Not a horse to-day is being bought in Canada, and why? Reports from Britain just now when the local district horse markets are on, are proving that there is a world wide demand for the draft horse. Even for local purposes at city or farm, geldings between the ages of 4 and 5 years are readily being picked up at $1,000 each. For export to Australia and South Africa the demand for breeding animals is also very keen, and some of the finest types and best blood lines are finding their way to these colonies. This is not the result of war conditions, for long before the war the best class of horses were realizing thees high values. If on every farm there were high class horses, then there would be a higher standard of values and keen competition between countries. Without a steady supply of the class of horse wanted there can be no steady demand.

Before a county or district comes out on top in any department of its industry it has to enter the list of competition and have higher ideals of attainment than its rival. Without the article there can be no market, hence the fate of the horse industry as it is witnessed in too many districts in Canada today.

How It's Done

In starting to breed the draft horse on lines that will prove profitable and lasting, the young beginner should seek to gather information from experienced constructive breeders. It is to be regretted that not more of these breeders are to be found in every rural community of Central Canada. A few are found to be doing good work, but they are isolated from lack of interest by the rank and file that surround them. It is unfortunate that the cheaper class of animals are more profitable to importers than better ones. This is due to the penny wise and pound foolish policy of the average horse breeding farmer. An inferior stallion gets more patronage than a good one, if they stand for a few dollars less service fee. The average farmer fails to realize that $5.00 in service fees often means $100 difference in the price of a horse at maturity, and sometimes even more than this sum. A good horse eats no more tha nan inferior one. Too often the good dam is sold, and only the one that won't sell is kept and these are no good even though the best sires are available for them.

The two main factors in making a right start in horse breeding is the quality of the foundation stock and the healthy surroundings given them. Heredity and environment are the two outstanding features that no horse breeder, experienced or beginner, can ever afford to neglect. Of the two, the last is the most important. It is not often recognized as such, or receives the attention that is given to heredity and individual quality. How often it can be noted that a farmer is disappointed at the results of buying high priced animals of accredited good parentage, to improve his stock. The breeding with them may be along correct lines, but feeding and general care has not been along the lines of highest development. Take a pure bred cow, rich in the best blood of several generations, and give her poor feed and treat her c.fspring the same, and the results are well known in dairying as ruinous. Even high class wheat or other improved grain will quickly fall to its original state if planted in poor soil that is badly cultivated.

The work that brings out the best in breeding must be continued by all those who wish to attain similar or higher places in the art. This is particularly necessary in horse breeding, as this species is of a highly strung temperament.

The Basis of Success in Breeding

A sound animal is the basis of a right start; one sound animal is better than a dozen of unsound ones. Unsoundness is carried from one generation to another. In founding a farm stud a common mistake made by the beginner is buying here and there a good mare that particularly takes his fancy. This he does without paying much attention to the line of breeding any of his purchase holds, and if he does the same in the selection of his stallions the results are far from satisfactory. There is a mixture of blood lines that entirely upsets the work that brought the breed to its high level.

Before anyone can succeed in breeding horses or live stock of any kind they must get alive to the methods that expert breeders use to bring the best results. Buying indiscriminately and breeding on the same lines will soon discourage the most ardent enthusiasts. Enthusiasm can only be upheld by intelligence. It is part of the farmer's work that must get more attention in the future; it affects all species of farm animals, whether grade or pure bred. Keep on breeding on lines that bring out uniform animals, and be very careful when introducing any new blood in the line.

There is no haphazard work in producing and rearing the high-class uniform horse that the world's markets demand today. Have a foundation stock of uniform pattern and ancestry and keep to them and their blood lines; mixtures of other lines have a diverse affect on the uniformity and quality of the progeny. There are some animals of fairly good merit that one is tempted to buy on sight, but if their parentage does not measure up to a record of high standing merit then it is better to leave them alone. Especially is this characteristic found amongst stallions. An animal well grown, fat, and in bloom gets the eye, but if these are the only qualities that recommend him leave him alone. Remember that an individual, however good to appearance, has little chance to transmit anything better than what is found in the history of the parents.

The advancement of the horse breeding nidustry does not interfere with any method of farming, dairying, mixed or grain farming; all can undertake the work of horse breeding with advantage. Every farm requires some horses and the marketable horse is the one to breed. Unsaleable horses are a loss, even though they do manage to produce all the motive power on the farm. With suitable foundation stock and with natural conditions of development foun din Canada, the successful production of high class horses lies within the power of every Canadian farmer. The knowledge requisite for carrying it on is easily attained and the opportunity knocks at the door of every farm. To produce the rugged drafty colt that finds a ready asle anywhere, breed with the mares of good type, excellent in set of legs, good feet and with parentage of good producers. Have no break in the long continued use of good sires and there will be no breakdown in the horse industry. such as Canada is witnessing today on its otherwise fertile areas.

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HOW HORSES FARE ON FARMS

Horses fare worse on farms than in cities, according to the Boston Work Horse Relief Association. This indictment may apply to Yankee farmers, but we doubt it. The following is a statement contained in a recent "appeal to owners of work horses":

"Beware especially of selling or giving a horse to go on a farm. Farmers in general feed their horses less grain, and take less care of them, than any other horse-owners in the world."

It is probably true that farmers feed less grain and spend less time on their horses than do city owners, but this does not imply poor care, nor indicate that a horse on the farm must endure more hardship than in the city. The fact is that a horse is at his best in good pasture with nothing to do and no grain. That is nature's kind of care and the horse likes it. On the farm he gets lots of it between jobs and in wet weather. Grass is cheaper than grain, and a good roll in the dust is cheaper than a currying.

It is not fair to farmers to characterize this kindness as neglect. Even the stalkfield fare that many horses get just now does not offer a fraction of the hardship that city horses undergo at this season. With shoes off and on secure footing farm horses wander about the stalkfields as they please, picking out the best bites of forage. To be sure it is not very nourishing but it furnishes heat and a grown horse lives on it comfortably in an ordinary winter. The city horse must do the best he can to stay on his feet hauling heavy loads over icy streets. He must have grain and blankets, and yet he does not fatten any faster than the country horse. If the blanket is not thrown on promptly when the city horse stops he shivers with the cold, but the long hair of the stalkfield rover protects effectually from winter temperatures.

And yet farmers could profitably give their horses better care than is sometimes offered at this season. Stalkfield picking gets steadily poorer as the winter advances. A little grain or hay is needed to pad out the bill of fare and to keep horses from losing flesh. It does not take much extra feed now to show plainly in the condition of horses by spring. At that time, when hard work begins horses must carry a fair amount of fat or else they will shrink away rapidly when changed from idleness to activity.

WHY SOME HORSES DO NOT SWEAT

Horses and mules are probably being worked harder and longer hours than ever before. They must receive good attention, especially during this hot weather, if one wishes them to do this hard work and remain in good shape. Often a mule or horse fails to sweat. This may cause considerable trouble. Dr. C. A. Cary, state veterinarian and dean of the Veterinary College at Auburn, gives the following information on the subject:

"Horses, unlike most animals, excrete serum albumen and globulin proteids in the sweat. Why horses thus excrete albumins is unknown, yet this in part explains why horses that sweat very freely become greatly reduced in vitality and strength. Clipping when the hair is long is said to be the only preventive of excessive sweating. In the sweat of the horse there is about five per cent. of ash (salts). When the hair becomes short or the long hair is shed or thrown off the 94 per cent. of water evaporates more rapidly than when the hair is long. Rapid evaporation or evaporation of sweat as fast as it is secreted is called insensible perspiration.

In the summer when large quantities of new hay, new oats in the straw, or uncured hay is fed to horses there appears to be something in these imperfectly cured hays or feeds that stimulates rapid respirations and retards sweating. The rapid respirations may in part be due to the bulky stomach or abdomen pressing on the diaphragm and preventing abdominal breathing. Rapid respirations may be due to over work or exhaustive work.

Retarded or decreased sweating may indirectly stimulate respirations as it always does stimulate the kidneys. When a horse is not well groomed or bathed the salts and proteids collect and close up the openings of the sweat glands. Hence, to prevent the so-called non-seating horse or mule and the associated rapid breathing it becomes necessary to:—

1. Keep the ducts of the sweat glands open by frequent grooming with good brush and bathing in warm weather once a week.

2. Feed hard worked horses less bulky, uncured hay or forage or pasture. The English hay for the long-winded, hardy race horses is cured not less than two and often three or four years before it is fed. Always feed horses not less than three times a day and in small quantities of a balanced ration.

3. Over work, exhaustive work and especially very hard or rapid work in the warm, sultry weather may have a mechanical action on bursting or rupturing the air sacs of the lungs and producing a permanent case of heaves.

MARE REFUSES TO TAKE TO HER COLT

I have a mare that refuses to take her colt. I am feeding the colt cow's milk; what amount can I use and how often should I feed it? T. C.

Young colts can be successfully raised by the hand provided sufficient care and kindness is exercised. It is impossible to specify exact quantities of milk, sugar, etc. to give, because young colts differ so much in capacity and vigor. What would not be sufficient for one might be too much for another. From personal experience the writer has found that a young colt is quite easily taught to drink. It is not advisable to use artificial teat or bottle. Feed it four or five times a day. Make it your last duty at night and first duty in the morning. Your judgment as to quantity wi l be gauged by the general appearance of the colt and especially the state of its bowels. From two to three pints of cow's milk, diluted with warm water, to which a little sugar is added, just as sweet as the average tea drinker insists upon, will be about the correct quantity at each meal for a start. As the colt gets older, increase the quantity as your judgment by observation will lead you. Three times a day of 10 to 12 lbs. of whole milk at each time will generally suffice without the sugar and water. If there is any sign of constipation give two ounces of castor oil occasionally in the milk, as a preventive. When three weeks old, train it to eat a handful of dry crushed oats and linseed meal mixed twice daily. Three parts of oats to one part linseed. Train it to lead so that it can be led to grass. When in the barn, give it green feed, grass and clover, but not alfalfa.

CURING SWEENIED HORSES

A number of letters have been received asking for a cure for sweeny. The general treatment for this disease is to lay the horse off work immediately he becomes sweenied. He should not be worked for several weeks. This gives the muscles of the shoulder a rest and helps them to fill up again. To assist in hastening a cure the muscles of the shoulder should be thoroughly rubbed every day with a good liniment, such as camphorated liniment, which can be obtained at the drug store. Several excellent remedies for the same purpose are advertised in the coulmns of this paper.

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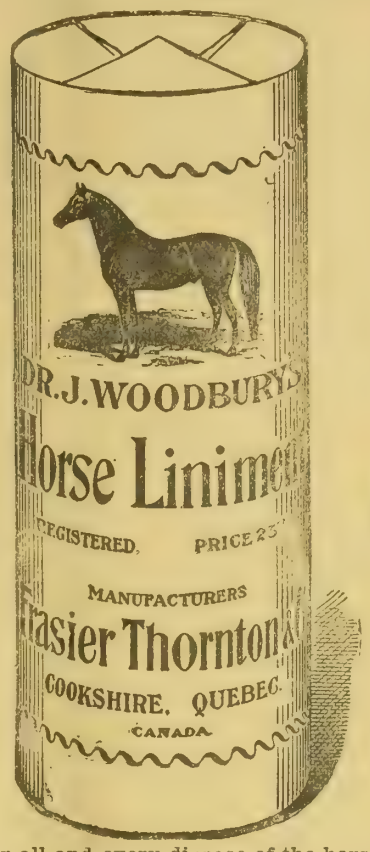

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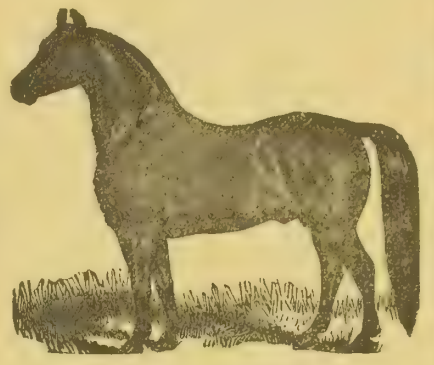

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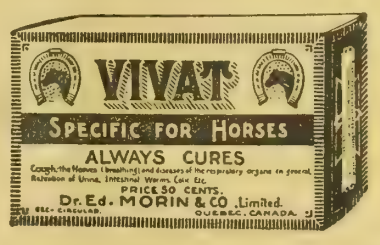

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A 50c box will be sufficient for six days' treatment.

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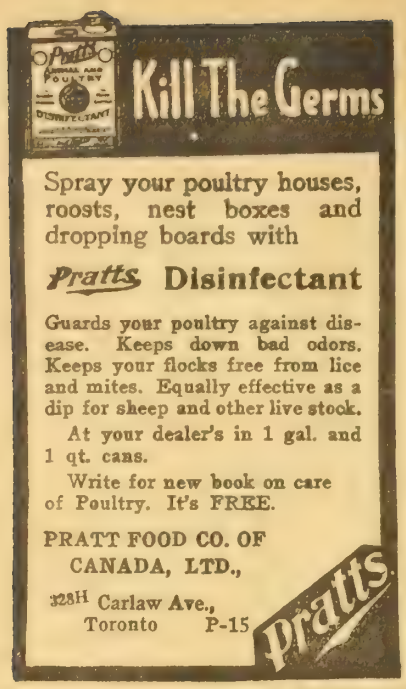
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POULTRY.

JUDGING HENS FOR EGG PRODUCTION

(By W. . GrahamR, B.S.A., Professor of Poultry Husbandry, Ontario Agricultural College

A system has been adopted by the American Association of Instructors and Investigators whereby hens may be judged during the summer months in regard to their laying capacity. This organization, including both Canadian and United States instructors and investigators, constitutes the American branch of the International Association, the British branch of which embraces England, Ireland and Scotland. The system is of special use for culling flocks during July, August and September, more especially as the moulting season is approaching. The system was adopted at a meeting of the Association held at Ithaca in July this year.. Following are the characteristics of a good laying hen and a description of the indications by which she may be distinguished from others as laid down by the Association:

In order to lay well a bird must have a sound body. As a first consideration a bird must be vigorous and healthy if it is to be able to lay well. Vigor and health are shown by a bright, clear eye, a well set body, a comparatively active disposition and a good circulation.

Further, the bird must be free from physical defects such as crooked beak, long, excessive toe nails, eyelids that overhang so that the bird cannot see well, scaly leg, or anything else that would keep the bird from seeing or getting an abundance of food.

Loss of fat due to laying:—Color or pigmentation changes. (These should be observed by daylight.)

A laying fowl uses up the surplus fat in the body, especially it removes the fat from the skin. In yellow-skinned breeds this loss of fat can readily be seen by the loss of the yellow color. The different parts of the body become white, according to the amount of fat stored in the body and the amount of circulation of blood through the part. The changes occur in the following order:

The vent changes very quickly with egg production, so that a white or pink vent on a yellow-skinned bird generally means that the bird is laying, while a yellow vent means that the bird is not laying. tI should be recognized that all yellow color changes are dependent on the feed, coarseness of skin, and size of bird. A heavy bird fed on an abundance of green food or other material that will color the fat deep yellow will not bleach out nearly as quickly as a pale, yellow bird.

The eyering, that is the inner edge of the eyelids, bleach out a trifle slower than the vent. The ear lobes on Leghorns and Anconas bleach out a little slower than the eyering, so that a bleached ear lobe means a little longer or greater production than a bleached vent or eyelid.

The color goes out of the beak beginning at the base and gradually disappears until it finally leaves the front part of the upper beak. The lower beak bleaches faster than the upper but may be used where the upper is obscured by horn or black. On the average colored, yellow-skinned bird, a bleched beak means heavy production for at least the past four to six weeks.

The shanks are the slowest to bleach out and hence indicate a much longer period of production than the other parts. The yellow goes out from the scales on the front of the shanks first and nallfiy from the scales on the rear. The scales on the heel of the shank are thelast to bleach out, and may generallybe used as an index as to the natural depth of yellow color of the bird. A bleached-out shank usually indicates fairly heavy production for at least fifteen to twenty weeks.

The yellow color comes back into the vent, eyering, ear lobes, beak and shanks in the same order that it went out, only the color returns much quicker than it goes out. A vacation, or rest period, can sometimes be determined by the end of the beak being bleachedand the base being yellow.

Body changes due to laying:—

A laying hen has a large, moist vent, showing a dilated condition and looseness as compared with the hard, puckered vent of a nonlaying hen.

The whole abdomen is dilated as well as the vent so that the pelvic archesare widespread and the keel is forced down, away from the pelvic arches so as to give large capacity. The more eggs a bird is going to lay the following week the greater will be the size of the abdomen. The actual size is, of course, influenced by the size of the eggs laid and by the size of the bird.

Heavy production is shown by the quality of the skin and the thickness and stifiness of the pelvic arches. Fat goes out from the skin and body with production, so that the heavy producers have a soft, velvety skin that is not underlaid by layers of hard fat. The abdomen in particular is soft and pliable. The sternal processes are very prominent and are generally bent outward . The thicker and blunter the pelvic arches and the greater the amount of hard fat in the abdomen, the less the production or the longer the time since production.

One of the finer indications, but yet one of the most valuable in picking the high layer, is the fineness of the head and the closeness and dryness of feathering. The head of a high layer is fine. The wattles and ear lobes fit close to the beak and are not loose and flabby. The face is clean cut. The eye is full, round, and prominent, especially when seen from the front. The high layer is thinner, that is, the feathers lie closer to the body, and after heavy production the oil does not keep the plumage relatively sleek and glossy, but the plumage becomes worn and threadbare.

Changes in secondary Sexual Characters:

The comb, wattles and ear lobes enlarge or contract, depending on the ovary. If the comb, wattles and ear lobes are very large, full and smooth or hard and waxy, the bird is laying heavily. If the comb is limp the bird is only laying slightly, but is not laying at all when the comb is dried down especially at moulting time. If the comb is warm it is an indication that the bird is coming back into production.

Moulting.—When a bird stops laying in the summer she usually starts moulting. The later a hen lays in the summer, or the longer the period over which she lays, the greater will be hei production, so that the high producer is the late layer and hence the later moulter. The length of time that a he nhas been moulting, or has stopped laying, can be determined by the moulting of the primary feathers. It takes about six weeks to completely renew the primary feather next to the axial featheds, and two weeks more for each additional primary to be renewed.

Temperament and Activtiy:—

A good layer is more active and nervous and yet more easily handled than a poor layer. A high layer shows more friendliness and yet elusiveness than a poor bird. A low producer is shy and stays on the edge of the flock and will squawk when caught.

While the characteristics discussed have dealt specially with the current year's production it should be born in mind that a high producer one year is, generally speaking, a high producer in all other years.

TUBERCULOSIS IN HENS

Tuberculosis is a disease affecting only old birds, or stock that is fully matured. The germs of this disease may be in the ground surrounding the poultry house, or in the house itself. They gain entrance through the food, drinking water, or by breathing. Birds suffering from this disease void the germs in the droppings, and these getting mixed with the feed are taken into the system, and thus it is transmitted to the rest of the flock. The symptoms of the disease are a pale comb, rapid loss of flesh, usually diarrhoea, and in the latter stages the bird will be lame in one leg. The bird may die in the course of a few daysdays, or it may linger fos three or even four weeks, in which case it will be practically nothing but skin and bones. On opening the bird the liver and spleen will be found to be covered with raised whitish spots, varying in size from a mere point to half an inch in diameter. In very extreme cases tubercules may be found along the entire alimentary canal, and also on the bones in various parts of the gody. Unlike human or bovine tuberculosis ,the lungs are very seldom affected.

There is no cure for the disease. It is simply a question of keeping it in check as much as possible by observing cleanliness in all details of poultry management. Kill off all the sick or affected birds and bury them deeply and cover with lime; or, better still, burn them. Clean out the hen house

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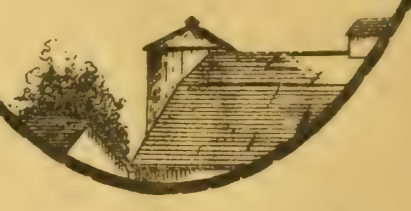

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thoroughly and whitewash it with whitewash having five per cent carbolic acid added to it. Clean out and disinfect all the nests, drinking pans and so on. Put in a layer of fresh earth, sand or gravel, and use an abundance of air-slaked lime under the roosts at all times. The land surrounding the poultry house should receive an application of air-slaked lime, be cultivated, and a crop grown on it. Provide plenty of light in the hen house, and feed only good wholesome foood. The disease is seldom met with in the winter time, but is usually most active in the late summer months. While the disease cannot be cured, still, by following these suggestions, itmay at least be kept in check to a certain extent.

TO INCREASE EGG PRODUCTION

Hens cannot produce eggs profitably on grain alone. The grain ration must be supplemented by protein concentrates. Recent investigations show that the source of protein also influences egg production. That is, protein concentrates of animal and vegetable origin differ in ability to stimulate laying. A series of tests have been conducted at the University of Missouri College of Agriculture to determine the realtive efficiency of animal proteins, represented in experiments with meat scrap and sour milk, and vegetable proteins, represented by oil meal, gluten meal and cottonseed meal, in rations for egg production. Feeding tests have shown that

1—Meat scrap and sour milk are the most economical sources of protein for laying hens.

2—It is poor economy not to furnish the laying hen a protein concentrate of animal origin.

3—Vegetable proteins alone cannot be fed economically.

4—Twenty-five pe rcent meat scrap is a sufficient amount of animal food in a dry mash.

5—There is no evidence that vegetable proteins, alone or in combinations with animal foood, increase egg production.

6—One pound of eggs can be produced with every four pounds of feed if the proper ration is fed.

7—According to these tests, 100 pounds of sour milk is worth 5.4 pounds meat scrap.

RETAIN IN FLOCKS ONLY LAYING HENS

It is a great advantage as well as profitable, to know the hens that do the most laying. While with pure-bred stock there is more difficulty in distinguishing on efrom another, still I have quite often noticed that even though the markings are similar, yet each fowl seems to have a distinctive individuality. Sometimes a hen will show this in her actions, or the formation of her body may hely distinguish her, even her eyes or head.

The use of trapnests and leg bands is probably the best ways to determine accurately which are the best all-round layers in the flock. However, where we have only a comparatively small number of pure-bred hens, say 50 or 60 fowls, and are quick, keeen observers such markings are not absolutely necessary. A good laying hen will set upon the nest for some time while laying, and by giving the nest boxes a certain amount of attention it is hard to pick out th ebest layers in the flock and through their individuality distinguish them from other members of the flock.

Some hens, of course, will lay very few eggs during the season, while others after laying a small number of eggs will become broody, which is not always a desirable trait, and still others of the flock will continue to be prolific layers. It is quite profitable where fowls are under no strict supervision and are perhaps more or less on range, laying at all seasons as they please, that fully a third or more of their number could be disposed of to advantage and a good expenditure in the way of feeds and other items could be saved. Considering the high prices prevailing for feeeds anad also the scarcity of some feed materials, I believe it would be a great help to observe and retain only those in the flock that are paying their way, the others being, of course, disposed of to best possible advantage to the owner. —H. W. SWOPE.

CULL THE PULLETS AND GET MORE EGGS PER HEN IN WINTER

In these days when food conservation is the slogan of the world, we should plan to save on the poultry feed as well. This can best be done by very close culling. The town lot poultry keepers generally get more eggs per hen, on an average, than the farmers. They are obliged to cull very closely because they cannot afford to give space and feed to a worthles hen. The farmers, as a rule, kill or sell the surplus cockerels, some of the old hens, and keep practically all the pullets they haise. If they kill one for the table it is always the big thrifty one and never the cull. Here is where they make a great mistake anda lose much of their profit.

My experience with trap nests for the past four years has proved to me that at least one-fourth—better one-third—of all the pullets I raised should have been marketed before they began to lay. While the young stock is still in the coops it is very easy to go through each flock and culll out the weaklings. There will be one or more pullets in each brood which are decidedly weaker than the strongest.

The chick which was stunted by lice, gapes, bowel trouble, or other cause, is very easily culled out when young, but after once beginning to lay that pullet is lost sight of and the chances are you will keep her two or three years. She will always be a poor layer and the sooner she is sold the better.

My trap nest records are incomplete covering only seven months of each year, from October 1 to May 1, but even this gave me some information of value. The first year I found that one-fourth of my flock had not laid enough eggs to pay for their feed. Most of these were pullets. The first ten pullets that began to lay were the best layers during their second year as well as their first. Less than half of my flock had paid me a worthwhile profit, and yet they were doing better than any of my neighbors' hens. This is something worth thinking about.

Farmers usually make no attempt to get winter eggs, and every little pullet is kept because none of them will lay till spring anyway and the runts will be as goood as the rest by that time. I find that the winter-laying pullet is always about four dozen eggs ahead, and lays as well as any in the spring. It is very easy to go through a flock of pullets in October and pick the ones which will begin laying inside of two months. Mark them in some way so that you may be able to keep them a second year. A hog ring put o none leg is the best way of marking. These hens, if carefully selected when pullets, will be profitable for two or three years.—Ida Phillips.

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gives life time service. Is made of the best Open Hearth steel fence wire, all impurities burned out, all the strength and toughness left in. Makes the fence elastic and springy. Will not snap or break under sudden shocks or quick atmospheric changes. Galvanized to prevent rust and the coating will not flake, peel or chip off. Can be erected over the most hilly and uneven ground, without buckling, snapping or kinking. Every joint is locked together with the well-known "Peerless Lock." The heavy stay wires we use prevent sagging and require only about half as many posts as other fences.
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MOVING PULLETS TO LAYING QUARTERS

When moving mature pullets from colony houses and free range to winter laying quarters abrupt changes must be avoided or considerable trouble may be started. Crowding and poorly ventilated houses will start cold and croup in the flocks. If the quarters are infested with lice anad mites from previous inmates the pulllets will suffer a setback in development, and laying will not begin until late in the year. Provide plenty of roosts not too high up and do not allow any of the fowls to roost on the floor. We accustom our pullets to their winter quarters in the following manner:

The laying houses are cleaned and whitewashed and the floors covered with clean straw. The colony houses containing the young stock are gradually moved up close during summer and along in August we start to scatter the pullets' feed close up to the laying house doors and inside in the litter. After a short time the whole flock is scratching inside for their grain food each day. Then when we get ready to make the change all that is necessary is to close up the laying house at meal time and the pullets are securely housed in accustomed quarters with none of the fuss and excitement usually experienced in catching and moving flocks.

FOWLS OF UNIFORM COLOR AND SIZE

To obtain a flock of vigorous hens, uniform in color of skin and shanks, capable of producing a maximum number of eggs of the same shape, size and color, the farmer has only to purchase a breeding pen of birds of some particular strain on any one of the general-purpose American breeds. One strain of the breed selected for its ability to produce eggs and dressed poultry should be chosen for each flock, and that flock should never be contaminated by mixing with any other strain or breed of fowls. All the fowls of one particular strain will lay eggs that will be very much alike in size and color; when dressed for market the fowls will be alike, and no poultry products command a better price in the market than fowls of uniform color of skin and shanks, and eggs of the same size, shape and color. Thus by standardizing his flock the poultry keeper will increase the efficiency and profit-earning powers at least twenty-five per cent, and at the same time provide his customers with the highest quality of poultry and eggs. —C. B. Ford, Kent Co.

When a man takes office he is sworn in, but he has to do the swearing himself when he goes out.

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The following preparation will aid in the drilling of hard steel used on automobile construction. Mix one part spirits of camphor with four parts of turpentine. After the mixture has been applied to the part to be drilled and allowed to dry an ordinary drill may be used.

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This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N. B., solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's or-ganizations.

IF I HAD KNOWN

If I had known what trouble you were bearing,
What griefs were in the silence of your face,
I would have been more gentle and more caring,
And tried to give you gladness, for a space,
I would have brought more warmth into the place—
If I had known.

If I had known what thoughts despairing drew you,
(Why do we never try to understand?)
I would have lent a little friendship to you,
And slipped my hand within your lonely hand,
And made your stay more pleasant in the land—
If I had known.

THE PRETENDER

By Katharine Holland Brown

For a long hour Mrs. Tuckerman had sat at her narrow, exquisite, old spinet-desk, in her narrow, exquisite, old drawing-room, her son's letter held in one cold hand. She had never once glanced at that letter. Instead, she had stared away down Mount Vernon Street, at the silver panel of the Charles. But written broad on that page of flashing water every word of her boy's message stood out, sharp and clear. Two weeks ago she had torn open that eager scrawl. Today its phrases were graven on her soul.

"Aboard the Chicago Flyer, just out of Cheyenne.

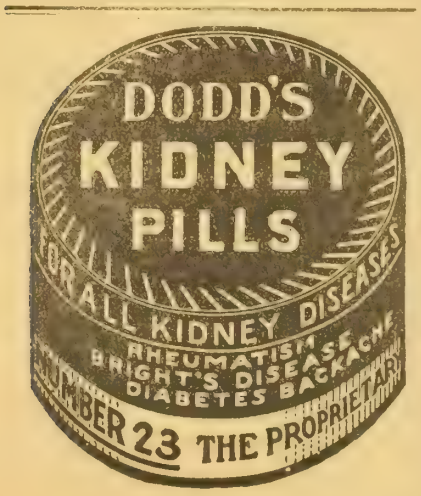
Tuesday, the fourth.

"To Mrs. Edward Carew Tuckerman,
1118 Mount Vernono Street,
Boston, Mass.

"Dear Mother:

"Your letter caught me as we boarded this train. When I'd read it, I felt like a sneak. Here you are, believing that I'm settled at Stanford for the year. Here I am, starting to France this minute. And that's only half my story. But what's done is done. I wouldn't undo it for anything in this world. Believe me!

"Remember the bargain you made, last spring, when war was declared, and I wanted to chuck Tech, and beat it straight over, and join the escadrille? You promised if I'd stick through my senior year, at Tech or at Stanford, either one, that you'd give full permission. Well, I didn't make any promises. Yet I sure meant to hang on at Stanford and get my degree. But now—listen.



"Vacation week Len Carter and I spent at Monterey. The Pells were at the Del Monte, and Len wanted to see Eugenia. I wasn't pining for Eugenia, but I did want to see Elsbury—Frederick T. Elsbury, you know, the wiz who has just worked out a balancing device for scout planes. Outsiders aren't welcomed at his hangar, but I breezed in regardless, and didn't he let me try her out the very first day! I made three rather smooth flights, and Elsbury jabbed that gimlet-gray eye into me and told me where every fellow who can handle a plane ought to be, and told me good and plenty. When I said I was waiting to finish my senior year, he didn't say another word. Just screwed up those queer, peaked eyebrows and looked at me. That look got under my hide. Dare say that's one reason—but wait till you hear the rest.

"Right here I will observe that Len's Eugenia was not the sole ornament of Monterey. The Sidereal Pictures had a company up from Los Angeles, making the 'Hazards of Heloise," with Monterey reefs and precipices for backgrounds. Aimee Adare was starring, but you don't catch Aimee risking dents in that peerless profile on the stunts. Not she! Instead, she sat on the Del Monte piazza and looked like a pink-candy angel, while her double wrestled through blinding surf, or leaped canyons, or fought hand-to-hand with seventeen German spies at once. Naturally her doubles didn't last long. Two quit on them the day we hit Monterey, and they sent in a hurry call to Los Angeles for a third. But when that third girl struck camp, even the director stopped cussing. For that third double was something else again.

"Genevieve Lang, her name was. She's a little slim thing, not nineteen yet, and awfully quiet and shy. She's all browny-gold, hair and eyes and lashes, but her cheeks are burning pink under the tan, and she's got the prettiest teeth I ever saw, white and even as corn, and her hands and feet are simply peachy. She was awfully excited to be understudying the heaven-born Aimee, but she handled her part as if she'd rehearsed it a year. And not even that thug of a Sidereal scenario man could think up a stunt that would faze her. Pluck? It's her middle name. Stubborn? That little shy thing didn't know when to back down. No matter what crazy risk they'd ask, she'd go to it like a pup for a steak-bone. And if flesh and blood couldn't put it through, she'd bluff it through. Yes, ma'am. Bluff it. Bluff it so vividly that you'd gasp and gulp while the camera was grinding before your eyes.

"Aimee the Great began to get edgy. As for the Sidereal boss, he'd stare at that little cool thing when they were slinging her off a runaway engine or locking her into a burning log cabin, and he'd grip his fat hands and sigh: 'Und, on the screen, will she double to our dear Aimee be? Double? She will be one riot.'

"However, he has another guess coming. Genevieve won't double for Aimee. Never again. Because her last big stunt was to let the chief lash her wrists together, then heave her overboard off a yacht. The cords were supposed to drop off the minute she went under. But the chief had tied his knots a bit too tight. Instead of sliding off, they held fast.

"She went down, came up, went down again, came up one fighting second—and we saw the breath was all but out of her. Even then, mother, I saw that little brave thing thrust her lashed arms toward the camera. She couldn't put the scene through according to schedule, so she was bluffing it through, see? Courage? She wrote it!

"Oh, I dare say she thought some extra would hop in and grab her out in time. But nobody hopped. The whole cast just stood pop-eyed. Paralyzed! And the undertow was sweeping that helpless kid straight against the piers of the whart. Another minute and she'd have been snatched down, trapped in that bottomless mud and slime—Gosh, it makes me sick to write about it!

"Well, it was all over quicker than I can put it down. I was standing on the wharf when the chief tossed her overboard. At first I didn't see her danger. When it did dawn on me, I kicked ffo my shoes, dived off the wharf, and came up twenty feet away. Genevieve was just going down for the third time. Maybe I didn't beat it over to her!

"I got a good grip on her and yelled for a rope. At that the gang came out of its trance. I got the rope pronto, likewise a hail of life-preservers. But that undertow was quicker yet, and it swept us both under the piers, and jammed my head against a timber and gave it a jolly crack. However, I'd got a strangle-hold on the rope, and they yanked us out with one tremendous jerk.

"Genevieve was pretty limp, but she managed to say, 'Thank you,' quite the lady, before they carted her off to the hotel. I got a doctor to put a couple of stitches in my head, then washed my face, which needed it, and slept all afternoon. That night I went up to see how Genevieve was making out. She came down-stairs with her hair all crinkly from the water, looking a bit shaky but serene as you please. First thing she said, was: 'The camera-man says he got in enough drowning struggles for three first-rate flashes. It wasn't what the script called for, but anyway we bluffed it through. Aren't you glad your rescue didn't spoil the stunt?"

"'Delighted,' said I. Somehow that got me where I lived. The funny, honest ltitle gink! Any other girl would have been goozling over my broken head, all tied up so noble and pathetic. To her my cracked skull was all in the day's work, along with the bruise on her check-bone, and her black-and-blue wrists. It was up to her to bluff her part, and she'd bluffed it. I had happened in to give her a hand at the fade-out. That was all.

"Well, I sat down, and we talked. By the time we'd talked an hour, I felt as if I'd known her my whole life long. Longer. She said she felt the same way. Next day, while they were shooting Aimee doing the pretty pussy in the box maze, she and I drove off up the Carmel hills. On the road we met Elsbury. He stopped me and said he'd had a cipher from headquarters, and that he stood ready to recommend me to General Ferrier for scout duty, but that I'd have to start east that night and sail the day I reached New York. t Iold him I'd let him know by five o'clock.

"Then we drove on through the pines, to the old Mission. We sat on the bell-tower stairs, where you can look off at the mountains and the sea, and there wasn't a living creature in sight except teh cattle, away on the hills, and a bunch of sea-gulls circling up in that blue, blazing sky. After a while, I said: 'You've got to decide this. It's up to you.'

"She turned white as chalk. Then she said, 'Go!'

"What about you?' I asked her.

"And she said, 'Never you mind about me, I'll bluff it through.'

"Take it from me, mother, she will bluff it through. The little, square, gritty thing! After that, we both forgot that I'd promised to call up Elsbury. And we wasted a lot of time. But after a while I remembered, and we scooted back to Monterey and phoned him. He was so pleased he fairly yipped. Then I hunted up the padre at St. Francis's, and corralled Len (he was best man, with his eyes bulged out on his cheeks), and at nine o'clock we were married in the little dusty chapel, and Genevieve wore Aimee Adare's yellow satin wedding-gown from the last episode of 'Hazards,' and the boss director gave her away. He snivelled all through the ceremony, for he'd counted on giving Genevieve a big part in his next super-feature, but as he said, he couldn't complain, for she'd finished doubling for Aimee, and besides, 'Any time you want to beat it back to pictures, remember, the latch-string is out,' he shouted, as our train pulled out of Monterey.

"Now, mother, you've got a line on things. By the time this letter reaches you, I'll have sailed for France. I feel like a hound-dog to think I can't hot-foot it up to Boston and say goodby. But I'll have just forty minutes from Forty-Second Street to the steamer.

"You'll be angry with me for chucking my senior year. But I couldn't wait. I've got to get into the game. No, you won't understand. Not even Genevieve understands. But she's

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willing to face it out. You'll have to face it out, too.

"So that part is settled. But for Genevieve, herself—

"Now, mother, I'm banking on you to play up. I've banked on you all my days. You've never failed me yet. You won't fail me now.

"Yes, I know what you're saying, that I'm not twenty-one, and Gevenieve is only eighteen, and you don't know her people, and we should have waited and consulted you. You'll have to forget all that. Genevieve is my wife. She's a piece of me. She's the straightest, truest—But you'll have to know her for yourself. Then you'll see.

"Now I've told her to go straight to Boston, to the Withrow Arms, and send you word. I want you to go to see her the minute you get her note. You'll know just what to say. You'll know just haw to make her feel that you're ready and eager to love her.

"Remember, mother. I'm banking on you. This time; of all times in my life, you won't fail me. You'll put this through....."

Mrs. Tuckerman folded the pages with stiff fingers. Two weeks ago today. Eight days since the halting little message had come, "Mrs. Ned Tuckerman is at the Withrow Arms and will be glad to see Mrs. Tuckerman." In those eight days she had not made one move. She had not written one word to her boy. She had not sent one sign of recognition to his wife.

Ned had gone his own way, she told herself quietly. All his life he had gone his own way. He had been a royal baby, a self-willed, domineering little mite, every inch. He was a child still, a great, splendid, overgrown cub, just as self-willed, even more reckless of authority. He was her only child, the one beloved living creature in her walled, aloof life.

This fiery rush to battle she could forgive. It accorded with her loftiest traditions. But for him to take a wife, a trivial little actress, then calmly order his mother to go to her and welcome her!

In a few days she would write to Ned. But she would not write one word of the woman he had married. She would ignore the girl's existence.

She would always ignore her existence. Even when Ned should return from France. Ned had a fortune in his own right. He loved the West. The two would make their home there. Whenever he wished his mothers companionship, he could come to her. But he must come alone. And if the wife cried out and rebelled, why then—her lips bent in a queer ugly line—"Whenever you're ready to beat it back to pictures—"

"If you please, Mrs. Tuckerman."

A maid entered, bringing a card. Mrs. Tuckerman looked at it, puzzled. Then a harsh red burned in her cheek.

"Mrs. Edward Carew Tuckerman."

So, since she had not gone to Ned's wife, Ned's wife had come to her. She was thrusting herself in, demanding her place, her courtesies. Very well. She should see.

"Bring her up at once, Mary."

She stood up, a commanding figure in her stately black, and turned to face the slight, reluctant figure at the door. Her grim mouth twitched. Wine-red velvet and white fox furs, hair like brunished metal, a small face flushed to the temples. Quite what one would expect.

"Mrs. Tuckerman?" The girl put out her hand. It was a very small hand, ice-cold through the glove. The elder woman touched it mechanically. She did not speak. Her silence was like a blow.

The girl winced, swallowed hard, then pulled herself together. She looked up steadily into the hard, older eyes. She spoke in an even, quiet voice, as if she repeated a speech already planned. "Mrs. Tuckerman, you've had Ned's letter. I have not come to ask you to do—what Ned wants you to do. But I have come to ask one thing. I'm mighty certain that you will do this thing for me."

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"Yes?" Mrs. Tuckerman's voice agree." flicked. The girl winced again.

"Yes. Mighty certain." She drew back, still looking into Mrs. Tuckerman's face with dark, unwavering eyes. They were very beautiful eyes. The small, clear-cut face was beautiful, too, with its soft, child cheeks, its young, grave, urging lips.

"Before you make this request, why not tell me something of yourself? That may make it easier for me to agree."

The girl was new to irony. She twisted her small hands; her brown eyes pondered. "But I don't matter. It's something for Ned. Not for me."

"Even so, I should like to hear about your home, your people. That will help me to decide."

The girl considered. "I reckon you're right, Mrs. Tuckerman," she said at last. She slipped back her sumptuous coat and sat down, hands folded, her

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eyes intent. "I know you're right. Because—I'm gonig to ask you to help me bluff something through. And all my life I've had to bluff. Right and left. The whole way."

"Bluff?" Mrs. Tuckerman's brows lifted.

The girl spoke steadily on. "Yes, bluff. Ned calls me one of our best little bluffers, but even Ned doesn't know how well the name fits. You see, there were three of us, mamma and papa and me. We lived in Peoria, Illinois, and papa—well, poor papa, he was the very best ever, but seemed like he never could hold down a job. He was so popular, and he loved a gay time, and he was dead sure that some day he'd make a killing out at Sportsmen's Part. So—so mamma, she sewed at the overall factory. We went to church and Sunday-school, and we held up our heads high as anybody. But we did it all on bluff. We had to. Mamma couldn't earn more than eight dollars a week, the best she could do. And poor papa—somehow he always did put his money on the wrong ponies. But mamma'd never whimper. She'd press his suit for him, and clean his tie in gasoline, and tell him she knew he'd land a job soon. 'For they can't keep a smart man down forever, Jimmy,' she'd say. And she'd dress herself up fresh and sweet, and she kept our house neat's a pin, though she had to get up at five to sweep and clean. 'An elegant home like ours takes work to keep going,' she'd say. And when we didn't have anything but mush and milk, she'd call it turkey with stuffing, or else play the mush was peach cobbler, and the milk, ice-cream. She'd even—"

The girl halted. Her slender fingers clenched. "She'd even bluff about—papa. After awhile he got grouchy, and he wouldn't clean up, and he wouldn't even try for a job any more. 'Poor Jimmy, he needs a change,' she'd say, and she'd leave him have car-fare to go to the Park. Though she'd have to walk to the factory both ways. Then she'd say she wanted to walk, 'It's good for my complexion.'" The girl stared away, down the hilly street. It was as if she stared away across the miles, the years; as if she saw again the patient wife, sending her fretful man for his day outdoors, then hurrying out on the long, hot walk to the factory.

"Well! When I was twelve, everything stopped. Papa, he got struck by an auto one night, and he died next morning. Mamma tried her best to keep on, but she went out with pneumonia two months after. She—she knew. She tried hard to tell me things, but all she could say was: 'Make the best of your life, daughter. Pretend for other folks' sake, lovey, even if you can't pretend for your own.'

"Mamma's kin had always been mad because she married papa, but they stopped being mad then. Gramma came from Iowa and took me back to the farm, and she and grampa—maybe they weren't good to me!" Her soft cheeks crimsoned, her deep eyes shone. "Music lessons, and elocution, and a party every birthday! But grampa and gramma both died when I was fifteen. They left me the farm, but it was mortgaged clear to the eaves. When everything was settled, I had four hundred dollars left. I spent a hundred for a grand monument out to the cemetery, and some more learning typewriting and shorthand. Then I went to California and got a job, first in a grocery, then as stenographer out at Sidereal City.

One day, when I'd worked there a year, a director came tearing in. 'I want an extra girl quick,' he hollers, 'to double Phyllis Harcourt on that falling-bridge stunt.'

"'Not an extra on the lot,' says my boss. "Take Genevieve.'

"I began to fluster, for I was scared to death of the risks they made the doubles take. But the boss wouldn't listen. 'Get along to the location,' he says. 'If you make good, it's an extra five-spot in your envelop. If you can't make good, mind you bluff it through.'

"Well, I went. The script called for me to stand on a log bridge over a gulch sixty feet deep, and fall with the bridge. Yes, it was faked, of course. Not all faked, though. The bridge was just two logs and a hand-rail, swung over the gulch by two ropes. The director gave the ends of those ropes to a couple of huskies, then posted 'em on the ledge twenty feet above.

"'Now,' says he, 'you stand on the bridge while they swing it back and forth, and register terror.'

"I registered terror, all right. The soul was scared out of me. But just as the logs buckled under me, the director grabbed me off the bridge, threw a dummp on it, and yelled, 'Let go!' The men let go. Down went the bridge, dummy and all, and smashed to bits on the rocks below.

"'We nailed that thrill, all right,' says the director, and he sat down and fanned himeslf with his hat. 'You're neither Pickford nor Petrova, kid, but you're sure game. Keep on putting up bluffs like that, and you'll make good every time.'

"Well, I have kept on. I've bluffed every stunt through, so far. And I've learned to bluff other things, besides my job."

She stopped, her eyes on Mrs. Tuckerman's face. Silent, Mrs. Tuckerman looked back at her. Her own face was inscrutable, a dim mask.

"Well—" the girl spoke, at last. "That brings me right up to what I want to ask. All my life I've bluffed, Mrs. Tuckerman. Now I have come to beg you to—to—" She caught her breath. Burning scarlet leaped to her temples and reddened even her white throat. "To ask you—" Again she halted. It was as if she stumbled, baffled and groping, in the other woman's daunting silence. "To ask you to help me bluff—to Ned."

"Help you to bluff—to Ned?"

"Yes." She stood up, erect, quivering. "Listen. Ned's letter asks too much. I don't ask you to like me. Nor to do things for me, either. But while Ned is away from us, while he's in danger, can't you—can't we both bluff it out to him?"

"Really—"

"Oh, you know, you know what I mean!" She took a step forward; it was as if she took her courage in both hands. "You know how much you count, to Ned. You know how he banks on you. He thinks you're the wisest woman, the grandest woman, that ever stepped. Of course he loves me. But you came first. You'll always have it in your hands to shame him or to make him proud as a king. You can always choose whether to hurt him or to make him just as happy!" Her voice broke on the tenderest cadence of love; but deep eyes flamed. "He's my husband. But he's your little boy. He thinks the world of us both, and it'll break him all up if we aren't friends. So, just while he's doing his bit, can't we bluff it through?"

"You mean?"

"Pretend that we like each others." Her voice grew tense, her eyes besought. "Only while he's away from us and in danger. It won't be on the level, I know that. But when somebody you love is fighting through misery, and torment, and pain, you just naturally can't stop with being on the level. You've got to heap it up. You've got to bluff your best, so's to make things up to them."

Silence.

"Just one letter from you will turn the trick," the quivering voice urged on. "Tell him you've seen me, and you aren't really angry—with him. I'll write to him, too, and spread it on

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thick. He'll eat it up, he'll be so eager—and so glad."

Silence.

"Because—" She dropped now, a child worn out with pleading. Sobs caught in her throat. "Because it'll brace him such a lot. It'll help keep the life in him. That I know. Then, the minute he comes back safe and sound, you can snub me as much as you please." Her voice hardened. Defiance flashed in her brimming eyes. "But till then, let's bluff it out together. If he never does come back—"

Mrs. Tuckerman put her hand to her throat. An icy shadow seemed to fall between the two.

"Even then, I'll be glad we deceived him. For he'll go out thinking I've made good with you. And believing you were willing to be friends—with me."

Silence.

"Well." She turned and picked up her cloak. Her hands shook, her whole slight body shook. Defeat had beaten her down like hail. "Well, if you can't see it my way—but if you only could! Take it from me, it never pays to hurt somebody you love. No matter how bad they've hurt you. But if you just could try! If you'd only help me bluff it through—"

Her voice dropped for sheer weakness. White, wan, quivering, she stood before Mrs. Tuckerman a long minute, then bent her head and turned away. Then, at last, Mrs. Tuckerman spoke. "Perhaps your plan is not so difficult." Her hard voice wavered. Her strong mouth trembled on the words. With a supreme effort she pulled herself to her feet and wnt slowly toward the girl. Through the gray mist that hung between she saw her son's wife only as a flaring iridescence of wine and gold and small white startled face. "It might be—feasible."

The girl stared back at her. "You mean—you mean—"

Mrs. Tuckerman brushed her hand against that gray mist. Could she have seen the unbelieving hope on that small face, it might have blinded her still more. "I mean what I say. Don't you think it's the best I can do—to help you pretend?"

Her voice was curt and harsh. She was pitiful, she was almost ridiculous, in her grim, white-lipped majesty. But the girl, with oen amazed, half-whispered cry, flashed to her, straight as

"You will do it! You will! For Ned!"

"Yes. For Ned. But not just for Ned, either." Mrs. Tuckerman thrust straight on. For the brave surrender of the Puritan was upon her. Stiff-necked, unrelenting, cruel, yet just to the core of her soul, she could yield and yield gloriously, for she knew herself conquered by a nobled foe. "For—for—" Her arms were around the girl now, her lips were warm on the soft, frightened face. "Oh, my dear, do you think we'll have to pretend for Ned? Can't it be love between us, and not pretending at all?"

"Well!" At last the girl freed herself, and looked up. Her face was blurred with tears, but her eyes were stars. "Well! Just answer me this one question: is it any wonder Ned felt so sure? So sure he could bank—on you?"

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Dodd's Kidney Pills are popular all over this country, because they not onl ycure the pains and aches of the different diseases springing from disordered kidneys, but also give new life and energy all over the body. They do this naturally. They cure the kidneys. Cured kidneys train all the impurities out of the blood, and the pure blood carries nutriment instead of poison to all nerves and muscles. You have never heard of a person Dodd's Kidney Pills harmed. You hear of thousands who have benefited by them.

GREEN TOMATO SWEET PICKLE

To each seven pounds of tomatoes use about one-half dozen medium-sized onions, silced, three pounds of sugar, one pint of strong vinegar, and one pint of water, an ounce of cinnamon, and one-half ounce each of cloves and allspice—or, better, two ounces of mixed spices. Cover the tomatoes with a brine, using about one cupful of salt to a gallon of water. In the morning drain off well. Place the vinegar, sugar, spices (tied in a muslin bag), and the tomatoes in a preserving kettle and simmer slowly until tender. Put into jars and seal. If mixed spices are not used add a teaspoonful of whole pepper.

PLOWING THE GARDEN

Early plowing is necessary for an early garden. Land plowed in the fall will dry quicker and be ready to plant sooner than spring-plowed lano. The fall-plowed garden should be left in the furrow slice unworked, because this rough surface will catch the winter rain and let the water soak into the sub-soil below; more soil moisture is stored; more of the surface soil finds its way into the openings in the subsoil, thus loosening and ameliorating the latter. The higher masses oi surface soil granulate under the influence of alternate freezing and thawing and sun and rain. If a garden is forked or spaded no attempt should be made to level it.

If sub-soilnig is desirable it should be done in the fall. Usually at this season the subsoil is not wet, and therefore will not be puddled by handling. Winter freezing mellows and disintegrates the subsoil. Leaves oi similar loosening material to be worked into the soil are more plentiful in autumn. This fall working also gives the soil time to settle before spring planting. Soil worked deep in the spring, leaving an opening below, may dry out badly, especially if much coarse organic matter is worked in shortly before planting.

During the first sunny days of early spring the rough surface of fall-turned land dries and flocculates. It is in condition to work down and be planted early. On the other hand, land which lies unturned ,smooth and flat during a wet winter has no dry flocculent surface, and remains too wet to handle util late.—Dr. J. C. Whitten, Missouri.

The Name *Ingersoll* on the Dial

Guarantees you a watch that has given a better time-keeping service to the people of the world than any other watch, at any price.

INGERSOLL RADIOLITE $3.00

Before the invention of the Ingersoll, a quarter of a century ago, watches were luxuries, now fifty million men, women and children—seven times the population of the Dominion—have learned to be punctual and systematic by using an Ingersoll watch.

From coast to coast, from pole to pole, all around the world you will find Ingersolls ticking off the hours for work and play, night and day.

Made in Canada and sold by all good dealers at prices to suit every pocketbook—low cost—fine appearance—sturdy workmanship—correct time-keeping. These are the qualities built into every Ingersoll watch and guaranteed by the makers.

Robt. H. Ingersoll & Bro.

Canadian Offices and Factory

128 Bleury Street, Montreal, Quebec

WATERBURY RADIOLITE $5.50

BREAKING FIVE-TON BOULDERS

A good many farmers have trouble in breaking boulders with dynamite, because they don't know how. Perhaps this will give some of you readers a few practical ideas on the subject. James Waters of this county had several of these five-ton rocks on his place and asked me to smash them up for him.

With a 2-inch soil auger, I bored a hole in the ground under them, going about to the center of each. It is important to get the charge of dynamite right up against the stone. I loaded one pound of the explosive in each hole. This threw the boulder out of its bed onto the surface of the ground. Sometimes the preliminary shot will break or crack the rock.

I then placed 1½ pounds of dynamite on top of the stone, covering the charge with about 6 inches of thick mud. This mudcap charge, as it is called, shattered the stones in pieces small enough to be easily handled by a man and carried away. Sixty per cent straight dynamite is better for mudcapping boulders than the 40% ammonia and less of it would be required to do the work.

The mistake made by many men is in trying to break the boulder by mudcapping white it is still imbedded in the ground. It is almost impossible to break a stone under such conditions. The earth seems to hold it together. Even when the dynamite is loaded in drill holes in the stone, it takes a larger charge to break it when earth is packed around it.—T. A. C.

EIGHT WAYS TO BEAT THE RAT

1. Make all new buildings and other structures rat proof.
2. Make old buildings rat proof by remodelling.
3. Construct and screen sewers and drains so that they will not provide entrance and retreats for rats.
4. Insist on greater cleanliness about markets, stores and generally throughout cities, villages and country districts.
5. Thresh and market grain early, so that stacks will not furnish harboring places and food for rats.
6. Remove piles of straw, trash and lumber which harbor rate in fields and vacant lots.
7. Protect the hawks, owls and other natural enemies of rats, which are not so destructive to poultry as rats themselves.
8. Keep well-trained rat dogs on farms and about city warehouses.

HALF THE ILLS OF LIFE

ARE CAUSED BY

CONSTIPATION.

When the bowels become constipated, the stomach gets out of order, the liver does not work properly, and then follows the violent sick headaches, sourness of the stomach, belching of wind, heartburn, water brash, biliousness, etc.

Keep your bowels regular by using Milburn's Laxa-Liver Pills. They will clear away all the effete and poisonous matter which has collected in the system, give you a free, easy and natural motion of the bowels every day, start the sluggish liver working, and give tone and vitality to the whole intestinal tract.

Mrs. Jos. Labrec, Louise Apts., Calgary, Alta., writes: "I have been troubled with constipation for the last two years. I have tried numerous treatments, but have never been relieved by anything until I used Milburn's Laxa-Liver Pills, which are helping me wonderfully."

Milburn's Laxa-Liver Pills are 25c. a vial. For sale by all druggists and dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

WHATEVER YOUR SKIN YOU CAN IMPROVE IT

In these days of melical enlightenment, beauty is no longer a matter of being "just naturally born lovely." Since way back before the time of Cleopatra, women have been seeking to achieve beauty, but now, more than ever before, they have the weapons of achievement—knowledge of the workings of the human body.

It is on this knowledge that reliable beauty experts base their instructions to us, and we follow them with respect accordingly.

We must realize that to look our best is a duty, and a duty which can be accomplished only by regular attention. An ugly skin is a confession of sloveliness just as surely as a dusty hat or run-down heels.

Some people are born with good skin; a few manage to retaini it in spite of every indiscretion that human folly can commit; but whatever complexion most women possess, especially after their first youth, they have to achieve and conserve.

After a woman is forty, the skin, losing its natural oil, tends to become dry and rough, the muscles become less elastic, causing a sagging and drooping of the lines of the face, and the ordinary wear and tear— the laughter and frowns—of twoscore years begin to show in crow's-feet, double chins and wrinkles great and small; this, every woman knows.

What she would like to know is the remedy. There is a remedy for most of these ills of the flesh if you are willing to be faithful and persistent. Your skin can be made finer in texture, its color can be improved, and the wrinkles even can be eradicated—in time. But attention to the skin must be regular. Spasmodic treatment will yield nothing but disappointment.

First look to the general health. Unless a supply of good, rich blood flows freely beneath the skin, external treatments do no good. The circulation must be properly nourished. Therefore eat nourishing food, avoiding religiously what does not agree with you.

Exercise, out of doors if possible; if not, before an open window night and morning. Drink plenty of water—at least eight glasses a day. Get sufficient sleep—most people need eight hours—in a room with the windows open.

When your general health is as good as you can make it, you can look more definitely to the skin. In some cases it needs little more than to be kept clean, a matter about which many people are not so careful as they think they are. Select a good soap; that is, one that does not contain free alkali. This is especially important if your skin is inclined to dryness. In that case, too, it is well to boil the water to free it from the lime, which withers the skin. Rain-water is even better. Or oatmeal used in a bag is helpful in overcoming dryness.

In washing the face, many people seem to think that vigor is the one thing needful. They rub and scrub with a rough cloth and finish with a harsh toweling, thereby deepening every wrinkle. The dirt is on the surface and can be removed by gentle movements. Wash your face at night with blood-warm water and soap. Apply cold-cream, rubbing it well into the skin, always with an upward and outward movement; then wipe it with a soft cloth (dipped in witch-hazel if the skin is too oily) and apply the cream again.

Ice is excellent for toning up loose, flabpy skin, making it firm. I have heard it opjected that ice used in this way sometimes causes neuralgia, but authorities say that if it is applied over the cream, it will not have any ill effects. Cold water, too, may be dashed over the face after the cream has been rubbed in. The face must then be wiped a second time. The cream should not be left on overnight, as it prevents the throwing off of waste matter.

Where the skin is loose and flabby, even if it is dry, an astringent should be used. Cold water, especially if a little salt is added, acts as an astringent. Lemon juice is thought to be too strong for most skins. There are, too, many good astringents on the market.

After the skin is thoroughly cleansed, it should be massaged. There is nothing in the treatment of the skin more important than this matter of massage. Dry skin especially, having lost its natural elasticity, needs massage, for massage induces a normal flow of oil, besides promoting circulation and building up the muscles. It must be done carefully, however, in order to do any good.

If the fee of a professional masseuse is not prohibitive, you will feel repaid for the outlay. Nevertheless, one can do it oneself if sufficient care is taken. Above all, massage should be done regularly. Ten minutes every night will give more satisfaction than sixty when a reform wave overtakes you.

After the face has been washed and wiped off with care the cream, and an astringent and second coat of cream applied, begin the massage. The strokes should always be easy and gentle and the movement always upward and outward, as a downward motion will increase the discouraging tendency of the muscles to sag.

To massage begin at the corners of the mouth, working upward with a kind of clawing motion executed with

CURED HIS RUPTURE

I was badly ruptured while lifting a trunk several years ago. Doctors said my only hope of cure was an operation. Trusses did me no good. Finally I got hold of something that quickly and completely cured me. Years have passed and the rupture has never returned, although I am doing hard work as a carpenter. There was no operation, no lost time, no trouble. I have nothing to sell, but will give full information about how you may find a complete cure without operation, if you write to me, Eugene M. Pullen, Carpenter, 5543 Marcellus Avenue, Manasquan, N. J. Better cut out this notice and show it to any others who are ruptured—you may save a life or at least stop the misery of rupture and the worry and danger of an operation.

MINARD'S LINIMENT

"KING OF PAIN"

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

WARNING—

That pain in the back is a danger signal.

Pain in the back is one of the commonest symptoms of kidney trouble. It is Nature's way of telling you that your kidneys are tired, congested and need immediate assistance, or they cannot keep the blood stream purified.

You know the rest. Once the blood stream is poisoned, a chain of diseases follow, and you probably become an invalid. Be warned,—use

Gin Pills
FOR THE KIDNEYS

and free yourself from the ravages of all Kidney or Bladder afflictions, Brick Dust Deposits, Painful Urinations, Backache and constant Headaches.

Gin Pills have brought relief to thousands—they will do the same for you. Try them.

50c a box. Sample box free on request.

THE NATIONAL DRUG & CHEMICAL CO.
of Canada, Limited, Toronto, Ont.

U.S. residents should address Na-Dru-Co., Inc., 202 Main St. Buffalo, N.Y.

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I KNOW A WOMAN'S SUFFERINGS

I am a woman.

What I have suffered is a far better guide than any MAN'S experience gained second-hand.

I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight and dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

Read My FREE Offer:

To Mothers of Daughters. I will explain a simple home treatment which speedily and effectually dispels green-sickness (chlorosis), irregularities, headaches and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten days' trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

MRS. M. SUMMERS, Box 309 - - Windsor, Ontario

Too Nervous To Sleep

Nerves Wrecked by Accident—Was Afraid to Go in a Crowd or to Stay Alone—Tells Of His Cure

Much sympathy was felt in this city for Mr. Dorsey, who met with a distressing accident when his foot was smashed in an elevator.

The shock to the nervous system was so great that Mr. Dorsey was in a pitiable condition for a long time. He was like a child in that he required his mother's care nearly all the time. He feared a crowd, could not stay alone and could not sleep because of the weakened and excited condition of his nerves.

Detroit doctors did what they could for him, but he could not get back his strength and vigor until he fortunately heard of Dr. Chase's Nerve Food.

It is no mere accident that Dr. Chase's Nerve Food proves to be exactly what is needed in so many cases of exhausted nerves. It is composed of the ingredients which nature requires to form new blood and create new nerve force. For this reason it cannot fail and for this reason it succeeds when ordinary medicines fail.

Mr. Laurence E. Dorsey, 39 Stanley street, London, Ont., writes: "About three years ago I got my foot smashed in an elevator in Detroit, which completely wrecked my nerves. I doctored with the doctors there, but they did not seem to be able to help me. My nerves were in such a state that I could not go down town alone or go any place where there was a crowd. Sometimes my mother would have to sit and watch over me at night, and sometimes I could not get any sleep at all. But one day last winter I commenced using Dr. Chase's Nerve Food, and before I had completely used the first box I could see a difference in my condition. I continued using these pills for some time. The result was splendid. I feel so much better, can sleep well at night, can go out on the street and attend gatherings like the rest of people. I am so pleased to be able to tell you what Dr. Chase's Nerve Food has done for me, and to recommend it to other people."

Dr. Chase's Nerve Food, 50 cents a box, a full treatment of 6 boxes for $2.75, at all dealers or Edmanson, Bates & Co., Limited, Toronto. Do not be talked into accepting a substitute. Imitations only disappoint.

the fleshy part of the finger-tips; work over thecheek bones up to the temples.

The cheeks may be massaged also with a rotary motion outward. In all rotary motions remember that the upward part of the stroke should be harder than the downward. Use the rotary motion also on the temples and the forehead. If, however, the forehead is lined, smooth it out instead of using the circular movement.

In smoothing out all wrinkles, the movement should be in the direction of the wrinkle, for the tissues in the creases have been broken down and are in great need of the increased flow of blood and of the nourishment furnished by the massage and the cream. If you make a movement across a wrinkle, make one in teh oposite direction with the other hand. Lines across the forehead may sometimes be helped by loosening up the scalp about the hair line by a little gentle massage.

An oval movement with one finger is used between the eyes. Or the wrinkle may be held firmly apart with the two fingers of the left hand while with the right forefinger one works at the crease and irons out the furrow.

The position of the hands in removing crow's-feet is as follows: The right forfinger traces out a figure eight at the corner of each eye. It is especially important in banishing this unbecoming sign of mirh and laughter that the skin be kept well nourished.

In reducing double chin, both hands are used. Begin at the point of the chin, holding the chin in the hands as in a cup. Rub hard, in and down toward the throat, first with one hand then wih the other; or, beginning at the point of the chin, rub firmly out toward either ear.

The throat and neck, too, should be massaged. The movement here is circular. Using the thumb, placed under the jaw, as a brace, execute the rotary movement on the other side of the neck, with all the fingers. As you work, gently pinch the flesh a little.

If the throat and neck are too thin, the movements should be gentle; if too fat, the strokes should be vigorous. Continue the massage until a slight, pleasant glow or warmth is felt. From six to ten minutes will usually effect this.

The remedies are simple, but to give results they must be applied regularly. It is the chief thing in the care of the skin, and one can not begin too soon.

Spanking Doesn't Cure!

Don't think children can be cured of bed-wetting by spanking them. The trouble is constitutional, the child cannot help it. I will send **FREE** to any mother my successful home treatment, with full instructions. If your children trouble you in this way, send no money, but write me to-day. My treatment is highly recommended to adults troubled with urine difficulties by day or night. Address

Mrs. M. Summers
BOX 309 WINDSOR, Ontario

WINTER GARDEN IN THE CELLAR

If you have a warm cellar you can grow fresh vegetables all winter. It is particularly easy to grow rhubarb in the cellar and to provide enough for pies at any season when they will be greatly appreciated. Asparagus is forced almost as easily, while dandelions, endie vand horse radish may be grown without much trouble.

Perhaps it is best to experiment with rhubarb if one feels a little doubtful about the success of a cellar garden. Rhubarb roots are plentiful and cheap, but it is well to use only those which are at least three years old. Usually they can be obatined in the home garden or in the garden of a neighbor, but if not, a seesdan or nurseryman will provide several clumpsat small expense.

Freeze Rhubarb Roots

When the roots come from the garden they must be dug before the ground freezes, although they are not to be forced until they have been well frozen. It is difficult to dig them after the ground has become frozen, of course, but they should be left on top of the ground until the frost has penetrated them. Then they will keep safely until the time to start them into growth arrives. As a rule they do not force well until after January 1.

The plants may be set on the cellar bottom or in boxes and commonly are simply covered with two inches of sand, the latter being kept moist at all times. Quicker results are secured if a layer of fresh horse manure is placed under the clumps and covered with two or three inches of loam, so that the roots will not be burned. A foot apart is the right distance to set the clumps.

Rhubarb forced in this way is best grown in the dark, for which reason it is well to hang a curtain over the window or across a corner of the cellar, or to partition off one end. Of course, only a little room is needed. Two or three months will be required to produce acrop and the stalks will be almost white, with but little leaf growth and of delicious flavor.

Don't Allow the Roots to Freeze

Similar methods are to be followed when asparagus is forced in the cellar, except that the roots must not be allowed to freeze. They may be kept in a cool place, however, and a few forced at a time. Plants from the garden or the fields of professional growers may be used if they are at least three years old. Seedsmen sell plants designed especially for forcing.

The roots are to be grown in the dark, like those of rhubarb, and should be set close together, but not crowded, with ordinary soil worked around them so that all the spaces are filled. Asparagus comes along rather quickly, and often may be eaten in six or seven weeks from the time forcing begins.

For all vegetables grown in the dark a temperature of from 50 to 65 degrees will be about right. In many furnace-heated cellars there will be no difficulty about the temperature, but sometimes it may be necessary to provide a little extra heat, which is easily accomplished by hanging one or two lighted lanterns in the cellar, but first the glass must be painted black, so that no light will be emitted.

There are other vegetables which may be grown in the kitchen in full sunlight during the winter months. A little bunch of parsley potted and given a sunny window will furnish flavor for many a sovory dish. Sage may also be grown in pots. Cress is easily grown in a box set in the window and a few seeds will give plants large enough to use in a few days. Chives may be forced in the same way, so that there need be no lack of fresh green stuff, even when the ground outside is piled high with snow.—E. I. Farrington.

Knit Socks and Dollars with the Auto Knitter

Profitable employment at home in war or peace time

Socks—more socks—the Soldiers' call! The hosiery industry is booming and the demand far exceeds the supply. Help us fill it but get away from slow hand knitting. Use the fast, reliable, modern Auto Knitter. We gladly take all the socks you wish to send us and pay you highly profitable prices.

The Auto Knitter is simple and easily learnt— and secures a big income for full or spare time work right in your own home and no previous experience is essential.

Write today for full particulars enclosing 3c stamp. See what good money you and your family can earn at home besides doing patriotic work.

Auto Knitter Hosiery (Can.) Co., Limited, Dept.475B 607 College St., Toronto.

If Your Hot-Water Bag is past mending do not discard it, but cut off the top, open the bag out flat and cover it with a pretty colored linen. Fold into the desired shape and use as a washcloth, toothbrush, soap and sponge holder when travelling.

"Unto the least of these"

RIVET your eyes on this picture of a Belgian mother and child, until you feel the full horror of the situation! Thousands of these orphans, dying of starvation, might now be living in comfort and plenty, had their soldier fathers not flung themselves into the breach when the Hun invaded Belgium.

The fathers died to save us. Are we going to let the orphans starve?

Conditions are simply ghastly. The United States loans to the Belgian Government finance the general relief work, but this only provides a bowl of soup and two pieces of bread to each person per day.

What is that for a growing child?

The Slaughter of the Innocents is less terrible than what is now occurring in Belgium—practically a whole generation of the Belgian nation in the grip of Consumption, Rickets and other ills all directly due to insufficient nourishment.

The Canadian Bureau in Brussels will administer funds, and provide means for getting the ailing children into Holland and into orphanages where they can be saved from a hideous death.

Before you sit down to another meal, do SOMETHING for the Belgian children. . . . . .

Make cheques payable and send contributions to

Belgian Relief Fund

(Registered under the War Charities Act) 115

to your Local Committee, or to

Headquarters: 59 St. Peter St., Montreal.

PRINCE EDWARD ISLAND EXHIBITION

(Continued from page 11)

Bantam, Rosecomb Hen—1, A. F. Houston.

Bantam, A. O. V. Cock—1, A. F. Houston; 2, Stewart McKinnon, Highfield.

Bantam, A. O. V. Hen—1, A. F. Houston.

Hamburg, Spangled Cock—1, John Tweedy; 2, Harry Tweedy; 3, Ernest McAleer.

Hamburg, Spangled Hen—1, Harry Tweedy, Ernscliffe; 2, John Tweedy, Ernscliffe; 3, Ernest McAleer, Charlottetown.

Hamburg, Penciled Cock—1 and 3, A. H. Boswall, York; 2, H. L. Boswall, Marshfield.

Hamburg, Penciled Hen—1 and 3, A. H. Boswall; 2, H. L. Boswall.

Houdan, Cock—1, Quality Brand Poultry Yards, Amherst, N. S.

Houdan, Hen—1, Quality Brand Poultry Yards.

Leghorn, White [illegible] Cock—1, Quality Brand Poultry Yards; [illegible] and 3, W. J. Pickard, Charlottetown.

Leghorn, White S. C. Hhen—1, Quality Brand Poultry Yards; 2, W. J. Pickard; 3, Quality Brand Poultry Yards.

Leghorn, Brown S. C. Cock—1, W. H. Whitiock, Charlottetown.

Leghorn, Brown S. C. Hen—1, W. H. Whitlock.

Leghorn, Buff S. C. Cock—1 and 2, W. W. Osborne, New Glasgow, N. S.

Leghorn, Buff S. C. Hen—1 and 3, W. W. Osborne; 2, Fred Blanchard, Charlottetown.

Minorcas, Black S. C. Cock—1 and 2, Wm. J. Cudmore, Charlottetown.

Minorcas, Black S. C. Hen—1 and 2, Wm. J. Cudmore.

Minorcas, R. C. Cock—1, Albert Carr, Charlottetown.

Minorcas, R. C. Hen—1, Albert Carr.

Orpington, Buff cock—1 and 2, Mrs. Alfred Thorne, Charlottetown.

Orpington, Buff Hen—1 and 2, Mrs Alfred Thorne; 3, J. C. Irving, Cherry Valley.

Orpington, A. O. V. Cock—1, E. S. Griffin, Port William, N. S.

Orpington, A. O. V. Hen—1 and 3, C. M. E. Kyle, Sussex, N. B.; 2, E. S. Griffin.

Plymouth Rock, Barred Utility Cock—1, W. J. Pickard; 2, P. Murphy, Charlottetown.

Plymouth Rock, Barred Utility Hen—1 and 2, P. Murphy.

Plymouth Rock, White Utility Cock—1 and 3, Albert Boswall; 2, C. B. Chapman, Amherst, N. S.

Plymouth Rock, White Utility Hen—1 and 2, Albert Boswall; 3, C. B. Chapman.

Plymouth Rock, A. O. V. Cock—1, W. W. Osborne; 2, Chester Gregory, St. Avards.

Plymouth Rock, A. O. V. Hen—1and 2, Chester Gregory; 3, W. W. Osborne.

Rhode Island Red, A. V. Cock—1, C. M. E. Kyle; 2, Reginald Higson, Stellarton, N. S.; 3, John Higson; 4, Otto K. Hoffman, Charlottetown.

Rhode Island Red, A. V. Hen—1, C. M. E. Kyle; 2, Reginald Higson, Stellarton, N. S.; 3, John Whillock, Charlottetown; 4, John Higson.

Wyandotte, Columbian Cock—2, Amos Acorn, Charlottetown.

Wyandotte, Columbian Hen—1, Evangeline Poultry Yards, Wolfville, N. S.; 2, Amos Acorn.

Wyandotte, Partridge Cock—1 and 2, Wm. Beazley, Halifax; 3, Harry G. Lapthorne, Charlottetown.

Wyandotte, Partridge Hen—1, Harry G. Lapthorne; 2, C. M. E. Kyle; 3, Jos. Costello, Charlottetown.

Wyandotte, White Cock—1, Jos. White, Charlottetown; 2, Evangeline Poultry Yards; 3 and 4, A. F. Houston.

Wyandotte, White Hen—1, Almon Boswall; 2, Jos. White; 3, Evangeline Poultry Yards; 4, A. F. Houston.

Wyandotte, A. O. V. Cock—1, C. M. E. Kyle; 2, Wm. Beazley; 3, J. C. Irving.

Wyandotte, A. O. V. Hen—1, J. C. Irving; 2 and 3, C. M. E. Kyle.

A. O. V. Standard Cock—1 and 2, Donald Keith, Stellarton, N. S.; 3, Evangeline Poultry Yards.

A. O. V. Standard Hen—1 and 3, Donald Keith; 2, Sydney Cable, Truro-N. S.

Chickens

Anconas, Mottled Cockerel—1, W. H. D. Vessey, York; 2, E. J. Vessey.

Anconas, Mottled Pullet—1, E. J. Vessey; 2, W. H. D. Vessey.

Bantam, Japanese Cockerel—1, L. A. Hayard, Charlottetown.

Bantam, Japanese Pullet—1, L. A. Hayard.

Bantam, Cochin Pullet—1, L. A. Hayard.

Hamburg, Spangled Cockerel—1, John Tweedy; 2, Harry Tweedy.

Hamburg, Spangled Pullet—1, Harry Tweedy; 2, John Tweedy.

Hamburg, Penciled Cockerel—1, H. L .Boswall; 2 and 3, A. H. Boswall.

Hamburg, Penciled Pullet—1 and 3, A. H. Boswall; 2. H. L. Boswall.

Houdan, Cockerel—1, Quality Poultry Yards.

Houdan, Pullet—1, Quality Poultry Yards.

Leghorn, White S. C. Cockerel—1, 2 and 4, W. J. Pickard; 3, Quality Poultry Yards.

Leghorn, White S. C. Pullet—1, 2 and 3, W. J. Pickard; 4, John Whitlock

Leghorn, Brown S. C. Cockerel—1, W. H. Whitlock.

Leghorn, Brown S. C. Pullet—1, W. H. Whitlock.

Leghorn, Buff S. C. Cockerel—1 and 3, W. W. Osborne; 2, Fred Blanchard.

Leghorn, Buff S. C. Pullet—1 and 2, W. W. Osborne; 3, Fred Blanchard.

Minorcas, Black S. C. Cockerel—1, 2 and 3, Wm. J. Cudmore.

Minorcas, Black S. C. Pullet—1, 2 and 3, Wm. J. Cudmore.

Minorcas, Black R. C. Cockerel—1 and 2, Albert Carr.

Minorcas, Black R. C. Pullet—1 and 2, Albert Carr.

Orpington, Buff cockerel—1, Willow Park Poultry Yards, Halifax, N. S.; 2 and 3, John Whitlock.

Orpington, Buff Pullet—1 and 2, Willow Park Poultry Yards.

Willow Park Poultry Yards; 3, John Whitlock.

Orpington, A. O. V. Cockerel—1, E. S. Griffin.

Orpington, A. O. V. Pullet—1, E. S. Griffin.

Plymouth Rock, Barred Utility Cockerel— and 2, Geo. Crockett, York; 3, W. J. Pickard; 4, W. W. Osborne.

Plymouth Rock, Barred Utility Pullet—1 and 3, Geo. Crockitt; 2, W. W. Osborne; 4, W. J. Pickard.

Plymouth Rock, White Utility Cockerel—1, C. B. Chapman.

Plymouth Rock, White Utility Pullet—1, C. B. Chapman; 2 and 3, Albert Boswall.

Rhode Island Red, A. V. Cockerel—1, Otto K. Hoffman;; 2, Reginald Higson; 3, John Higson.

Rhode Island Red, A. V. Pullet—1, John Higson; 2, Reginald Higson; 3, Otto K. Hoffman.

Wyandotte, Partridge Cockerel—1, Sydney Enman, Charlottetown; 2, Evangeline Poultry Yards; 3, Mrs. Flora McLean, Long Creek.

Wyandotte, Partridge Pullet—1, C. M. E. Kyle; 2, Mrs. Flora McLean; 3, Mrs. Jas. Tait.

Wyandotte, White Cockerel—1, 2 and 3, Mrs. Flora McLean; 4, Almon Boswall.

Wyandotte, White Pullet—1 and 2, Almon Boswall; 3 and 4, Mrs. Flora McLean.

Wyandotte, A. O. V. Cockerel—1, Reginald Higson; 2, C. M. E. Kyle; 3, John Higson.

Wyandotte, A. O. V. Pullet—1, Reginald Higson; 2, John Higson; 3, C. M. E. Kyle.

A. O. V. Standard Cockerel—1, Sydney Cable, Truro; 2 and 3, Donald Keith, Stellarton.

A. O. V. Standard Pullet—1, Sydney Cable; 2 and 3, Donald Keith.

Breeding Pens

Pen, Leghorns—1, Quality Brand Poultry Yards; 2, Sydney Enman; 3, W. J. Pickard.

Pen Minorcas—1 and 2, Wm. J. Cudmore.

Pen Orpingtons—1, Thomas Mills, Charlottetown; 2, Mrs. Alfred Thorne, Charlottetown.

Pen Plymouth Rocks—1, Quality Brand Poultry Yards; 2, Albert Boswall; 3, Thomas Mills.

Pen Wyandottes—A. F. Houston; 2, Sydney Enman; 3, C. M. E. Kyle.

Pen Rhode Island Reds—1, Edwin Reid, Rollo Bay; 2, John Higson; 3, Otto K. Hoffman.

Pen A. O. V.—1, Quality Brand Poultry Yards; 2, Donald Keith.

Best pr. chickens white legs, dressed—1, W. J. Pickard; 2, S. R. Lane, Southport.

Eggs, Fresh Gathered. For Producers Only.

1 doz. Specials—1, William J. Cudmore, Charlottetown; 2, Heath Vessey, York; 3, Benj. Rodd, Brackley Point Rd.

1 doz. Extras—1. W. J. Pickard, R. R. 2, Charlottetown; 2, E. J. Vessey, York; 3, Heath Vessey.

1 doz. No. 1's—1, W. J. Pickard; 2, Benj. Rodd.

6 doz. Specials—1, Benj. Rodd.

6 doz. Extras—1, Heath Vessey.

Eggs, Fresh Gathered.

12 doz. Specials—1, E. J. Vessey.

12 doz. Extras—1, Heath Vessey.

12 doz. No. 1's—1, E. J. Vessey.

Turkeys, Geese, Ducks.

One Male and One Female

Turkey, Bronze male, over 1 yr.—1, Sydney Enman; 2, G. L. Hayden, Cherry Valley.

Turkey, Bronze female, over 1 yr.—1, G. L. Hayden; 2, Sydney Enman.

Turkey, Bronze Male, hatched in 1918—1, G. L. Hayden.

Turkey, Bronze female, hatched in 1918—1, G. L. Hayden.

Geese

Toulouse Male, over 1 yr.—1, David Reid & Son, Montague; 2, Mrs. Geo. L. Boswall; 3, Almon Boswall.

Toulouse female, over 1 yr.—1, Almon Boswall; 2, Mrs. Geo. L. Boswall; 3, David Reid & Son.

White Bremen or Emden, over 1 yr.—1 and 3, W. J. Pickard; 2, Albert Boswall.

White Bremen or Emden, over 1 yr.—1 and 2, Albert Boswall; 3, W. J. Pickard.

A. O. V. made, over 1 yr.—1, Harry Tweedy; 2, John Tweedy.

A. O. V. female, over 1 yr.—1, Harry Tweedy; 2, John Tweedy.

Toulouse male, hatched in 1918—1, Mrs. Geo. L. Boswall; 2 and 3, Almon Boswall.

Toulouse female, hatched in 1918—1 and 2, Almon Boswall; 3, Mrs. Geo. L. Boswall.

White Bremen or Emden made, hatched in 1918—1, W. J. Pickard; 2, Albert Boswall.

White Bremen or Emden female—1, Albert Boswall; 2, W. J. Pickard.

A. O. V. male, hatched in 1918—1, Harry Tweedy.

A. O. V. female, hatched 1918—1, Harry Tweedy.

Ducks

Rouen male, over 1 yr.—1, H. L. Boswall; 2, A. H. Boswall.

Rouen female, over 1 yr.—1, H. L. Boswall; 2, A. H. Boswall.

Pekin male, over 1 yr.—1 and 2, Albelt Boswall; 3, W. W. Owen, Charlottetown.

A. O. V. male, over 1 yr.—1, Mrs. Geo. L. Boswall.

A. O. V. female, over 1 yr.—1, Mrs. Geo. L. Boswall.

Rouen male, hatched 1918—1, A. H. Boswall; 2, H. L. Boswall.

Rouen female, hatched 1918—1, H. L. Boswall; 2, A. H. Boswall.

Pekin male, hatched 1918—1, W. W. Owen; 2, Albert Boswall.

Pekin female, hatched 1918—1 and 2, Albert Boswall; 3, W. W. Owen.

A. O. V. male, hatched in 1918—1, Albert Boswall.

A. O. V. female, hatched in 1918—1, Albert Boswall.

W. J. CLARK, Judge.

AGRICULTURAL PRODUCTS GRAINS AND SEEDS

Wheat

White Fyfe—1, E. J. Vessey, York.

Red Fyfe—2, Calvin W. Wood, Southport.

Campbell's White Chaff—1, Calvin W. Wood.

White Russian—1, E. J. Vessey.

A. O. V.—1, Ernest Lund, Hazelbrook.

Barley

2 rowed—1, E. J. Vessey; 2, S. R. Lane, Southport; 3, H. E. Bent, Tupperville, N. S.

6 rowed—1, E. J. Vessey; 2, H. E. Bent; 3, Calvin Wood.

Timothy Seed—2, Jas. Essery, Devon Farm, Union Rd.

Flax Seed—1, E. J. Vessey.

Best Sheaf Wheat, Red or White Fyfe—1, Calvin W. Wood; 2, Heath Vessey, York; 3, E. J. Vessey.

Best Sheaf Wheat, A. O. V.—1, E. J. Vessey; 2, Calvin W. Wood; 3, Ernest Lund.

Best Sheaf Oats, Banner—1, E. J. Vessey; 2, Calvin W. Wood; 3, Peter Brodie.

Best Sheaf Oats, A. O. V.—1, Peter Brodie; 2, G. Lawson Wood, Hazelbrook.

Best Sheaf Barley—1, E. J. Vessey; 2, Calvin W. Wood; 3, Elmer Jones, Pownal.

Oats

Black—1, Peter Brodie; 2, H. J. Vessey.

Ligowa—1, E. J. Vessey.

Banner—1, E. J. Vessey; 2, Peter Brodie; 3, Calvin W. Wood.

White A. O. V.—1, Peter Brodie; 2. S. R. Lane, Southport.

Buckwheat—1, Herbert Lewis, York.

Field Roots and Vegetables

Potatoes, collection best early varieties—1, E. J. Vessey, York; 2, Peter Brodie, York; 3, Gordon McEachern, Charlottetown.

Potatoes, collection best late varieties—1, E. J. Vessey; 2, Peter Brodie.

Potatoes, collection best white varieties, named—1, E. J. Vessey; 2, Peter Brodie; 3, H. E. Bent.

Potatoes, collection best red varieties—1, E. J. Vessey; 2, Peter Brodie; 3, H. E. Bent.

Collection of Field Roots, any kind, potatoes not included—1, A. C. Wood, Alexandre.

Garden Vegetables

Best collection table Squash, not less than 4 varieties—1, E. H. Burke; 2, A. C. Wood.

Herbs, garden collection—1, A. C. Wood; 2, Robert H. McKinnon.

HORTICULTURE

Apples, domestic and home market.

Collection best commercial varieties grown in Maritime Provinces—1, Charles Webster, Kentville, N. S.; 2, H. E. Bent, Tupperville, N. S.; 3, S. R. Lane, Southport.

Best collection grown on P. E. Island 1, S. R. Lane; 2, Jas. Essery; 3, D. P. Irving, Vernon.

Pears. Collection of not less than 4 sorts, named—1, H. E. Bent; 2, Charles Webster.

Plums. Collection, not more than 15 sorts named—1, H. E. Bent; 2, D. J. Stewart.

Honey and Apiary Supplies

Display of liquid extracted honey—1, R. E. Moase, New Annan; 2, H. Newson, East Royalty.

DAIRY PRODUCTS

Butter, box suitable for export, made at Creamery—1, F. G. Lang, North Tryon, 96.7; 2, Dunstaffnage Dairy Co., Dunstaffnage, 96.3; 3, Bertram I. Lane, Lake Verd Factory, Vernon, 96.2; 4, Rupert H. Hubley, Beatons Mills, 95.7; 5, Dunk River Dairy Co., C. Bedeque, 95.4.

Creamery Prints—1, F. G. Lang, 96.8; 2, Dunk River Dairy Co., 95.8; 3, Rupert H. Hubley, 95.5; 4, Windsor McNeill, Launching Place, 94.4.

Butter, Tub or crock, made at private dairy—1, Mrs. Allan Robertson, Mt.

Hope, 94.5; 2, Mrs. A. H. Boswall, Marshfield, 93.5; 3. Mrs. Lee Essery, Devon Farm, Union Road, 92.6; 4, Mrs. Geo. Howard, Winsloe Station, 92.1.

Box of Prints, made at private dairy—1, Mrs. Allan Robertson, 95.1; 2, Miss Louise Howard, Winsloe Station, 94.8; 3, Mrs. Lee Essery, 92.8; 4, Mrs. L. H. D. Foster, Marshfield, 92.6; 5, Benj. Rodd, Brackley Point, 92.5; 6, Mrs. John Simmons, East Royalty, 92.2; 7, Mrs. E. A. Prowse, Brackley Pt., 91.3.

Fancy display, made for table—1, Miss Louise Howard; 2, Mrs. E. A. Prowse; 3, Mrs. John Gill, Union Rd.

CANADIAN GOVERNMENT BOOTH AT CHARLOTTETOWN

The Canadian Governments Booth at the Charlottetown Exhibition was one of the main centres of attraction in the main building. There the public saw a beautiful model of the car ferry, about 4½ feet long, complete in every artistic detail. The walls of the booth were decorated with colored pamoramic maps of the Maritime Provinces and special sections thereof, such as Prince Edward Island and The Bras D'or Lakes. An exceptionally fine picture of the Quebec bridge showed this masterpiece of structural engineering art. Booklets and post cards advertising the Canadian Government Railway system were distributed by Mr. Frank L. Doujan, the energetic and efficient Travelling Passenger Agent, who had charge of the booth. The citizens of Eastern Canada are justly proud of the Canadian Government Railway system, which gives such excellent service to the travelling public, and the section through which it operates.

Increases Value of Horse

In the olden days when a horse was strained or had any blemish, it ended his career as another horse was speedily procured in place. At the present time, owing to the high prices—horses are now bringing on the market, few can afford to dispose of a blemished horse of which there is any hope of treating and again making sound.

One of the important means of treatment has been the popular remedy Absorbine. Absorbine is a pleasant as well as a convenient remedy to use, does not blister or remove the hair and horse may be used during treatment.

Absorbine has been successfully used for more than a quarter of a century and here is what a few of its users think of it: "I have received the remedy all O. K. and used it on my horse with great success. He had fistula about ready to burst when Absorbine came. Began to use it by steaming with hot bran poultice over Absorbine and never saw anything yield to treatment so quickly. My horse is almost well. I have killed the fistula and don't want to be without Absorbine in my house."

Absorbine is sold by leading druggists at $2.50 a bottle or will be sent by the manufacturers upon receipt of price.

A booklet on "How to treat a blemished horse" may be obtained by writing

W. F. YOUNG. P.D.F.
124 Lymans Building,
Montreal, Canada.

MARKETS.

THE HAY MARKET

Reports from all leading Maritime Province hay sections to the Maritime Farmer, are to the effect that hay has not yet been pressed and quotations on the new crop are not available. Farmers are busy with harvesting to consider hay pressing and owing to the serious weather conditions, it may be some little time before hay will be available. The Maritime Farmer is arranging for a supply direct from farm to farmer and prices will be announced as soon as they are received.

MONTREAL

Trade in Eggs Continues Brisk

The Canadian markets generally continue very firm with a steady upward tendency, although the advance in jobbing and other prices has probably not been quite as marked last week as during the week previous. Country shippers of all kinds report a brisk demand. The demand is keenest for the higher grades. Consumption both at local points and in the larger centres is reported good for the season.

Storage eggs are coming into more general use. Montreal has been gradually using more and more storage while this week for the first time Toronto reports noticeable movement of storage into consumption. The control of profit on storage is bound to have a stimulating effect on consumption. Many holders are reported to have disposed of their stock at the maximum allowed by the Food Board.

Shipments by egg circles in Ontario are considerably in excess of those at this time one year ago. Prices obtained at the week end range from forty-eight to fifty-one. In Prince Edward Island, the Egg Circles report some falling off in production with reduced receipts.

In the western provinces receipts are very light, and in Alberta particularly, the movement out of tsorage is assuming large proportions. The consumption of eggs at producing points is very heavy, due to harvesting and threshing operations. Some carlot movement continues, two cars of fresh seconds and one car of storage seconds reporting rolling at the present time. Vancouver is reported short of eggs, both storage and fresh, and dealers there have been active buyers on the prairie markets.

A very active business continues to be done in eggs for local consumption, and in consequence the tone of the market is very firm, but prices show no change. The receipts to-day were 463 cases, as against 2,921 for the same day last week, and 1,408 for the corresponding date a year ago.

We quote wholesale jobbing prices as follows:

Strictly new laid eggs.....58c to 60c
Fresh selected stock.....00c to 54c
Storage selected stock.....00c to 53c
Storage No. 1 stock.....00c to 49c

Poultry—Montreal reported, very heavy receipts last week, much of the stock showing poor or irregular quality.

Toronto receipts were also heavy, but they were better taken care of to better advantage. Considerable congestion occurred in Montreal, the larger dealers were loaded up and many of the smaller dealers had to dispose of their receipts at a loss. The situation in Montreal Monday had improved under an increased consumptive demand.

The movement into storage is increasing, particularly in Toronto. In the west, with the exception of Alberta points, the movement is very light. The lowest prices reported anywhere are from North Battleford, where chickens are available at twenty cents a pound. Receipts at Winnipeg are light and will probably continue so until after harvesting and threshing are further advanced.

The United States markets have been very unsteady following the exceptionally heavy receipts the previous week-end. The prices of chickens suffered most during the decline. Now that new price levels are being established, some dealers expect a reaction, as a result of reduced shipments and increased consumption. Dressed poultry have not been as seriously affected in price as have live.

The American navy is reported to be taking considerable dressed fowl off the market.

The following prices are being paid shippers in the country:

Hens, 5 lbs. each and over..27c to 28c
Hens, 3½ to 4 lbs.....24c to 26c
Roosters.....00c to 20c
Old turkeys.....00c to 30c
Young ducks, 4 lbs. each and over.....00c to 22c
Old ducks, fat.....00c to 20c
Broilers, 3 to 4 lbs., per pair.00c to 27c
Young geese.....18c to 20c
Milk fed chickens, 3 lbs. each and over.....00c to 30c
Chickens, 3 lbs. ea. and over 27c to 28c
Squabs.....60c to 65c
Old pigeons.....00c to 40c

There is a lot of poor thin poultry coming on the market and we must caution shippers that poultry must be plump and fat to bring the above prices. Thin or cull poultry not wanted at any price.

Potatoes—A weaker feeling has developed in the market for potatoes owing to the more liberal supplies that have come forward, and prices have declined 25c per bag, and the prospects are that they may possibly go still lower in the near future on account of the fact that dealers generally are well supplied, and also large consumers, consequently the demand was slow to-day in a wholesale jobbing way at $2.25 per bag of 90 lbs. ex store. Car lots of Green Mountains were quoted at $1.90, and Quebec white at $1.75 to $1.80 per bag of 90 lbs. ex-track.

New York, October 3.—Eggs, barely steady. Receipts, 11,583 cases. Fresh gathered, extras, 56c to 57c; fresh gathered, regular packed, extra firsts, 54c to 55c; do firsts, 52c to 53c; State, Pennsylvania and nearby western hennery, whites, fine to fancy, 68c to 73c; State, Pennsylvania and nearby hennery, browns, 58c to 60c; do gathered brown and mixed colors, 50c to 57c.

The Provision Market

Montreal, Oct. 5.

The trade in live hogs here to-day was quiet and the market was without any new feature to note. The tone of the market was steady with sales of odd small lots of selected stock at $19.50 to $20 per 100 lbs. weighed off cars. There was no change in the condition of the market for dressed hogs, prices being maintained with a steady demand in a wholesale jobbing way for abattoir fresh-killed stock and sales were made at 28.50 per 100 lbs.

The market for smoked and cured meats was without any important change to note, prices for all lines being steady with a fair demand for supplies for local consumption and a good business was done in a wholesale jobbing way with sales of 8 to 10 lb. hams at 37c per lb., 12 to 15 lbs. at 35c, and heavier weights at 34c, while breakfast bacon sold at 42c to 43c., Windsor selected bacon at 45c to 46c, and Windsor boneless bacon at 48c to 50c. The demand for barreled pork was slow and the market was dull, with car lots of American bean pork quoted at $43 per barrel, duty paid, short cut clear pork at $48, and clear fat back pork at $60.50.

The tone of the market for lard remains steady with a fair demand for supplies and a good trade was done in a wholesale jobbing way in Canadian pure leaf grades at 31½c per lb. in 20 lb. wood pails, and at 33c per lb. in 1 lb. blocks, while American compound lard sold at 27c to 27½c per lb. in 20 lb. wood pails.

The receipts of provisions to-day were 6 barrels porks, 73 packages lard, and 336 packages tinned meats.

Chicago, Oct. 3.—Provisions weakened owing chiefly to a setback in the value of hogs. On the declines, though, packers bought lard and ribs, presumably against shipping sales. Prices closed varying from $1 decline to 75c advance. Future quotations were:

Mess pork, per bbl.:—

	Open.	High.	Low.	Close.
Oct.	....	....	....	$36.30
Nov.	$38.00	....	....	36.80

Lard, per 100 lbs.:—

Oct.	....	$26.80	$26.60	26.65
Nov.	$25.50	25.80	25.50	25.70

Short ribs, per 100 lbs.:—

Oct.	....	22.65	22.17	22.65
Nov.	22.67	22.70	22.27	22.60

Cash prices closed: Pork, nominal. Lard, $26.95. Ribs, $22.50 to $23.25.

Millfeed and Rolled Oats

Montreal, Oct. 5—There were no further developments in the market for millfeed, prices being unchanged with a continued good demand from all sources for supplies, and an active business was done with sales of pure grain moullie at $68, feed cornmeal at $66, barley feed at $62 to $63, and mixed moullie at $55 per ton, including bags, delivered to the trade. Car lots of bran sold at $37.25, and shorts at $42.25 per ton, including bags, ex-track, and bran at $39.25, and shorts at $44.25 per ton, ex-warehouse, including cartage, less 25c per ton for spot cash. The condition of the market for rolled oats was steady with a fair trade passing and sales of broken lots of standard grades were made at $5.20 to $5.30 per bag of 90 lbs., Golden oatmeal at $5.75 to $5.90, and bolted at $4.25 to $4.50 per bag, delivered to the trade.

The Baled Hay Market

Montreal, Oct. 5—There was quite a little excitement in the market for baled hay today, when it was announced that the Government had offered to pay a bonus of $5 per ton for all the hay that dealers could possibly deliver to them for the next two weeks, and we now quote car lots of No. 1 hay at $25 to $26, No. 1 light clover mixed hay at $25 to $26, No. 2 Timothy at $24 to $25, No. 1 clover mixed at $23 to $24, and No. 3 timothy at $22 to $23 per ton ex-track here.

Butter Prices

Montreal, Oct. 5—We quote wholesale prices as follows:

Finest creamery.....49c to 50c
Fine creamery.....48c to 48½c
Finest dairy.....41c to 43c
Fine dairy.....39c to 40c

The following prices are being paid by the Commission for butter:

No. 1 creamery, per lb.....46½c
No. 2 creamery, per lb.....46c
No. 3 creamery, per lb.....45c

The Maritime Farmer Women's Institute Official Organ

At the recent convention of the Women's Institute held at Fredericton, "The Maritime Farmer" was selected as the official organ of the Womens Institutes of New Brunswick. "The Maritime Farmer" would be glad at any time to hear from any of the Womens Institute branches as to their progress. We would like to have items of general interest, believing that each branch can thus offer suggestions to other sections of the organization. "The Maritime Farmer" will place a section of the paper at the disposal of the members of the Womens Institutes.

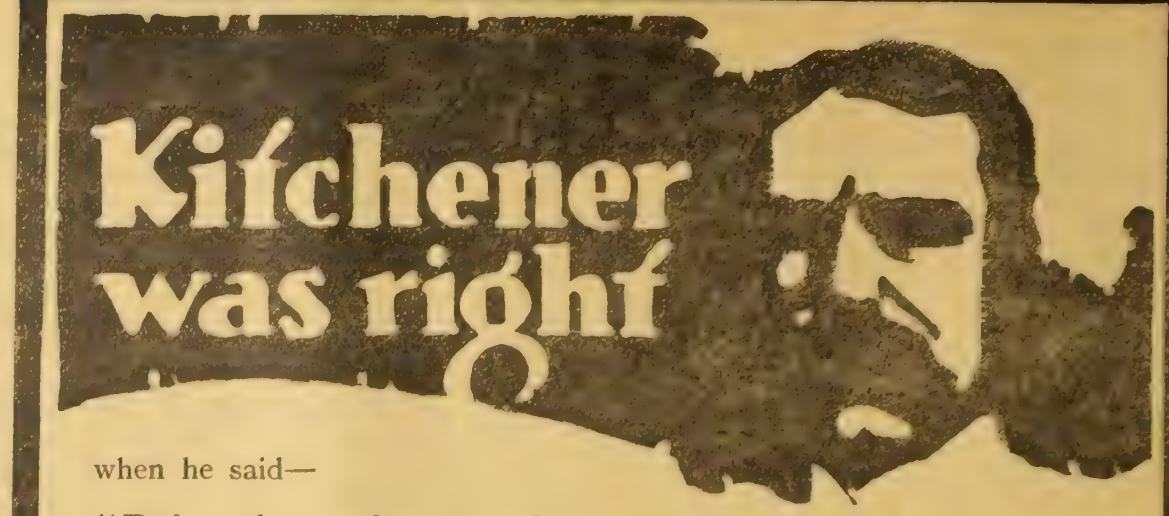
CO-OPERATION GROWS APACE IN MARITIME PROVINCES

(Continued on page 28)

lots of it, so they became not only willing but anxious to cultivate the business offerings of a united body of farmers.

And so it is with feeds and flour. Some day these commodities will be offered on the market as freely as before the war. Then, if the farmers will organize, they will find the millers of this country ready to look for their business, just as the fertilizer manufacturers are seeking to make sales for their lines. Every effort is being made to discourage this course. It has been represented to farmers that they should pay the long price, when a short price can be secured. Money has been refused by some banks, but the live-wire banks of the country are awake to the desirability of giving credit to careful farmers. And they are doing it, too. In other places feed prices have been cut temporarily to discourage co-operation, which if killed would result in a return to the old prices. It was the untiring fight of the Maritime Farmer which resulted in the prohibition of the export of mill feeds. It was the Maritime Farmer that brought about the licensing of feed dealers and the restriction of profits. But these advantages if won, can only be held by co-operation. The thing is to organize.

Much business can be done by farm organizations in a wholesale way. The car is your warehouse. Under the new regulations governing the agricultural societies of this province, societies may borrow money from chartered banks to buy fertilizers, feeds, flour, etc. They have extensive powers covering all their needs. So why not co-operate with your neighbor and save him and yourself money? Write the Maritime Farmer and we will send you further information.



when he said—

"Either the civilian population must go short of many things to which it is accustomed in times of peace or our armies must go short of munitions and other things indispensable to them."

NOW, the only way we can possibly live up to that obligation is by going without in order that our soldiers may have. For the money we waste is not money at all—it is equipment, clothing, shot and shell that are urgently needed in France.

By denying ourselves, therefore, we enable Canada to procure to the fullest extent the materials and labor which she and our Allies need for the successful prosecution of the war.

What happens when we fail to save?

A pull on labor by the Government in one direction and a pull on labor by the people in the opposite direction. Hundreds of millions of dollars are of no use to the country if goods and services can be secured only to the extent of eighty millions of dollars. So we must do everything in our power to release both goods and labor for the purposes for which Canada needs them.

WHETHER it be food, coal, wool, steel, leather, labor or transportation, the result in all cases is the same. Whoever competes with the nation by freely satisfying his own desires, selfishly appropriates to his own use that which is so urgently required for our fighting men in France.

For the sake of your country and the boys "over there," spend cautiously. Think of what Lord Kitchener has said, and ask yourself first, "Is this something I really need or can I do without it?"

Published under the authority of the
Minister of Finance of Canada

17

IN ROAD-MAKING FOUNDATION IS PRIME REQUISITE

The first road building of any importance that we have any knowledge of is in the history of the ancient Romans. Strange as it seems, too, that the first should be the most perfect, these old highways were of the most lasting construction that has ever been practised on any road of later date. The most celebrated of these ancient Roman roads is the Appian Way, begun 312 B. C. and completed 30 B. C. Portions of this splendid work are still used, and the whole 350 miles of its length was in excellent repair 500 years after completion. This is amazing when we recall how some of our modernly constructed pikes are out of repair in two years from date of the fulfilment o fthe contract. Should we not turn again to the lessons taught us by the ancients? The Roman roads were no doubt very costly to build, but when you count the years of service from them, that first cost dwindles into insignificance. But if these road builders, who were far ahead of their time, could build roads in France, England, Palestine and their own country, surely we can experiment on a few of our own that would necessarily have an outlay of a heavy first cost.

The foundation of a road is the prime requisite in its whole course of construction. If the surface of the road has no firm bed to rest on it will go to ruts and ruin in a short time. Water, the worst enemy of all roads, will enter and weaken the alreaddy faulty work and the freezing may reach the bed and contribute its bit toward destruction. The weight of wheels is felt to the extreme depth of the bed and causes wear on that part of the road where it should be only on the surface. The old time roads had foundations such as we use under many of our large buildings. The four layers of material used in the construction were sometimes 3 and 4 feet thick and each in turn laid in mortar or cement. They went down until they found a firm subsoil upon which to lay the foundation.

After a satisfactory foundation has been made, the builders ought not to be elated with their work until they have seen well to the perfecting of the drainage system. All roads built now have side ditches cut at various depths. Sometimes they drain the road to the required depth and sometimes—yes, too often—they drain only a few inches below the surface. If the ditches can not be cut deep enough at difficult places, such as in cuts through hills, underdrains could be laid parallel under same and this would carry away all surplus water and drain the foundation and also the subsoil. The subsoil must be dry if the road is to stand wear as it is intended. Subsoil draining is a troublesome task at best and there must be other factors brought to bear on the feat if it is to be successfully accomplished. If the foundation has been laid on firm ground and consolidated with the steam or horse roller and firmly set, and the next course laid and consolidated with the aid of water and some fine material, it will be almost impervious to water from the top. Then the subsoil can be drained with the side ditches and the underdrains. But if the coarse material is laid on a layer of mud or boggy ground all the work above will avail little and the water will come through from the top and the subsoil, which is usually of a nature to retain water, cannot possibly be drained perfectly by any method known.

A little more permanency, I think, will be most acceptable in our plan of road making. The strip of road that is from two to three miles long, when built require an outlay of money of such proportions that if the same amount would be expended in many

other undertakings would be an unquestioned inducement for stability.

If this is not done in the building of the road, it seems rather unfair to place blame on the contractor who is in the business for the money and wants to do th ework so as to just come inside the money. We probably would be much like him under the same test. Verily, this work could be done much more satisfactorily if every dollar spent on the contract would be placed for construction or material and not a large per cent. of it deducted for profit. I can't conceive of a plan how this might be done, but when the cause is urgent enough there will be a way. The Government is controlling our food and fuel consumption now and has taken over the railroads, and will likely take action on many other things. Now, if this is all right and good, which it is, maybe it will find it necessary to do likewise to the road building. The need for good roads is tantamount with the need of most any other improvement in our country.—R. A. JENKINS.

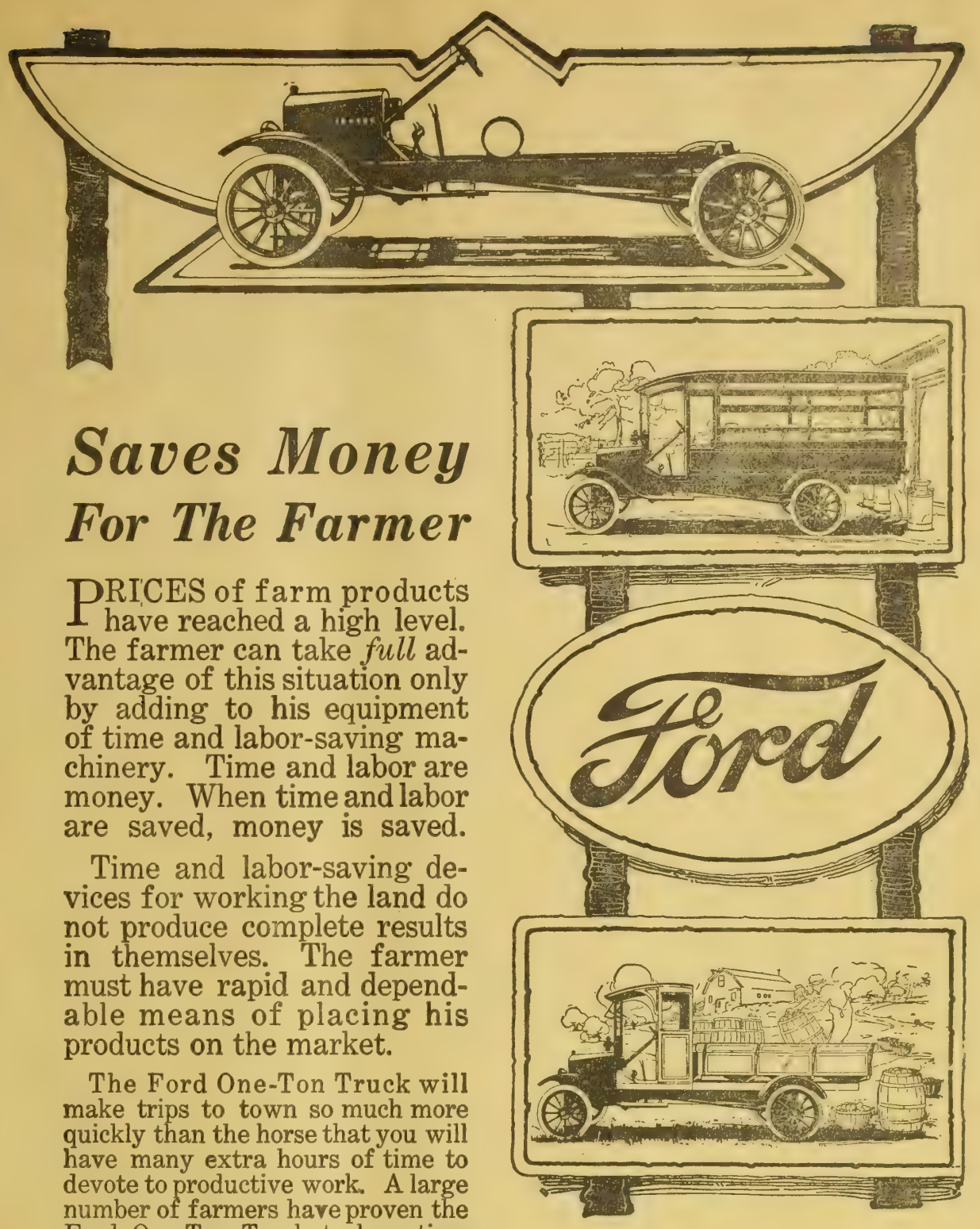
PAINT PROLONGS THE LIFE OF BUILDINGS

It is very important that the buildings on the farm be kept painted, and a good quality of paint should be used, even at this time of high prices. Probably more farmers have postponed jobs of painting this year than ever before because of the high price of paint and labor, yet they are making very serious mistakes in this matter.

Paint is high in price, but since it is so necessary to the preservation of frame buildings, to say nothing of the improvement in appearance, the work should not be neglected. For several years past lumber has been increasing in price and one should be very careful in preserving all the materials now put into farm buildings. There is a temptation now to purchase the cheaper grades of paint when decision to paint has really been made, but this is a very bad practice. The price of labor is such that it does not pay to hire high-priced labor and then put it on a job that must be gone over in a few years.

A good, high-priced paint ought to stand on the ordinary building at least six years; while a cheap paint must be renewed in a much less time, thus making a second cost for labor. In remodeling a house recently, a man repainted a coat that had been put on seven years ago, and he had at that time bought the very best grade of paint. The paint was not then in bad condition but the remodeling called for a new coat. In seven years' time unpainted boards would have shown much decay. A job of painting that will last eleven years is much more economical than a cheap coat that must be replaced in three years, and is far better than to leave a building stand without paint.

In a drive of some 170 miles, through rich farming districts, 60 per cent. of the farm buildings showed a need of paint, and in some cases houses, even, had been allowed to stand without as much as a prime coating of paint. The appearance of these farm homes was greatly marred by this neglect and close observation would have revealed a loss of lumber by decay. Paint has two very strong things to recommend it—it is a beautifier and also a preservative.



Saves Money
For The Farmer

PRICES of farm products have reached a high level. The farmer can take *full* advantage of this situation only by adding to his equipment of time and labor-saving machinery. Time and labor are money. When time and labor are saved, money is saved.

Time and labor-saving devices for working the land do not produce complete results in themselves. The farmer must have rapid and dependable means of placing his products on the market.

The Ford One-Ton Truck will make trips to town so much more quickly than the horse that you will have many extra hours of time to devote to productive work. A large number of farmers have proven the Ford One-Ton Truck to be a time and money-saver—have you?

Price (chassis only) $750
F. O. B. Ford, Ontario

Runabout	$ 660	Coupe	$ 875
Touring	690	Sedan	1075

F. O. B. Ford, Ontario
All prices subject to war tax charge, except truck and chassis
All prices subject to change without notice 83

FORD MOTOR COMPANY OF CANADA, LIMITED
FORD - - ONTARIO

CRIMINALLY CARELESS SHOULD BE PUNISHED

Canada is careless, criminally careless, in the matter of fire waste. The Monetary Times reports the fire losses for January as $2,688,556, an increase over January of last year of $777,896. Twenty-eight lives were also sacrificed.

It might have been expected that, with the rush of war work, the larger portion of this loss would have been in factories. This was not the case. By far the greater portion was in apartment houses and business blocks, hotels, and in reisdences. It is plain, therefore, that carelessness was the main cause. What this carelessness means may be illustrated by the conditions found by a fire inspector in one Canadian city. He found 68 defective furnaces or pipes too close to woodwork, 157 stoves not protected from woodwork, 140 cases where combustible material should be removed, 122 danegrous and defective chimneys, 46 ash piles too close to partitions, 127 electric wires in contact with nails, 80 defective boiler rooms and 40 cases where gasolene was improperly stored.

In addition to the above, conditions such as endangered life were: 133 obstructed fire escapes, 387 alarm gongs and 188 red exit lights out of odor, 90 fire escapes without direction pointers indicating where they were situated and 17 defective operating rooms in theatres.

All of the first hazards above-mentioned are contrary to law and it is time that the responsibility of maintaining such dangerous conditions should be brought home to those who are guilty of maintaining them. Section 247 of the Criminal Code of Canada makes it a criminal offence to omit taking reasonable precautions and using reasonable care to avoid danger to life. The necessary legislation is provided; it only requires enforcement.

In altogether too many cases fire destroys the evidence pointing to its cause; otherwise, many coroners' inquests would show more effective results than at present. As it is these inquests are very meagre recompense for the many lives which are sacrificed through lack of care.

I am the road
That carries the load
From countryside to town.
If you drag me true
I will pull for you.
And never mire you down.

You can usually tell a farmer by the hay he makes.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The address must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issue. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

FOR SALE—A few Sheep both sex of any popular breeds.—CEPHAS NUNN, Winsloe, P. E. I.

PICKLING ONIONS FOR SALE. H. E. GOLDING, Sussex, N. B.

FOR SALE.—Ayrshire Bull Calves, R. O. P. Ancestors, also pure bred Collie Pups A. A. R. MARGISON, East Centreville, N. B.

FOR SALE—Several litters of Yorkshire pigs for sale. Not registered. Prices moderate.—G. K. COLDWELL, Wallbrook, Kings Co., N. S.

FOR SALE—Two pure bred Lincoln ram lambs; one shearling ram.—C. W. PUGSLEY, Barronsfield, N. S.

FOR SALE—Registered Holstein heifer calves, six months old F W. C. NASE, Nerepis Station, N. B.

FOR SALE—100 dark furred Nova Scotia ranch bred mink I raise them and teach purchasers how.—DAVID A. McRAE, West Middle River, Vic. Co., N. S.

FOR SALE.—One Thoroughbred Reg. Shorthorn Bull 24 mos. old, also one pure bred Shorthorn Bull Calf 5 mos. old. WM. B. HAWKINS, Millville, York Co.

PORTRAIT AGENTS WANTED—Send for catalogue. Prints Solar and Bromide Finished portraits, convex or flat. Frames, glass and other supplies.—MERCHANTS PORTRAIT CO., Toronto.

LADIES WANTED to do plain and light sewing at home, whole or spare time, good pay, work sent any distance, charges paid. Send stamp for particulars. NATIONAL MANUFACTURING COMPANY, Montreal.

A RANCHER'S LIFE in Canada and Guide to Rural Industries, fruit growing, poultry keeping, ducks, geese, turkeys, pigeons, hares, goats, bees, flowers, etc. 25c post paid. By C. H. PROVAN, Langley Fort, British Columbia.

AGENTS WANTED—$1000 - You can make it in your county with our fast selling Combination Cooker. One salesman banks $388 55 the first month. Another agent sells 20 in two hours. Others cleaning up $10 daily. No capital necessary. Goods shipped to reliable men on ime. Territory going fast. Write quick to secure your field—COMBINATION PRODUCTS CO., Foster, Que.

Springbrook Farm Ayrshires !

PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females, all ages.

McINTYRE BROS.
SUSSEX, - - N. B.

Holsteins Hold All Championships

World's Record Price for Cattle—
Carnation King Sylvia....$106.000.00
World's Record for Butter, One Year—
Duchess Skylark Ormsby 1506.35 lbs.
World's Record for Milk, One Year—
Lutscke Vale Cornucopia 31246.9 lbs.
World's Record for Butter, Seven Days
Segis Fayne Johanna.....50.68 lbs.
World's Record for Milk, Seven Days—
May Echo Sylvia.....1005.8 lbs.
Canadian Record for Butter, One Year
Lady Pietje Canary's Jewel
1173.66 lbs.
Canadian Record for Milk, One Year—
Zarilda Clothilde 3rd DeKol
30467.0 lbs.

IF YOU CAN'T BUY A HERD, BUY A HEIFER.

Information from the Holstein-Friesian Association.

President, Dr. S. F. Tolmie, M. P., Victoria, B. C.
Secretary, W. A. Clemons, St. George, Ont.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B'

Ayrshire Cattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.
C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE CATTLE

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Holstein Bull For Sale !

The Holstein Bull, Mercena Bill Abbekerk, 34308, will be an outstanding attraction at the big Live Stock display at Fredericton on November 7th. He is about ⅞ white, straight with abundance of constitution and quality.

His Dam, the great Maple Grove Belle 2nd, 6540, with a three year old R.O.P record of 12.594 lbs. milk, containing, 523.77 pounds butter. A wonderful record of 12,000 pounds as a 2 year old, and was purchased by Fred F. Field, the owner of the $35.000 bull for a very large sum. Maple Grove Belle 2nd's Sire was a son of Tidy Abbekerk, one of the greatest producing and reproducing cows of the breed. Maple Grove Belle 2nd is bred along the same lines as Madame Posch Pauline 10291, the great champion Holstein Cow.

Mercena Bill Abbekerk is by Maple Grove Mercena Mercedes, a bull who never sired a tested daughter under 4% and who is one of the best bred bulls in Canada. Mercena Bill Abbekerk has for a full sister, Lady Belle Mercena, with 24 lb. record as a senior 3 year old testing 4%, a wonderfully persistent milker, capable of 20,000 lb. record. His half sister Dewdrop Colantha, has 15.45 lbs. of butter to her credit as a junior 3 year old. Another ¾ sister Abbekerk Queen Countess with over 30 lbs. of butter test 4.6%

His half brother, on his dam's side, heads one of Ontario's largest herds, where he has a long list of R.O.M. daughters.

This is a wonderfully bred young bull, fit to head any herd. Look him up at the sale.

BREMNER FARM,
Chatham, N. B.

EGGS FOR HATCHING !

Breed Standard bred poultry and more of it. Eggs or stock from every popular variety can be had through our Association.

Eggs from all heavy breeds such as Bramahs, Plymouth Rocks, Wyandottes, etc., $2.00 for 15 eggs.

Eggs from the lighter breeds such as Leghorns, Minorcas and Black Spanish, etc., $1.50 for 15 eggs.

Write us your Poultry wants.

Cumberland Co. Poultry & Pet Stock Association
E. F. McKIM, Secretary
Amherst - - N. S.

FOR SALE

Young Berkshire pigs! The large, prolific, easy-feeding kind. Also Jersey Bulls from two months to two years old. All at reasonable prices.

J. R. SEMPLE & SONS,
Truro, N. S.

Record of Performance Ayrshires

Two bulls fit for service. Ask about them. Young cows. Do you want any ? A pair of yearling heifers. A chance for someone to start easy. Write if you are interested,

THOMAS J. HAWKINS
"Lone Pine Farm" - - Stewiacke, Col. Co., N. S.

FOR SALE !

In Shorthorns we have to offer a number of roans, reds and whites in both males and females, from young calves up. It would pay those wishing to purchase to come and see our stock before doing otherwise.

Our spring litters of Berkshires are all sold. Are expecting several summer and fall litters. Parties wishing to purchase please get in touch with us.

L. M. ANDERSON, Sackville, N. B.

QUALITY BRAND
Rabbitry and Poultry Yards

Amherst, Nova Scotia
E. I. PEEL & SON, Proprietors

Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

Black Siberian Hares, the most profitable fur bearing animal living, price per pair...$25.00
Silver Siberians, price per pair..... 5.00
Belgians, price per pair 3 00
The above prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each
D. W. Young's stock, as good as money can buy.
White Leghorn 260 egg strain for hatching..... $2.00 per 15
White Leghorn, No. 1 exhibition stock for hatching..... $4.00 per 15
We Guarantee Safe Delivery. Terms Cash with Order

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,
AMHERST, - - - N. S.

Milking Shorthorns for Sale

We are offering some choice young Shorthorn bulls of the milking strain, ages 3 months to 15 months.

Also a limited supply of heifers, one and two years of age.

For particulars apply to

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett
Upper Sackville, - - - N. B.

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

W. H. HENRY
Shubenacadie - - - N. S.

Pure Bred Poultry !

Barred Plymouth Rocks, White Wyandottes, R. I. Reds, Brown Leghorns, and W. C. Black Polands Cockerels and pullets from good laying strain for sale at lowest prices. Satisfaction guaranteed or money refunded. Address,

H. M. McMONAGLE,
Box 652, Fredericton, N. B.

COST OF KEEPING WORK HORSES

Results of investigations on the cost or horse labor on the farm by the University of Missouri College of Agriculture show that, exclusive of depreciation, the average cost of keep per head of 75 farm work horses during 1912-13 was $92.33; of 113 head for 1914, $95.58 and of 132 head for 1915, $86.63, or an average for the whole period of $91.22. It was found that th ecost of feeding, as a rulemade up 72 per cent of the total cost of keeping a farm work horse. Farms on which the feed cost per head ran lowest (average $45.6⁵ per head) fed an average of 10.3 bushels of oats per head of work stock, while farms on which the feed cost per head ran highest (average $93.2⁵ per head) fed an average of 41.6 bushels of oats per head of work stock. The average amount of labor per horse for 1912-13, 1914 and 1915 was found to be 1,164 hours, and 1,127 hours respectively. The heaviest working of horses with the most liberal feeding or the lightest working with approximately a maintenance ration did not in general prove as economical from the viewpoint of horse labor cost as medium work on a moderate ration. From the viewpoint of economy, experience seems to warrant keeping sufficient work stock on a general farm, so that each horse will not have more than an aaverage of 1,400 or 1,500 hours work, but it will not warrant a large enough supply to make the average amount of labor per horse less than 800 hours. Records from the farms indicate that mules do more work on a given cost than either geldings or mares, and likewise geldings do more work than mares.

It is essential in a season like the present, when a good day's work from a horse is more important than it has ever been that the horse be kept in best possible condition. Farm work horses usually carry less flesh in summer than in winter and this is probably a safer condition for the hot weather. But while hard-worked horses are bound to lose flesh in summer time, they should not be allowed to get so thin as to lessen their strength and ability to do hard work. Work horses, like men, need plenty of good wholesome feed given at regular intervals. A mixture of corn and oats, one-half each, and good hay fed in sufficient quantities is as satisfactory under all conditions as any ration.

Work horses enjoy a cool lot or small pasture at night and do better there than in a hot and often dirty stable. The privilege of drinking frequently and in small quantities refreshes horses doing hard work in hot weather. Sore shoulders may be lessened by making certain that the collars fit the horses' necks properly, and by washing both the neck and collar each night.

At the University of Missouri it was found that mares nursing foals lost 77 pounds in weight between April 22 and May 20. They lost 44 pounds between May 20 and August 12, or a total of 171 pounds from April 22 to August 12. By December 30 these mares had gained 269 pounds which was a recovery from the effects of a hard summer. Mares not nursing foals, underwent about the same changes, but ate less feed during the summer.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESEDTRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 24. SUSSEX, NEW BRUNSWICK, OCTOBER 22, 1918. Number 2.

Report of Women's Institutes of New Brunswick in Sixth Annual Convention.

The Sixth Annual Convention of Women's Institutes of the Province of New Brunswick was held Oct. 1, 2, 3, at Fredericton, N. B., in the Provincial Normal School building of that city.

A splendid programme had been prepared by Miss Hazel mcCain, Supervisor of Women's Institutes for New Brunswick, a programme dealing with a wide variety of subjects, each touching some particular aspect of the world war, splendidly prepared addresses which were heard, we are sure, with profit by all who had the good fortune to attend the convention. Right here may we congratulate the Women's Institutes of New Brunswick on their good fortune in having so capable a leader as Miss Hazel McCain. One has only to talk a short time with Miss McCain to know that she is in the work with her whole heart and soul, and we are certain that under her capable direction and with the assistance of the very efficient young women of her staff, who have so ably demonstrated their ability this past summer, that the Institutes of N. B. will benefit and grow as never before.

Congratulations also to the Department on their choice of a lecturer for their W. I.'s, Mrs. J. W. V. Lawlor, a woman particularly gifted in bringing her subject before her audience in a most clear, concise, and intelligent manner, and one fitted by education to address her audience in either the French or English language. You have all heard her and we are confident have listened to her with pleasure and profited by the message she brought to you. We will hope that she will continue with the Department and that we will all have the pleasure of listening to her again.

Tuesday mornings meeting opened with a good attendance of delegates, about 100 ladies being present. After the singing of "O Canada", Hon. J. F. Tweeddale, Minister of Agriculture, gave the address of welcome. He extended a most hearty welcome to the ladies who had come to review the work of the past year, have an interchange of ideas, and organize their work for the future. He assured them that every hospitality, consideration and kindness would be extended by the citizens of Fredericton. He spoke of the noble work, the untiring zeal and indefatigable energy of the Women's Institutes in doing their part since the war began, of the noble part our women have played, the patience, endurance, skill of nurses and the self sacrifice of the women, placing them second only to our brave boys at the front. He spoke also of his pleasure in the growth of the Institute, the membership being now nearly 3,000 strong, and in closing invoked the guidance of a Divine Providence on the deliberations and arrangements for another years work by the Institutes.

Mrs. Frank Baird of Woodstock replied to the address of welcome in a most pleasing manner, thanking the Minister of Agriculture for his warm welcome to the representatives of the Women's Institutes of the Province. She spoke of the good that must come from the women of New Brunswick, who are handed together in order to improve the home and home surroundings. We women shall be known by what we do! What have we done? Have we all been true and steadfast? "Not to think of things remote and subtle, that which before us lies is the prime wisdom." Could the Women's Institutes have a more fitting watchword. She spoke of our duty to uphold the regulations of the Canada Food Board and see that they are carried out. Bonar Law has said "We must live more simple lives" and it is of the utmost importance that we should do so. We should hold the lines at home while our boys hold them across the sea. She said in closing "the purpose of this meeting will be fulfilled if we return to our respective homes with more zeal for the carrying on of the work of our homes and our churches, of the Daughters of the Empire, of our Red Cross and Soldiers Comforts Societies, and the Women's Institutes of our respective communities."

Miss Hazel McCain then gave the report of Supervisor. It showed a most encouraging and healthy growth for the year. Since last year fifteen new branches have been organized, 13 organizing in July and August, making a possible membership of 3,000. Many more centres both English and French are inquiring concerning organization, and the outlook is most hopeful.

Miss McCain reported 12 Institutes organized among our French speaking people, this department opened and conducted by Miss Alice Michaud. The receipts from 76 of the Institutes amounted to $16,288.60 and the expenditures to $13,620.19.

In response to an appeal from the Women's Auxiliary Army Corps, $1,000 were contributed by sixty of the Institutes. Many contributions have been made to the Y. M. C. A. Triangle Fund and Serbian Relief.

1,824 women and girls enrolled in the short course held at Woodstock, Fredericton, Sussex, St. John and Chatham.

The essays entered in the contest of 1917-18 have been judged, the prizes being awarded for "War Time Thrift and Economy" to Mrs. Paul Doyle, Jacquet River, Miss Vella Roy, Hoyt Station, Miss Elsie Brittain, Welsford, respectively; "Systematic House Keeping" to Miss Elizabeth Robinson, Sussex, Mrs. C. H. Spike, Andover, Mrs. M. F. B. Glen, South Tilley, respectively, and for "Advantage to a Community of Having a Womens Institute, to Mrs. Ferguson, Newcastle, Miss Marguerite Flett, Millerton, Mrs. R. C. Thompson, Chance Harbor, respectively.

Miss McCain told of a Wheat Substitute that has been compiled and is now in the press, and in a few days time will be available for all, also of a Milk and Meat Substitute bulletin, which will follow this. She also spoke of a movement now in progress in the West to make the Womens Institutes and similar organizations a National Organization, and expressed the hope that this convention should place on record as being ready and willing to unite with the Western Provinces in bringing about such an organization.

Miss McCain then closed her address with a stirring appeal to the women of New Brunswick to rouse themselves, and rising above all petty differences put their shoulder to the great wheel of progress of civilization and shove.

After the registration of the delegates and appointment of committees of resolutions, the morning session adjourned.

Tuesday, 2 P.M.

Miss McCain presiding in the absence of Mrs. F. O. Erb, Hillsboro, who was to have taken the chair.

Report of Institutes.

A vocal selection was then rendered by Miss Edna Baird of Fredericton, which was much appreciated by all present, followed by an address and demonstration of the "Influence of Music in Home and School" by Professore Frank W. Harrison, Instructor in Music in Public Schools of Fredericton. This paper was dealt with in an able and interesting manner, a very convincing argument in favor of General Instruction in the Rudiments of Music in Public Schools.

Tuesday, 8 P. M.

The evening meeting was presided over by Miss Helen Hutchings of Rothesay, who in a most tactful manner introduced the first speaker of the evening, Dr. W. S. Carter, Supt. of Education for New Brunswick.

Dr. Carter's address dealt with the "Relation of the Home and School" and won hearty applause from the delegates present. He spoke of the serious problems confronting the educational department of the province, and asked for co-operation in the educational work. He referred to the inroads made upon the teaching profession by war's demands, of the loss of competent instructors caused by our province not raising the salaries in keeping with the salaries paid in the West, out best material is going that way, and they are not to be blamed. Banks, offices and industrial plants are employing women at wages more inviting than are offered to the trained teacher, something must be done to make the work more inviting, more money is needed here, and provision must be made to secure it in order to have increased salaries.

He advised the formation of associations that would bring together the parents, and teachers in the country districts, and spoke in glowing terms of the Parent-Teachers Association of the towns of St. Stephen and Milltown in Charlotte County, and also testified to the excellent work of Women Trustees on the school boards. He spoke briefly on School Consolidation and School Sanitation, urging the women to look after the sanitary conditions of the school in their vicinity, and gave an interesting account of his recent visit to the open air and forest schools of Toronto.

Mrs. Frank Good then favored the convention with a solo, "When the boys come home", sung with great feeling, as she could so well do, having two of her own boys at present "over there."

Hon. W. F. Roberts, M.D., of St. John, was then called upon to address the meeting on "Medical Inspection in the Public Schools."

Dr. Roberts is the Minister of the recently established Department of Health by the Provincial Government, and his address was listened to with great interest. This address and also that of Professor Harrison, will be published in full in an early issue of the Maritime Farmer.

Wednesday, 9.30 A. M.

Miss McCain, in the absence of Mrs. James Porter of Andover, conducted this meeting.

Report of Institutes continued.

These reports showed a tremendous amount of work being done by the Women's Institutes of New Brunswick particularly along patriotic lines, although their community work was by no means forgotten. The many calls from the Red Cross, Halifax School for the Blind, Women's Auxiliary Army Corps, etc., had been generously responded to and the majority of Institutes were supporting one or more prisoners of war, and knitting an amazing number of pairs of socks. The account of work done and the interchange of ideas contained in these reports were very inspiring.

Miss Nutter, Demonstrator for the Department, reported 40 demonstrations held in the eastern and southern sections of the province, 36 on Wheat substitutes, 1 sewing, 2 canning, and 2 Home Nursing. A very creditable report.

Miss Michaud, also on the staff of the department and whose work lies particularly with the French members of our province, reported 13 demonstrations held, 9 in Madawaska, 2 in Kent, and 1 in Westmorland.

The remainder of the morning was devoted to work connected with the Red Cross and Daughters of the Empire.

(Continued on page 41)

The Plow, Plowman and Conservation of Power

How Plow Accessories and Their Adjustments are Regulated to Execute Their work in Masterly Style with Conservation of Power in the Team or Gasoline in the Tractor

Plowing is still the most laborious and expensive tillage or cultural operation on the farm. Civilization and the plow has been associated in all times. The earliest records of civilization and agriculture mention the plow. In its primitive form the plow was simply a forked stick from a tree, which was drawn, while plowing, by men or oxen in the earlier stages, and now by horses and tractors. The word agriculture comes from the plowing, and the letter "a" in the alphabet is derived from the forked stick, which has gradually been developed into the modern plow.

There are many different forms of plows and methods of plowing today. It is a part of the operations on a farm on which success to the enterprise largely comes. When to plow—in fall or spring—how deep, how wide for the different crops and soils, become questions of very great importance to agriculture, for on the way that soil is handled in the plowing depends the availability of plant food from the soil to the crop. As soils differe in texture and make-up, from light sand through several degrees of loam to stiff clay, the method of plowing differs. On sandy or light loam soils the plowing should be done when the ground is as full of moisture as possible, following soon after with a soil packer to conserve the moisture. On heavy clay, the plowing and tilling must be done when there is less moisture, or the ground will get into a baked condition, which becomes lumpy in cultivating, and plant food will not be available.

Adjusting the Coulter

The adjusting or "tempering" the plow to meet varying conditions is the chief art in skill in plowing, alike for the workmanship that gains a premier place in competition; for ease on horses or tractor that is doing the pulling; for comfort at work by the man who operates; and all the other qualities that make good for farm crop production or economy in labor while tilling the soil.

One of the chief accessories of the plow is the coulter, and the way the plowman sets it in position for the work, increases or decreases the draft and effects the operation of the plow generally. It should be so placed that its point is located about one and a half inches back of and half an inch above the point of the share, and it should slope back so that when in use it runs under the turning furrow instead of dragging through in a perpendicular position. When it is thus set the share lifts the soil slightly before it is cut by the coulter. If the coulter is set too far back, the share tends to tear the furrow from the landside before it is cut, thus increasing the draft. Its vertical position is also important since both the width of furrow and the running of the plow are thus affected. In general the coulter should cut as nearly as possible a vertical edge at the landside, at a point about a half inch to the landside of the plow point. **If a plow scores poorly and the coulter is set so as to cut about one inch into the land, the added width of furrow by its greater weight may cause the mould board to scour satisfactorily.** If the coulter is set so that it is twisted either towards or away from the land, it tends to act as a rudder and to cause the plow to climb and swing from side to side, regardless of the adjustment of the clevis.

Another form of coulter consists of a flat thin disc set to cut into the sod in the position usually occupied by the upright coulter. It is thinner than the knife coulter, offers slightly less resistance to the soil and, being sharper, cuts with less draft. It rolls over trash instead of catching it, but on stony ground is not a suitable arrangement as it rides over the stone and thus tends to jump the plow from the ground.

In plowing sod land which must be promptly prepared, the use of a jointer, or small plow, on the surface in place of the upright coulter is often used with advantage. It turns a small furrow about two inches deep on the edge of the regular furrow in such a way that when the main furrow is turned the edge is buried without any protruding grass or rubbish shown between furrows. Its use aids very much in the formation of a mellow seed bed.

For the covering up of long grass, surface rubbish or a cover crop, a drag chain is of great value. It consists of a short length of a common chain fastened at one end to the furrow clevis of the evener, and at the other end to the plowbeam just back of the coulter, with slack enough to allow the allow the chain to drag on the ground.

Adjusting the Plow

The ability of making a first-class piece of plowing lies more in adjusting the plow than in holding it to its work. The holding and the adjustment must be in unison, and the plowman must know how to accommodate the two together. In the walking plow it is a noteworthy fact that no two men can plow with freedom with the same adjusting. The points of difference in holding the plow has to be met with a different adjusting of some of the parts. The centre of the draft in the plow varies with the depth and width of furrow, as well as with the nature and condition of the soil, and shape of the plow. The hitch at the clevis can be adjusted either horizontally or vertically; but no matter where the hitch is, the line of draft will tend to straighten, that is to say, to assume a straight line when the horses apply their power. Thus, if the hitch has been made too far to the left side of the clevis on a right-hand plow, the end of the beam will swing to the right in order to straighten the line of draft, and as a result the plow will seek away from the land, and cut a narrow furrow. To offset this tendency, the plowman will have to lean heavily on the right handle, to keep the plow in position. On the other hand again, if the hitch at the clevis is too far to the right the plow will be swung into the land and take a wider furrow than it can turn, while the plowman will be forced to lean most of his pressure on the left handle.

On the vertical adjustment on the clevis if the hitch is placed too low it will raise the end of the beam and the plow will not keep its depth. If too high at the clevis, the plow will "ride on its nose" and tend to plunge too deeply into the soil. When all these adjustments are correct the plow will move straight ahead. Indeed in a mellow soil it will keep its place without attention from the plowman, except when encountering a root, stone or other obstruction. In no way is a plowman's skill more clearly seen than in the manner in which he is able accurately to make these adjustments.

The condition of the point and the cutting edge of the share also affects the service of a plow. A worn or rounded point should be renewed. It often happens that a reforged share though sharp, affects the draft of the plow as unfavorably as before sharpening, for the reason that it is warped out of line. A new ploughshare when set on a straight board should touch at the point, at the wing of the share and at the heel of the landside. At the centre is should be an eighth of an inch above the board. This curvature is called the suction of the plow and tends to keep the point in the ground and it shrould as far as possible be retained if the share is resharpened.

In testing the draft of a plow, it is found that 55 per cent. is due to the work exerted in cutting the furrow slice, 35 per cent. to the friction of the plow against the sole and furrow and only 10 per cent. to the work exerted in lifting and turning the furrow. Since half the power required to draw a plow is used in cutting the bottom and side of the furrow slice, it is highly desirable that coulters and shares should be in prime condition and properly adjusted.

This is necessary both for the conservation of horse power in the team or in saving gasoline in the tractor. **The competitor at the match as well as the everyday plowman at home cannot produce the plowing that is level, straight-furrowed and well turned if he is fighting all the time against his plow's adjustment.** The work that is easy on the plowman and power is

Move Feed Quick or Can't Get 'Em

This is Warning Issued from Railway Circles--- Transportation will be Taxed to the Limit

The feed question is one that keeps changing so rapidly that it is hard to follow it. There was a prospect that Cotton Seed Meal would find its way from the United States to Canada, but this hope, slight as it was, is now dashed to the ground. There will be no Cotton Seed Meal, or that is the way it looks. If this is so, then a very valuable feed has been cut off from the Canadian Market. Oil cake is scarce and the latest quotation is in the vicinity of $75 per ton, delivered at Maritime points.

Concerning Standard feeds, there has been a drop in the molasses grades of three dollars per ton and the new prices will be found as usual below. In connection with the purchase of mixed feeds, the Maritime Farmer would again caution buyers to insist upon getting the analysis of all feeds bought. Don't buy feeds simply because they are cheap from a dollar and cents standpoint. We know of a feed of ten per cent protein, which some dealers have been selling for from $55 to $58 per ton. Take ground special. It sells delivered for from $40.50 per ton f. o. b. St. John to about $42.00 average Nova Scotia points. Yet Ground Special tests 13.7 protein and 4 fat. Do you see the point? When you buy feeds, make the man who sells it to you produce the evidence that he is supplying you with something of value to you and your stock. Feeds are being offered which test as low as six protein and 2 fat. Just as well feed straw.

The Maritime Farmer has opened up new accounts with Agricultural Societies. We will get you feed, if you co-operate. We will send it to you at wholesale prices, that rule on the day you order. We have already sent out $75,000 worth of feeds to agricultural societies. We have saved them thousands of dollars. What is your society doing about it? Is it dead to its possibilities? If it is bring it to life and get in the co-operative game.

The prices of feeds, f. o. b. Fort William, to which must be added exchange and interest, are:

COMPARATIVE ANALYSES

	Ground Special	Ground Standard	Molasses Hog Feed	Molasses Dairy (about)
Moisture	12.80	13.13	10.78	11.00
Crude Protein	13.31	14.38	18.42	17.00
Ether Extract (fat)	4.00	4.92	6.49	4.5
Crude Fibre	18.81	10.32	14.00	15.00
Carbohydrates	64.11	67.96	55.58	62.00

	1918 Bran Average	1918 Midds. Average
Moisture	11.35	11.03
Crude Protein	14.91	17.09
Ether Extract (fat)	3.99	5.33
Crude Fibre	12.43	10.89
Carbohydrates	63.50	62.23

PRICES

Ground Special	$32.00 per ton
Ground Standard	$47.00 " "
Molasses Dairy	$42.00 " "
Molasses Hog Feed	$52.00 " "

These prices are all subject to change without notice. This is not a quotation, but is the last price the mill submitted to us.

Note high protein and fat content of Molasses Dairy feed.

the work that is of the greatest merit to competitor or industry.

A very common fault found in harnessing the team and one that affects the power, is where the straps over the horse's croup, that ar intended to hold up the tugs are too short, and an angle is formed when the horse pulls, giving a downward pull on the straps and a third of the animal's power is used to gall and annoy instead of being applied to the work on hand.

NO COTTON SEED MEAL

Recently the Maritime Farmer applied to the Canada Food Board for fifteen cars of Cotton Seed Meal with the idea of distributing it through Agricultural Societies. A short time ago it looked as if there would be a chance of getting some through, but the following letter from G. M. Morgan of the Export and Import Section of the Food Board, shows that there is little expectation of getting cotton seed this year. The letter is as follows:—

Ottawa, October 11th, 1918.

Dear Sirs:—

Re—COTTONSEED MEAL.

I have your favor of the 8th instant regarding the importation of cottonseed meal.

I would advise in this connection that the United States Administration have placed cottonseed meal on their conservation list and at the present time will allow no exportation. We are endeavoring to secure an allotment for Canadian Trade, if successful publicity will be given through the daily press.

Yours faithfully,
CANADA FOOD BOARD.
Per: G. M. Morgan
Export & Import Section.

James D. McKenna, Esqr.,
Sussex, N. B.

MIDDLINGS AND BRAN SCARCE

Bran and middlings are scarce. Some mills are offering as low as 50 bags of each to the car. Prices quoted wholesale are bran, New Brunswick points, $39.90; Nova Scotia, $41.10; Middlings, New Brunswick, $44.90; Nova Scotia, $46.10. War quality flour is $11.69 per barrel, in bags, New Brunswick and $11.81, Nova Scotia. Ontario wheat flours range 15 cents per barrel lower.

NEXT SUMMER'S HOG-PASTURE

It is not too early to plan for next summer's hog-pasture. Present and probable feed conditions force the swine feeder to consider home-grown foods. Pasture crops are economical at any time,—nowadays doubly so. Dry sows may bc maintained with very little, if any, grain on clover or rape pasture. The same may form the great part of the in-pig sow's summer ration. The latter should, however, be fed once daily with a few pounds of a light meal mixture, bran, shorts, ground oats, elevator screenings (Standard Stock Food), etc. The growing pig, after twelve weeks of age, will consume pasturage economically, and maximum rapidity of gains may eb expected with pasture and either the hand or self-feeding systems. The self-feeder-pasture-plan has proved entirely satisfactory on the Experimental Farms system and upon hundreds of private farms during the past summer. Labour and feed have been saved. Green food has replaced much grain, and hogs finished for market in less time.

For general recommendation, possibly clover comes first. With a self-feeder, thirty-five or forty three-months-old pigs per acre will be required to keep down the growth in a normal year. As the pigs grow they may be removed so that the pasture may not suffer, depending on the season.

Alfalfa, where it may be grown successfully, is equal, if not superior, to clover. It affords very early pasture and is particularly useful for the early litters.

Where no provision has been made for either of the foregoing leguminous crops, fall rye heavily seeded this fall will supply an excellent pasture next spring, available possibly the earliest of all. After it has been pastured off the land is still available for a second crop next year of, say, turnips, or a later seeding of rape.

A heavy seeding of barley, to be pastured when six inches hih, has given excellent satisfaction at Ottawa. Enough pigs should be placed on such pasture to keep it pretty well grazed at first, depending upon the season.

For general utility, rape is to be highly recommended. A crop of rape, ready for pasture after the clover paddock has been fairly well cleaned off, supplies a change of food at a time when the pig can economically use this crop and gives the clover aftermath a chance to grow for later pasture. There is no better commercial hog pasture combination for eastern Canada than clover and rape. Under normal condition it will carry more pigs for a greater period, and prove more palatable than possibly any other.

Many factors influence the hog-carrying powers of various pastures. Where a self-feeder is used and the pigs are from ten to twelve weeks old, do not be afraid of over-pasturing for a while at least, pasturing with rape. More grazing will be obtained from any pasture crop where it is kept down during the first few weeks of pasturing. Later the feeder's own judgment will indicate whether or not pigs should be removed. Hard and fast rules are difficult to frame and unlikely to apply in many cases.

SPECIAL FEEDING OF EWES AT MATING TIME PRODUCES MORE AND BETTER LAMBS

After buying and selecting the sheep for breeding, comes the feeding and treating the flofick so that their progeny will secure the highest attainment of profit. Selection is only a good first step in the business, it is the gentleman part of the work, what follows is the hard, persistent work to reach the ideal end.

The work in the fall which is followed by success in spring and summer is largely along lines of feeding. The first principle of breeding that all farmers either with small or large flocks of sheep or even dairy cows should constantly keep in mind, is that poor animals of any kind should not be set apart to breed if strong, healthy offspring are desired. Special feeding of ewes during fall hastens forward the period of tupping time and strong, early lambs is the result. Put the ewes on stimulating pasture and have a patch of rape ready for them. Before mating time rams and ewes should be well conditioned. It pays to give them extra feed, because they produce larger, stronger, earlier and thriftier lambs.

There are other advantages in having the ewes in strong condition when they are mated. A shorter lambing season is insured, as lambs are dropped more nearly together and there will be a larger number of them than if the ewes were in poor condition.

"Flushing" the Flock

When ewes are all in uniformly good condition they will come to the ram more regularly and be more likely to get in lamb. If the ram service is properly arranged, the majority of the ewes will get in lamb about the same time.

Considerable attention is required for lambing ewes, especially for those producing their first lambs. It is easier for their caretaker to look after them at lambing each day and night for a short time than to have them coming straggling along through several weeks. The lambs are then uniform in size and get well started under the same conditions.

After the lambs have been weaned, the ewes will be better to be kept on short pasture till their milk has stopped. After this, if there is good pasture to place them on, nothing more is ordinarily required; but if that is not available rape, rye or other forage crop should be provided. If none of these are obtainable a light ration of grain, presumably oats for most part, should be given. In commencing to pasture them upon rape or rye, an hour or two the first days will be ample till they become accustomed to the change.

Where flocks are treated by "flushing" or specially treated as described, the percentage of barrenness amongst ewes is less than with those untreated. These facts are well known to farmers who consistently practice the method of liberally treating their sheep during tupping time on their farms.

Producing Twin Bearers

Though a single early lamb has the best chance to get the early market and will command a good price, most farmers like to see twin lambs at birth. Nothing in breeding is more susceptible to the influence of heredity than fertility, and ewes and lambs of the twin bearing characteristic should be annually selected. To choose the females from the farm flock that is to be set apart for breeding is an easy matter where records of their breeding are kept; but very often the system falls down in selecting the ram. A large percentage of the ram lambs at exhibition and sale rings are single born. The strongest lambs are assuredly chosen and invariably the greater percentage of them are single born. They are readily bought for breeding purposes. This practice will nullify the work of the breeder who has chosen the twin bearing females to mate with him.

In order to get strong lambs it is preferable to have a sire one year old or over. For a flock of about 15 ewes a ram lamb is generally chosen, but that is the maximum number a ram lamb should get. A well developed rightly chosen ram lamb will give good results in a small flock and will be a mor eprofitable purchase when selling again. When the number of ewes run up to twenty and over then an older ram should be chosen. A ram that is a yearling or over, when running in the field with the ewes should serve fifty ewes. To do this he should be taken out and fed grain at least once a day.

"Flushing" the Ram

Flushing the ram as well as the ewes is also necessary to the prolificacy and surety of the ram. The best way to practice this is to shut up the ram during the day and feed him well, then let him run with the ewes during the night. It is harmful to the fertility of the ram to be left with the ewes all the time, especially if there is a fairly large flock of ewes. He may be so occupied with ewes in season that he will neglect to feed, and inability to produce progeny will be the result. More ewes are tupped in the night time than in the day. The ram will soon get accustomed to the usage and will seek the barn yard by day for the extra feed. They should be tame and are thus easily handled and caught in the field. Hand feeding is the medium of success in this work.

It is also of great advantage to the ewes to have them tame at this season. Dogs, especially the average mongrey type found around farms are as abomination to the sheep industry, and do more destruction to breeding sheep at tupping time than is generally believed or known. It takes more skill to train a sheep dog and to handle sheep successfully and quietly with him than the farmer with the mixed farm has time for, and the farmer will be acting in his own interest with the flock of ewes if he dispenses with the dog altogether.

Increase in Number of Lambs per Ewe

Many experiments have been tried out in sheep breeding countries proving the influence that treating the ewes at mating time, and the selection of twin bearers as of valuable utility to the sheep breeder in the annual increase of his lambs per ewe. In Scotland, the Highland or native breed of sheep are perhaps the lowest in fertility of any breed, usually not moer than one lamb per ewe. When shepherds began to take their sheep from the mountains in the fall and winter to feed on the more fertile alleys and flat lands by the sea shore, twin bearing became common. Flocks are divided into 400 ewes, the quantity that one shepherd can attend to, and with this size of a flock as a unit many experiments have been tried to test the fertility of flushing at mating time. Flocks that only produced 400 lambs on the average has records up to 640 or 160 lambs per 100 ewes.

From one flock 60 ewes were promiscuously selected and fed specially on rape and grain at mating time, and the result was that 50 of the ewes had twins and 4 of them had triplets. Flocks that had a record of one lamb per ewe were equally divided and treated differently, and the result of better feeding at mating time always raised the number and strength of lambs in spring.

Some flock masters in England carried out extensive tests with Hampshire sheep, and breeding continuously from twin bearers has resulted in flocks returning 200 lambs per 100 ewes. Ewes that are abnormally fat are not good breeders, and the same is true of undernourished ewes. Farmers who wish to have the flock of thrifty ewes must keep the flock in a thrifty uniform condition. When a ewe gets to the stage of over fat, and many breeds show this tendency, they should be dispensed with to the butcher.

Every endeavor should be made by the farmer with the small or large flock to have all ewes in the same condition. They should be as one unit coming into heat all at the same time. It is not at all a difficult matter to get to this stage of perfection in sheep management, it just requires a little close observation and sheep sense. No success will come to the sheep industry around the farm with haphazard attention being meted out to them, and farmers who are encouraged, by this idea, to go in for sheep, better get wise right now and prepare themselves for something different. There is money in sheep, but they only walk the golden hoof when properly handled.

TEN WAYS TO KILL AN ASSOCIATION

1. Don't come to the meetings.
2. But if you do come late.
3. If the weather doesn't suit you, don't think of coming.
4. If you do not attend a meeting, find fault with the work of the officers and other members.
5. Neve raccept an office, as it is easier to criticise than to do things.
6. Nevertheless, get sore if you are not appointed on a committee, but if you are, do not attend the committee meetings.
7. If asked by the chairman to give your opinion regarding some important matter, tell how things ought to be done.
8. Do nothing more than is absolutely necessary, but when other members roll up their sleeves and willingly, unselfishly use their ability to help matters along, howl that the association is run by a clique.
9. Hold back your dues as long as possible, or don't pay at all.
10. Don't bother about getting new members. "Let George do it!"

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

Subscription price $1.00 per year. This paper is sent to subscribers unless a definate order for discontinuance is given.

The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

OUR GUARANTEE.—With each subscriber to the MARITIME FARMER, we positively guarantee, while his subscription lasts, that no advertisement is allowed in our columns unless we believe that any subscriber can safely do business with the advertiser, and we agree to make good any loss which any such subscriber may sustain by trusting any such advertiser who may prove to be a deliberate swindler; but we do not undertake to adjust trifling differences between subscribers and responsible advertisers. To take advantage of this guarantee, written comeplaint must be made to the publish er within one week from the date of any unsatisfactory transact ion, with proof of the swindle and loss, and within one month from the date when the advertisement appeared, and the subscriber must prove that in writing to the advertiser he said :—"I saw" your adv. in the MARITIME FARMER.

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NOTICE TO ADVERTISERS.—Changes of ads. should reach this office one week before date of issue, in order to insure insertion.

RECEIPTS FOR FARMER SUBSCRIPTIONS

The Maritime Farmer, instead of giving you one receipt in the year for a paid subscription, sends you 24, or one every two weeks. You will find it on the GREEN COLORED LABEL on which your address appears. The date printed thereon is that on which your subscriptic n terminates. If on payment of your subscription the date is not changed within two weeks, please notify us. No other receipt will be sent.

OCTOBER 22, 1918.

DATES OF ISSUE.

Octoebr 8-22
November 5-19
December 3-17

PROFITING BY INTERCHANGE OF IDEAS

Delegates from the New Brunswick Women's Institutes met in convention recently at Fredericton. Miss McCain and her capable staff had an interesting program prepared, with ample allowance for discussion. The subjects dealt with by the respective speakers as reported elsewhere in this issue, were replete with ideas that the various delegates will do well to communicate to their home institutes.

Not long ago, a writer in one of our valued exchanges, writing in the personal pronoun said: "Suppose you have a dollar and I have a dollar. If I give you my dollar and you give me your dollarfi we will each have a dollar and neither one of us will be any richer than we were before we made the exchange. If, however, you have one idea and I have one idea, and we exchange these ideas, then you will have two ideas and I will have two ideas. We will both profit by the interchange." Delegates came to the Convention to bring ideas from their respective districts and to glean ideas from delegates from other parts of the province. They have personally benefitted by the interchange and have returned to their homes where they will impart to their co-operators in the "For Home and Country" cause the good things they learned from delegates and institute speakers at Fredericton.

During the Convention it was announced that in future the Maritime Farmer would be the official organ of the New Brunswick Women's Institutes. In assuming this responsibility, the Maritime Farmer is always ready to have its columns serve as a central, where the various institutes may exchange ideas that will be helpful to all.

May we suggest that each institute in the province appoint one or two of its members as Press Committee, whose duty it will be to forward the official organ for publication, items of general interest from their Institutes, as well as interesting papers that members of their institute may prepare from time to time.

Communications of this nature should be addressed to The Maritime Farmer, Sussex, N. B.

May we also suggest that the various Institutes encourage their members to whose homes the Maritime Farmer is not now going, to become subscribers, so that they too may profit by the interchange of ideas twenty-four times a year, which the columns of the Maritime Farmer afford.

Although the Maritime Farmer has been going to many of the best farm homes of Maritime Canada fo rover twenty years, it still maintains its popularity and carries on useful mission. Urban as well as rural homes, are now-a-days interested in the farmers' problems. The campaign for Increased Production necessitated by war conditions, has popularized the farmer's occupation to the extent that the foremost women of our country do not consider it degrading to toil in their war gardens or be able to talk intelligently to any of the questions relative to the production of food commodities. Men or women, who do not care to acquaint themselves with the problems that confronts God's partners, the men who are feeding our soldiers and our Allies, are positively outclassed and not up-to-date.

Members of Women's Institutes who reside in towns and cities, even if they are not directly interested in farming, will find interesting matter in the Home Department of the Maritime Farmer, and may broaden their general knowledge of food production by perusing our other departments.

THE MARITIME SEED FAIR

Growers of seed grain in the Maritime Provinces will have an excellent opportunity to bring the quality of their seed prominently before the public at the big Maritime Seed Fair which will be held in Summerside, P. E. I., early in December. A great deal of excellent grain was damaged by the frequent rainstorms that drenched the Maritime Provinces during the month of September. There will be considerable discolored grain and consequently the farmers who have been fortunate enough to have had their grain harvest completed before the wet season set in, will find it to their advantage to clean and grade their best grain and save ti for seed purposes.

It pays to advertise. The best pleace to advertise seed grain is to make entries at the seed fair and then boost the goods through the columns of the Maritime Farmer. Just because a farmer never exhibited seed grain is no reason why he should not make an exhibit this year. New beginners have frequently carried off the first honour at some of our seed fairs, in competition with some of the best seed selectors of Maritime Canada. It is a good idea to pick out several one hundred grain samples of your grain and get an authentic germination test. If your seed grain looks well, is free from foul seed, and you get a high germination test, let the public know that you have some for sale, and you will experience no difficulty in disposing of any surplus you might have. If you have not received a copy of the Maritime Seed Fair prize list, send for one without delay. Friendly competition at the Seed Fair will tend to create a reputation for good seed, and having created such a reputation, see to it that it is maintained by honest dealing.

A RAINY DAY OBSERVATION

It's raining, has been raining all night. A raw cold wind savoring of the breath of winter is blowing over the fields. Our train is bowling along through fields that are gradually changing from the green of summer to the faded greenish brown that forecasts the approach of winter. Cattle and horses are seen huddled in sheltered nooks, doing their best to protect themselves from the driving rain storm. Here and there a solitary sheep is seen tethered in the open fields with no protection from the stormy blast. Behold, these are the flock headers, seggregated from the ewes until the arrival of the breding season. We have often wondered how any humanely inclined farmer can rest in his bed at night, when conscious of the fact that one of God's creatures is so confined that it cannot protect itself from the elements.

WHO IS WHO SHOULD SHOW REASONS WHY

It is quite often the case that when a man has made a failure at carrying on a business for himself, he seeks an opportunity to try and carry on a business for the public, by wanting to hold public office. But it has often proven a fact, that a man who cannot succeed in his own private enterprises will not make good at carrying on business for the public. Unless a political candidate can point to some success he has made in his private life, he should not expect the public to support him in an effort to hold public office. How can a man be more efficient in handling the public's business than he has been in handling his own?

POTASH IN SASKATCHEWAN

A geyser 30 feet high spurts in the centre of the lake south of Prelate, in which a big deposit of potash was recently found. The scene of the deposit is a large old lake bed among the hills 32 miles due south of Prelate, Sask. There is a crystal formation to a depth of at least 42 feet, this being the extent to which tests have so far been made, and covers an area of nearly 1,000 acres. It is as solid as ice, and requires an axe to cut through the top crust, which is about four feet in thickness. Below that the substance is softer and can be dug with a spade.

The lake bears the appearance of a soft old slough and waders are needed to reach the solid formation in the centre. There ar several smaller deposits of the same mineral near the larger one and claims are being registered every day.

For some years past the settlers in the vicinity have been hauling crystals home for stock, and they say that in the winter a geyser spurts out of the centre of the lake to a height of some 30 feet, and it is so warm that the steam forms a continual fog over the surface of the lake. A visitor put an axe down one of the spring holes and in the space of a minute the axe became very warm, indicating the existence of a hot spring beneath the surface.

Inspector Tait, of the provincial police force, speaking of the recent discovery of potash in the Maple Creek district, stated that people there had practically tented on the ground during the first of the excitement. Hundreds of prospectors were on the land digging to get samples, which are being sent for analysis.

One report the inspector heard was to the effect that over 6,000,000 tons of practically pure potash was to be found in one section of the territory just east of the original discovery.

* * *

A rainy day on the farm is a very good time to sweep the cobwebs and sweeten up the inside of the hen house and the barns with whitewash and some good disinfectants.

* * *

The man who doesn't stop to figure on whether or not his business is paying, very presently doesn't have any business on which to figure.

* * *

The appetite of the animals is a fair guide as to how much and the kinds of feed necessary for best results.

REPORT OF WOMEN'S INSTITUTES OF NEW BRUNSWICK IN SIXTH ANNUAL CONVENTION

(Continued from page 37)

Lady Ashburham gave a most interesting review of the work of the Red Cross in this province, showing the tremendous amount of work accomplished during the year and what the plans were for the future.

Mrs. R. F. Randolph, President of the I. O. D. E., told of the work being done by that great body of workers which she represented.

Miss Edith Staples of Marysville entertained the convention with two very delightful vocal selections.

Wednesday, 2 P. M.

Mrs. A. J. Ferguson, Newcastle, presiding.

Reports of Institutes continued.

An excellent address was given on "Food Value of Milk" by Mr. Frank Hearns of London, Ontario, which was highly instructive.

Miss Van Wart, Demonstrator, then read her report, after which Miss Helen Van Wart rendered a solo which received well merited applause.

Mrs. Lawlor then addressed the meeting on her work with the different Institutes, her tour lasting four months. She spoke particularly on "Reconstruction after the War", and laid great stress on the need of making preparation for that reconstruction which must come.

She spoke of the organization of the French Institutes, and spoke of the Colored Institute being a thing of the near future. We are living in times of big things, our view point should also be broad.

Mrs. Lawlor hoped that in time the kindergarten would be included in our curriculum, and said in closing, our first duty should be to Women's Institutes, it included all other lines of work, its success depending on each member and each individual Institute.

An invitation from Mrs. Randolph to inspect the I. O. D. E. rooms was then extended to the convention.

Miss Jean Peacock then gave a talk on "School Lunches" urging the duty of the parents to see that their children get the proper kind of lunches to establish a good healty body and mind, train the taste or mal-nutrition the result. Make the lunch box attractive, lining it with a paper napkin, with an extra one to put on the desk. Bake bread for variety in round tins, preferably dark breads wtih a few dates or raisins if possible. See that each day there is something hot included in that luncheon. See that each day's luncheon includes one article containing protein, such as meat, fish, nuts, cheese, eggs, beans, milk. One uncooked article, orange, apple, celery, lettuce, radish, etc. Some cereal product, cornmeal, bran, oats, or rye in the form of bread, and of course butter is very essential to the welfare of the growing child. Then some sweet cookies, cake or milk chocolate, always exacting the promise to eat the sweet last, and last the beverage, cocoa, milk or fruit juice. Have a Thermos bottle for this if possible.

This was a very helpful paper to those mothers who have this problem of the school lunch to face five days of each week.

Wednesday, 8 P. M.

Mrs. Lawlor presiding.

Music by Rowan's Orchestra as on the previous evenings, which was greatly enjoyed by all present.

The first on the programme was an address on "Vocational Training" by Capt. Boyd of Fredericton, who gave all present a very clear idea of the splendid work being done for the returned soldier, who now coming home finds his whole life must be reconstructed along hitherto unfamiliar lines, and how they are helped by this department to help these brave unfortunates to help themselves, and of the grateful response given to their efforts by these soldiers.

Miss Margaret Lynds, Instructor of Elecution at the Normal School, then gave a much appreciated reading, one highly amusing and in which she showed exceptional talent in portraying the different characters, but it was her encore that will live with us, the little pathetic piece which she rendered so beautifully, which brought the tears to many eyes and held such a lesson for us all.

Dr. W. C. Kierstead then gave a masterful address on "Food Control". Dr. Kierstead needs no introduction to the readers of the Maritime Farmer or throughout New Brunswick as a whole, enough to say that he brought his message and forced it home in such a manner that there could be no doubt in the minds of his hearers that if they did not co-operate to the letter of the law with the Canada Food Board, that they were no less slackers than he who turns his back on the field of battle.

Thursday, 9.30 A. M.

Miss McCain presiding.

Reports of Institutes finished.

Report of Resolution Committee. The resolutions as follows received and accepted.

Resolved that a committee be sent to petition the Provincial Government that one lady member be placed on the Censor Board for this province.

Resolved that the Medical Inspection of schools as outlined by Hon. Dr. Roberts be given the hearty approval of the meeting and that the policy of having women on the health boards of the province, be carried before the government.

Resolved that petition be carried to the Government that women be placed

on the school boards in rural districts, making it possible for other women as well as ratepayers to take these positions.

Resolved that women be placed on governing boards of hospitals. This to be put before the government.

Resolution passed thanking both Provincial and Dominion Governments for enforcing Prohibition.

A resolution was passed that the women should show appreciation of the Food Board and co-operate with it as much as possible.

Mrs. Martha Harvey of Fredericton then moved a resolution that a Dominion as well as a Provincial organ be authorized.

This caused much discussion among the various delegates.

After the singing of the National Anthem the Convention adjourned for another year, the place of meeting to be announced later.

During the Convention it was announced that the Maritime Farmer was now the Official Organ chosen by the Department for our New Brunswick Women's Institutes.

After the session closed the members were all invited to the Experimental Farm to inspect the building and grounds, and also to go through the new convalescent home, which proved very interesting to all.

The Sixth Annual Convention of Women's Institutes is over but we are confident that each delegate has returned home with fresh inspiration and a more firm determination than ever to live up to Kitchener's last signal message to "Carry On."

LIMING FOR CLOVER

In bulletin No. 213 of the Indiana Experiment Station, the following summary is made concerning the value of lime for growing clover:

Clover will not thrive on acid soils.

Liming is the only practical means of correcting soil acidity.

Three-fourths of the soils are acid and in need of liming.

About one-fourth of our soils is so very acid that clover fails almost every time ti is sown.

Aout one-half of our soils is of slight to medium acidity and clover will fail whenever the weather conditions are at all unfavorable.

Only about one-fourth of the soils is well enough supplied with lime to enable clover to develop properly.

A liberal application of pulverized limestone or some other form of lime is needed to insure a clover crop on any acid soil.

Wherever clover fails to thrive, the soil should be treated for acidity.

If the soil is acid enough to need liming at all, at least two tons per acre of ground limestone or its equivalent in other forms of lime should be applied.

Ground limestone may be applied at any time, but the best plan is to apply it on plowed ground and disk it into the surface soil.

Lime will often produce immediate increases in grain and other crops, but the greatest benefit derived from it comes through increasing clover and other legumes in the rotation.

Following a good clover crop, it is possible to grow good grain or other crops.

The greater the proportion of legumes that can be turned under, either directly or in the form of manure, the easier it will be to maintain the fertility of the soil.

Lime is not a fertilizer. Manure or fertilizer, or both, should be used in addition to lime.

On seven experiment fields in different parts of the state, ground limestone has produced crop increases worth from $10.50 to $67.70 per acre per rotation of corn, wheat, and clover. The average net profit has been $6.78 per acre per year, and $2.68 per dollar invested.

BIG LIVE STOCK CONSIGNMENT SALE

Will be held at Fredericton, Thursday, November 7th. Many Animals will be offered. Poutlry, too.

The New Brunswick Department of Agriculture has arranged for a big Breeders' Consignment Sale of horses, Shorthorns, Ayrshires, Holsteins, sheep, pigs and poultry, to be held at the exhibition grounds at Fredericton, on Thursday, Nov. 7th. The sale will commence at 10 a. m. The idea is a new one, so far as this province is concerned. It will bring together the best animals to be found in the representative pure bred herds of the province. Horses, pigs, sheep and poultry, all stock from the leading dealers of the province, will also be offered. Among the breeders whose herds will be represnted are A. Snowball, Chatham; L. M. Anderson, Sackville; John A. Hughes, Petitcodiac; McIntyre Bros., Sussex; Dr. J. E. Hetherington, Cody's; Walter Allison, St. John; Harding Bros., Welsford; Fowler Bros., Welsford; Alphonso Kelly, Fredericton and H. C. Jewett, Fredericton. Nothing further need be said as to the quality of the stock that will be offered. The breeders ar known in every part of the Maritime Provinces and their animals have won many prizes in Maritime Fairs. The bidding will be genuine and the sale will be conducted by two competent auctioneers and will be managed by a ring committee of three, who will have absolute charge. There will be no by-bidding allowed. Already ninety animals have been entered for sale and this number will be increased before the date of sale. The stock will be open for inspection the day previous to the sale.

Inorder to reduce the cost of attending the sale, the department has arranged for one and one-third fares from all stations from which ten or more wish to attend the sale. Every effort should be made to arrange for parties of ten.

If the sale of 1918 is a success, it will be made an annual affair. The adoption of such sales should serve to encourage breeders and at the same time give the public an excellent opportunity to get good stock.

Don't forget the date, Thursday. November 7th.

FERTILIZER FUTURITIES

The crop fertilized never consumes all the plant food given. The soil always and invariably holds part back for future crops, as every observing farmer knows who has seen the spots of larger growth in the small grains or grasses which have followed a hill-fertilized crop of corn.

Fertility tests conducted at the Ohio Experiment Station illustrate this point. For instance, in the five-year rotation on the home farm at Wooster, one plot is fertilized only on the wheat crop, and the wheat has given a 20-year average increase for the treatment of 13.72 bushels per acre. The clover following the wheat has been increased by 588 pounds, the timothy following the clover by 210 pounds, the corn following the timothy by 7.44 bushels, and the oats following the corn by 3.64 bushels. In other words, 60 per cent of the value of the total increase has been found in the crop receiving the fertilizer, and 40 per cent in the four crops which ate at the second ,third, fourth and fifth tables.

MENDING WITH WIRE

In mending with wire it is important that the last round be not twisted too tight or it will bear most of the strain and break under service. A better plan is, if mending a chain for instance, to run the ends around the side of a link in opposite directions and twist down against it.

In lacing a belt you usually tuck the ends away until they bear no strain. Yet belt lacing will adjust itself much better than fence or baling wire. But if it is wire lacing you must still eb careful not to get too much strain on the last strand. Twisting wire is always a tightening action such as you desire when you make a hose clamp of it.

HOUSING BINDER AFTER HARVEST

Now that you are through with the binders fo rthe season, be sure that they are not left in the field, but are put away in proper shape. The binder canvases should be cleaned, broken slats and straps noted, and spread out in the sun so as to eb sure they are thoroughly dry, then rolled into compact bundle and hung from the roof or a joist by wire, so that mice and rats cannot get to them. The sicklebar, after having been removed, should be placed in the wooden guard in which it was shipped and hung on the wall out of the reach of children and livestock. All bearings should be oiled with a heavy oil, and the broken part or parts needing attention before next season's use should be noted on a card, which should either be fastened to the binder seat or hung in a particular place in the repair shed. The binder should then be placed in a good dry shed where it will not be exposed to rain or sun or drifting snow, nor where it will serve as a chicken roost.

FRANK F. JOSLIN APPRECIATES THE MARITIME FARMER

Writes under date of October 5th, 1918. "Your paper is getting better all the time. I might add that I have purchased several head of pure bred stock from your advertisers."

Mr. Joslin also includes the name of a new subscriber to "The Maritime Farmer" which expresses in a very tangible way his appreciation of this paper. His letter should furnish a hint to live stock men who do not advertise in "The Maritime Farmer".

HORTICULTURE

SELECTION AND WINTERING OF BIENNIAL VEGETABLES FOR SEED

By the term "biennial" vegetable is meant one which takes two seasons to produce seed. The vegetable must be stored over the first winter and replanted, for seed production, the following spring. Some well-known vegetables of this class are beets, cabbage, carrots, celery, parsnips, salsify and turnips. Seed from these can easily be grown in Canada if the vegetables to be so used aer kept in good condition over the winter. Some information on the seelction and storing of roots and plants intended for seed production is herewith given.

Unless a rigid selection is made, each year, of specimens which are true to type it will not be long before a large proportion of the crop will be not true to type; hence great care should be taken to select well-shaped, medium-sized roots, typical of the variety of beets, carrots, parsnips, salsify and turnips, firm-headed cabbage true to type, firm stalked ad disease-resistant plants of celery, and firm, shapely onion bulbs. If this is done and varieties are kept far enough from others so that they will not cross the crop from Canadian grown seed should compare favourably with imported seed in regard to purity, as it does in other characteristics.

The methods of wintering vegetables for seed will vary in different parts of Canada but in most places it will be necessary to give them some protection. When possible, it is best to store them in a frost-proof cellar. But, if necessary, the vegetables mal be stored outside, both in small and in large quantities, except in the case of onions, which must be kept dry, and stored in a cool place where there is little or no frost.

Cabbage.—One of the simplest and successful methods of wintering cabbage at Ottawa has been to place the plants side by side, heads up, in a trench or pit, the heads aout six inches below the level of the ground, the trench being refilled with soil to the bottom of the heads. About a foot of straw is placed over the heads and, when cold weather sets in, from six to eight inches of soil is put over the straw. Foerst leaves, no doubt, would prove as satisfactory as straw. When winters are not very severe or where a heavy covering of snow is fairly sure, the cabbage may be simply heeled in with heads above ground and the latter covered with leaves or straw just before severe frosts. There should be only a light covering at first to help prevent heating and rotting, and later a heavier application when the weather becomes cold.

Celery.—Good results have been obtained at Ottawa by wintering celery for seed purposes as follows: The plants are set in a trench deep enough so that the tops of the celery come even with the surface of the ground. The plants are set close together in the row, but each row is separated by soil. Before severe frosts, the plants are covered with a heavy layer of straw and when cold weather sets in with about fifteen inches of soil. In 1917 nearly every plant came through the winter with the heart in good condition, which is all that is necessary to ensure good crops of seed.

Beets, Carrots, Parsnips, Salsify and Turnips.—When harvesting, the tops are cut to within two inches of the end of the specimen, thus leaving the central shoot. This is better than cutting off the leaves close to the root. The pit in which good success has been obtained in wintering roots at Ottawa is made as follows: A hole is dug of the necessary dimensions, six inches deep, in a well-drained place. Poles are laid on the ground and covered with boards, leaving about five inches of air space under the flooring. A sink hole three feet deep is dug six feet away from the pit. An inverted trough-shaped pipe connecting this hole with the air space under the pit gives a chance for air circulation and drainage of any water that might soak in. The roots are put in bags to seperate them better, though his is not always necessary, and piled three tiers high, running to a peak. A peaked roof of boards is put over the pit, high enough above the bags to allow about fifteen inches of straw to be packed in between; over the roof is put a light coat of straw and the fifteen inches of soil. A vent hole nine inches square is left in the centre of the roof. Before hard frost the sink hole is filled with straw and covered with boards and twelve inches of soil. The covering with soil should be deferred until cold weather sets in to avoid danger of heating, and during the winter the temperature inside the pits should be taken if the pits are large. In many places parsnips may be left in the ground over winter and transplanted in the spring when better results will be obtained than if pitted, as they are very hardy.

THE STORAGE OF POTATOES

The losses from improper storage of potatoes are of far greater economic importance than is generally realized. These losses are brought about by a variety of factors which may be grouped in three divisions, e. g. Physical, Mechanical and Pathological.

The chief loss from physical factors is brought about by the storage of immature stock. Potatoes that are to be stored should be thoroughly ripe, that is, the stalks should be dead, and the tubers should adhere firmly to the stems. Potatoes may have their stalks prematurely killed so as to resemble a natural death by being attacked by late or early blight, rhizoctonia, the flea beetle or potato bug, but upon examination the tubers under such plants will be found immature and unfit for best storage results. Frost bitten and sunburned to also come in this division.

The mechanical factors that bring about loss in storage are chiefly brought aout by careless handling of the crop at harvest time, such as broken, cracked or chipped tubers due to improper digging and rough usage in gathering the crop. The slightest injury to the skin of the potato lays it open to invasion of myriads of decay producing spores, which, when given the proper conditions will rapidly spread decay through the entire lot.

Under the pathological factors come the tubers affected by disease. Undoubtedly the late blight (Phytophthora infestans) is the most common, as well as the most destructive. Tubers affected by this disease are almost certain to decay in storage; nor is this decay confined to the diseased tubers, but spreads rapidly to the healthy ones, unless preventive measures are employed, and perfect storage provided.

The decay of potatoes in storage may be caused by a number of organisms, while each organism may have its own particular form of attack; still it is gratifying to know that the remedial measures are the same in each case.

The following suggestions regarding the storage of potatoes, if followed carefully, will practically eliminate the losses from decay of potatoes in storage.

1. Spray your potatoes frequently and carefully during the summer with Bordeaux mixture.

2. Delay digging your potatoes, if possible, until the tops are dead and dry.

3. Avoid covering potatoes, after they are dug, wtih the tops, to protect them from sun or frost.

4. Carefully examine all potatoes to be stored, and remove immature, broken, cracked, chipped, sun-bitten, frost-bitten or diseased tubers.

5. Never store your potatoes while wet.

6. Have the tubers free from dirt. If dirty, the soil fills up the spaces between the tubers and prevents the circulation of air.

7. Provide a dry cellar with abundant ventilation, where the temperature can be between 34° and 40° F.

8. Keep the storage room as cool as possible directly after the product is stored.

9. Fill your bins gradually; by so doing, the potatoes that are put in first have lost their heat before they are covered by another layer.

10. Carefully sort your stored potatoes at intervals during storage, and remove all tubers showing signs of disease or decay.

PREPARE YOUR BEES FOR WINTER NOW

Upon every owner of bees develops at present a national duty:—to do his best to keep them alive until they can again add to our depleted supply of sweets. More than half the battle is to provide them with good protection during cold weather. If you have not a dry, deep, cool cellar, try to get a friend who has one to let you put your bees in a dark corner there. Do not put weak colonies away for the winter; they consume more stores, so valuable now, than strong ones, and even then are more likely to die. Unite them now while the weather is still mild, and see that each colony has aout 30 pounds of wholesome stores to tide it over until well on in spring. Do not delay. Uniting and feeding cannot be satisfactorily done when cold weather is upon us. If your apiary is sheltered from wind, another good way to winter strong colonies of bees, suitable for southern Canada, is to pack the ihves in shavings or dried leaves in a large case. Do not forget to provide a small flight hole in the case.

Honey has doubled in value since twelve months ago, and so have every hive of bees. There was a heavy loss of bees last winter, mostly through neglect to prepare them wtih care and in good time, and it has been impossible to meet the great demand for bees during the summer.

POTATO SEED SELECTION

Like begets like in the potato field as elsewhere, but judging by the quantities of inferior tubers used for seed purposes, the importance of this law is not appreciated by many. The use of small potatoes taken from the bulk of the crop, year after year, and used for seed will eventually lead to yields of inferior potatoes.

At potato digging time the great opportunity for seed selection is offered. With the product of each plant spread on the soil it is an easy matter to select out those plants that have given the largest yield of the most desirable type of potato and are free from disease. The potatoes from such plants only should be gathered and saved for use as seed the following year. This saving of seed at digging time may seem to many as an extra burden during a rush of work, but it is not.

There is less actual labour attached to seed selection at the time of the potato harvest than there is by practising any other method of seed selection. Furthermore, the results from hill selection are reasonably certain while with other methods there is some speculation. Potato growers would do well to watch closely for exceptionally good plants. These, harvested and saved apart from the main crop, may become the grand-dads of fine potato fields in the future.

APPLELESS TREES MUST BE PRUNED

W. K.—(1) Apple trees have plenty blossoms every year, but never any apples form. Will spraying make the apples form.

(2) Could you also tell me what to do for rose bushes that are alive with green fly insects?

(1) Apple trees that annually show lots of bloom and no fruit, are not readily cured by spraying. What they want more is a severe pruning of branches and roots, the latter so that they keep well towards the surface. Deep rooting and luxuriant growth of branches is against fruiting.

(2) Strong solution of whale oil soap or solutions of tobacco are the best materials to kill insects, but it must be applied with sufficient force to penetrate the waxy covering of their bodies. Kerosene emulsion is also a sure cure, but you must make it so weak that it will not damage the plant. Try it on other plants to test the strength. In spraying the whale oil soap solution, have the solution hot. When applying it with force pump lay plants on the ground.

FERTILIZERS FOR 1919

Now is the time for the farmer to plan his croppings for 1919, and in doing so to decide upon what fertilizers, if any, he purposes to use. Last spring there was considerable disappointment among farmers, especially among those who had delayed placing their orders till a few weeks before the season opened, as there was not only a shortage of material but transportation facilities were such that quick deliveries could not be made. There is no prospect that conditions will be better next spring and it therefore behooves the farmer this fall to carefully consider his needs, scan the prices and having made his selection to place his orders, stipulating an early delivery. Co-operation in ordering may effect the saving of a considerable amount in purchasing and freight rates.

During the last ten years there has been considerable increase in the number of farmers in British Columbia, Quebec, Ontario and the Maritime Provinces using fertilizers, but unfortunately but a small percentage of them have any definite knowledge of the profit that may have resulted from their application. There will always be a degree of uncertainty as regards results from fertilizers, chiefly owing to the fact that seasonal conditions can not be predicted, but with close observation from carefully planned work, a very great knowledge may be gained as to the kind and amount of fertilizer which will prove profitable. A series of adjacent plots on fairly uniform soil, each with a different amount or combination of fertilizer and sown to the same crop, furnishes the most reliable means of learning the most profitable application, but if time and labour do not permit of the adoption of this plan, a strip of the field, well staked, should be left unfertilized, and its yield weighed against that of a similar sized strip on the fertilized area. From the results so obtained the profit or loss from the application of the fertilizer may be readily obtained.

A considerable saving may be usually effected by buying fertilizer ingredients—nitrate of soda, sulphate of ammonia, superphosphate, basic slag, etc., and this course also furnishes valuable information for future guidance obtainable in no other way.

Information and advice regarding the use of fertilizers will be gladly given as far as may be practicable, by the Division of Chemistry, Central Experimental Farm, Ottawa.

ATTENTION TO PLANT DISEASES AFTER HARVEST

The plant pathologists of the Experimental Farms inform us that of the many destructive plant diseases, none are more difficult to control than those living over in the soil. Year after year, notwithstanding the practice of crop rotation, the effects of soil infection often became so pronounced as to cause what is popularly known as "soil sickness." One of the most notorious

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of these diseases is clover and alfalfa wilt (Sclerotinio) which has given rise to the belief that land may become clover sick. This disease has just begun to show up on the Continent of America, and unless prompt precautionary measures are taken there is a possibility of the disease causing similar losses here to what it does in Europe.

A disease similar in nature attacks beans, and there are other instances which call for a word of general advice on matters of prevention.

As soon as crops are harvested, whether gathered in tne field, garden or orchard, there is manifested a universay indifference and neglect on the part of some growers towards the condition in which the ground, trees or bushes are left. Were it but known to them that with the refuse letf on the ground from crops there exist myriads of germs of serious plant diseases (and also insect pests) ready for hibernation!

Mummied fruits in orchards left undisturbed, either on the trees or on the ground, give rise to a new outbreak of brown rot in spring. Plowing under affords only limited protection, since it safely buries all fungus material which spring plowing will bring to the surface of the soil once more after successful hibernation. Prevention, as usual, is decidedly better than cure, and sanitary measures are just as important in field, garden or orchard as in stables and dwellings. As soon as possible after the harvest of each crop—or better, after the growing season is over—a general clean-up is most essential. Where possible, all refuse should be collected; diseased or rotten fruits, leaves, stalks, haulms, etc., should be gathered and the whole destroyed by fire. Material that will not burn readily, such as is common on the fields after harvesting—roots, potatoes, etc.—should be buried in a pit. In orchards, where such measures are followed by the usual dormant sprays, the results will be most beneficial, and field and garden crops will also greatly benefit.

French Canadian Colts for Sale

French Canadian Colts are for sale at very reasonable prices by the Experimental Station, Cape Rouge, Que., from the largest stud in existence today. If you require a wiry, sturdy, tough breed of horses, write

GUS LANGELIER, Supt.
CAPE ROUGE - - QUE.

WHAT THE VICTORY LOAN MEANS TO CANADA

What the 1918 Victory Loan means to Canada can best be realized by a knowledge of what the 1917 Loan made possible. The subscribing of over $400,000,000 by the people of Canada last year enabled the Dominion Government not only to take care of the needs of the Army, but also to make substantial advances to various industries which has resulted in unprecendented prosperity.

Since the beginning of the present year Canada's war expenditure has been averaging over $30,000,000. a month. It has grown heavier as the army overseas has increased in number, and especially since the beginning of the great Allied offensive early in August. To date about 590,000 men have been enrolled in the Expeditionary Force, the number that has gone overseas being fully 415.000. Today there are 60,000 more Canadians overseas than there were at the end of 1917. All this means heavier war bills and the greater need for the next Victory Loan.

Canadians hardly realize what a strong impetus the large subscription to the last Vcitory Loan imparted to business. It enabled the Government to make advances to industries which, without the $400,000,000 subscribed, would have been impossible. Great Britain wanted our beef, bacon, cheese, wheat, hay, oats and munitions, but she could not pay cash for them. Canada could not borrow abroad the money she wanted, so if she were to sell he rsurplus products she had to give credits to Britain and advance the money for the purhcases.

During the present year the Imperial Munitions Board has received from tne Dominion Government advances amounting to $25,000,000 a month. By an advance of $10,000.000 made by the Government the Board was able to give orders for the building of 44 wooden ships. Another advance of $1,000,000 enabled the Board to begin the manufacture of aeroplanes, of which 3,000 have been produced in one of the Board's great plants.

The 1917 Victory Loan made possible the advancing of $100,000,000 to finance the 1917 wheat crop. Another $100,000,000 was similarly advanced to finance the sale of our exportable surplus of beef and pork products to Great Britain. In addition, large sales of hay and oats were also provided for.

A larger war loan is needed this year than last, because the 1918 war expenditure will probably be from $50,000,000 to $75,000,000 larger than in 1918. The Imperial Munitions Board will, if anything, require larger advances during the coming year than it has had, for its operations have been greatly extended.

The Dominion Government has also announced a $50,000,000 shipbuilding programme.

The Government must finance the sale of the Western wheat crop to Great Britain, which will probably require over $100,000,000. The advances for the sale of beef and pork products wil ltake another $100,000,000; cheese, butter, eggs and hay over $50,000,000 and the sale of the surplus B. C. Salmon pack $10,000,000.

CABBAGE BURSTING EASILY PREVENTED

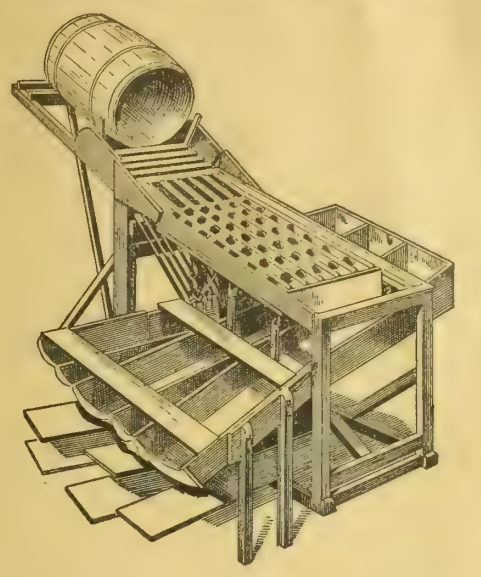
Is there anything can be done to keep cabbage from bursting.—J. B.

If the autumn is damp and the late cabbage is inclined to burst, you may do much good by going through the patch and carefully selecting those heads most apt to burst and pulling the roots partly out of the soil, so the heads lean somewhat to one side.

This breaks off some roots, but leaves enough to sustain life. There will not be so much growth, however, and not so much moisture will come up from the roots to the centre of the head, which is the cause of bursting.

In large fields of cabbage, hundreds of dollars can be saved by doing this.

The Elderkin Fruit Sizer and Grader



To grade your apples quickly, cheaply and in the best possible manner, you require an ELDERKING GRADER, the best on the market, with help so scarce, why not buy a grader at once and get the biggest price going for ycur fruit.

For Prices and full information write the

Hantsport Fruit Basket Co., Ltd.,
Hantsport, N. S.

A small garden can be watched very easily and much loss prevented.

PREPARE TO PLANT TREES

Spring is the season when tree planting is best done and when one is prompted to think about the advantages of having a few trees around the front door yard. But now is the time to begin. The soil should be plowed in the fall, if not earlier, for tree planting. Prepare the soil for storing as much of the fall and winter moisture as possible. Arrange to give the trees considerable room, possibly a rod between trees, and give your order for trees early. Nurserymen will be glad to receive your order now for spring shipment. You will be sure, if this is done, to receive the species you desire and to receive them in season.

AUTUMN CULTIVATION FOR THE CONTROL OF WEEDS

The ploughing of the land in the fall is desirable as a part of the regular work of the farm, since it enables the ground to be got into proper condition for sowing the seed in spring considerably earlier than would otherwise be the case. But it is perhaps of even greater importance as a means of keeping weeds in check. In the case of perennial weeds the mere turning up and exposing of the root stocks to the action of the frost will serve as a considerable check to the weeds in cases where they are not killed outright. Where it is desirable to collect and burn creeping root stocks this can be more readily accomplished where the ground has been pulverized by the frost and snow in winter.

In the case of annual weeds these are of two classes from the point of view of their life-history. One group requires a resting period before the seeds will germinate and this holds good even if the conditions with regards to moisture and temperature are suitable. These normally germinate in the spring of the following year after they are shed, but in many species the germination can be delayed for several years if the seeds are buried to a considerable depth in the soil. This is true of such species as wild oats and wild mustard. Each time the surface of the ground is disturbed some of these buried seeds will germinate and if no other seeds are allowed to fall into the soil in the meantime, the ground will eventually become clear of them.

In another group o fannual spesies known as winter annuals, the seeds germinate immediately after they are scattered and pass the winter in the form of a small seedling plant which survives under the snow and resumes growth in the following spring. Belonging to this group are the following weeds:—Chess, purple cockle, nightflowering catchfly, stinkweed, shepherd's purse, false flax, ball mustard, wild mustard, hare's ear mustard, tumbling mustard, peppergrass, wormseed mustard, corn gromwell, blue bur or stickweed, and stinking mayweed. It is in the case of these weeds that autumn cultivation is specially desirable as if they are turned under with the plow and covered sufficiently deeply, very few of them will be able to continue their growth after the snow melts.

CLOVER and GRAIN PRODUCER

Provincial Grain Phosphate

12%

Available Phosphoric Acid

Corresponds in Analysis to the Best Grades of "BASIC SLAG"

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THE PROVINCIAL CHEMICAL FERTILIZER COMPANY, LTD.
ST. JOHN, N. B.

DAIRYING.

INCREASE MILK PRODUCTION BY PROVIDING YOUR HERD WITH PROPER FEED AND CARE

Right now wonderful lessons about feeding and caring for cows for large and economic production are to be learned. Even the most unobserving one realizes that his cows are milking more largely today than they did a couple of months ago. Those who weigh their milk know how great the increase is. Those who test the milk from each cow every month know also that the milk is not only more yellow, but in most instances it is richer. Moreover it is very evident that cows are gaining rapidly in condition and that they are enjoying real cow comforts.

It is a busy time of the year and labor is scarce, we grant, but in spite of this we do not hesitate to say that the best possible manner in which any man who milks cows can spend a few hours is to go to his pasture, sit down under the shade of a tree and study out the reason why his cows are giving more and richer milk, lactation period considered, than they do at any other season of the year. If he will but see and think he will learn the greatest lessons that are to be known about feeding and caring for cows. He will become impressed with the fact that of all teachers, including Experience, Nature is the greatest. In most climes she teaches her best lessons during the month of June. In the words of James Russell Lowell, it is then that she "tries earth if it be in tune and o'er it softly her warm ear lays."

Five great fundamental principles of feed, care and management Nature employs in June to perform her miracles, says Prof. Hugh G. Van Pelt, in Kimball's Dairy Farmer. These are not secrets. They will be clearly apparent to anyone who will comfortably seat himself and watch the cows graze in the valleys and along the hillsides.

Comfort—that is the first fundamental. The air is balmy, neither too warm nor too cold. The sunshine, not yet extreme, is invigorating. Flies and insects have not yet become numerous enough to torment. Unannoyed by depressing heat excessive cold or pests, each cow works persistently with great enjoyment.

Fresh air—that is the second essential. Each cow is thoroughly surrounded with all the fresh, pure, oxygen-laden air she can possibly breathe. With nostrils distended she takes into her lungs the elements so necessary for purifying her blood and for insuring the best of health and the most thorough digestio nand assimilation of her food.

Sunshine—that is the third essential. There is vitality in the rays of the sun and, of all germ destroyers, direct sunshine is the greatest. Without sunshine, animal life would not last long; and after cows have been all too often housed in dark, gloomy barns all winter, it is doubtful if any one phase of Nature's aids is more helpful than the glorious sunshine in June.

Water—that is the fourth fundamental. Very often during the day each cow may be seen leaving the herd to go to the brook and drink of the clean, clear, sparkling water from which the rays of the sun have removed the icy chill that made her shiver every time she took a drink last winter. She loves this pure water that is neither too warm nor too cold and she drinks abundantly of it.

Feed—that is the fifth great essential, and the final one. Each cow is veritably surrounded with an abundance of feed that is green, fresh, succulent, palatable, well balanced and easily digested. In all her comfort and glory, enjoying the pleasant air and sunshine and pure water, the cow eats all she can, digesting it quickly, putting it largely in her udder in the shape of milk-making nutrients—and then she eats some more. All day long during the entire 24 hours she works unhindered, unmolested, for her master and for the great principle of making the wonder food which has made Canada famous.

Soon July will be here and then August, and with these months will come flies, mosquitoes and insects, the sun will be unbearabl yhot, the water in the brook will be unpalatably warm and the pasture grasses, eaten close, will become dry, dusty and unpalatable. Quite naturally milk production will decerase and the richness of it will wane. What a great contrast of conditions will prevail. Not again until next May and June will Nature seemingly try to do otherwise than to place obstacles in the pathway of both man and cow. In her own way she makes impressive the fact that during June, day after day, she held open school and taught every man who would see and think how best to care for his cows. She even went so far as to demonstrate all of the great fundamental principles of how to care for and feed and manage cows. As far as she is concerned, it is for man to look out for himself, and for the artificial cows he has made, during the remainder of the year.

If he would have green, succulent, palatable, easily digested, nutritious feeds, he should raise soiling crops. If his cows are not to be pestered with flies and mosquitoes he must kill the pests or spray his cows with materials that will protect them. If the milk flow is not to be impaired by the excessive heat from the sun, shade in the form of darkened, vell ventilated sheds or barns can be provided. Nature has shown what to do but, except in May and June, man must do it.

For a short time during the fall months Nature is lenient and then, as winter comes on, she sets about to do her best to compel man to do that which she has taught him to do during the balmy days of June.

She insists that he build barns and store up feed for the winter months. She insists that, if he is to keep his cows in good health and condition, he must furnish the same fundamentals that she furnished in June. This is not difficult to do for the one who sees and thinks. He can easily equip his barn, so it is convenient and comfortable, neither too warm nor too cold. He can ventilate it so as to permit the fresh air to gain access without drafts and compel the foul air to leave. He can have windows in his barn that admit the sunshine. He can have a water basin in front of every cow, provided his barn is as warm as it should be, and to these basins the water will come as fresh and clean and pure and always be as available as are the brooks in June-time. These things cost very little. They are more the result of intelligent thinking and well planned action than they are results of expense, and what little they do cost is chargeable to permanent improvements and paid for many times by additional production.

Expensive as feeds now are, it will cost less—by building and filling silos and growing legumes like clover and alfalfa—to provide for the cow the same sort of succulent, palatable, easily digested, nutritious food in abundance than to fail through procrastination to do so.

Wise indeed is the man that milks cows, who will take a few hours from his work, go to his pastures where the cows graze, visit with Nature, learn the valuable lessons she teaches, and provide at once for applying the great fundamental principles of large, economical, profitable milk production.

TREATING AFFECTED TEATS

When a cow doesn't yield her milk in a proper manner, gives bloody milk, etc., the trouble can often be found in some disorder of the teats. In fact, it would be hard to find a dairy herd in which at least one member of the herd is not more or less affected with either leaky teats, blocked teats, sore teats or warts on the teats.

Milk leaking from the teats may occur when a cow is milking heavily and the periods between milkings are not evenly divided, or it may be because the sphinter muscle is not properly performing its duties. As there is no remedy for this trouble about the only thing that can be done in case conditions warrant is to place a rubber band around the lower part of the teat.

Warts on the teats do not as a general thing cause much trouble at first but after they are well developed they tend to make the teat tender to handle, besides adding to the danger of increasing the possibility of contaminating the milk through infectious material which may be found upon them. The best way I know of to get rid of warts is to tie a piece of waxed silk tightly around the wart as close to the teat as possible. After a few days the wart will drop off and cause no more trouble. For the warts that are too small to tie around with silk, an easy way of removing them is to touch them with a feather dipped in butter of antimony. This is very strong and care should be taken not to touch the teat at all with it. Olive oil is also good in removing warts. They are smeared thickly with the pure olive oil, several applications usually being necessary.

Sore teats are a difficult proposition as the process of milking opens the sores and we can't allow a cow in full milk flow to lay off for a week or so to enable he rteats to heal up. Sore teats are often caused by milking with wet hands, the teats being left wet after milking and when the cows are turned out into the lot or pasture the wind chaps and cuts the teats. Those who practice wet-hand milking, which practice I do not support, should be sure to thoroughly dry the teats with a soft cloth after milking is completed.

Here is a way of treating sore teats that I have tried and found very successful. To one ounce of glycerine add one dram of boracic acid. Mix this in one-half pint of water and put in a narrow jam jar. After milking is completed put the teat in this mixture, holding the jar close up to the cow's udder, and let the affected teat soak therein for a few minutes. This mixture may be kept and used again and again. A little touch with a crystal of alum after this bath will help the more obstinate sores to heal more quickly but care must be exercised not to apply anything that will cause the skin of the teat to wrinkle and pucker up when the sores heal. Oxide of zinc ointment applied after each milking is also good remedy for sore teats.

Blocked teats are always a bother as they interfere with the flow of milk and moreover make is very hard to strip the quarter clean. They are caused by a little ball of flesh inside. In nature these growths are very like the warts on the outside of the teats. Some are only attached to the lining of the skin by a little string, and can be pushed out of the way by the insertion of a teat syphon. Sometimes they break off and come away of their own accord. I have seen the more obstinate ones removed by the use of a large sized milk syphon, with one side filed to a sharp edge, in exactly the same manner as an apple is cored with a patent corer.

The syphon is held in the right hand and the teat held in the left. After the syphon is introduced into the teat it is slowly turned around with the sharp edge against the lump. It is a simple little operation and yet it is easy to lose the quarter in performing it. The syphon must be sterilized in boiling water before being inserted and every precaution should be taken to insure absolute cleanliness. There will be a little blood come from the teat and this should be milked out and the teat syringed out with a seven per cent. mixture of boracic acid and warm water. The lining of the teat will soon heal, so long as it is kept free from germs. This can only be done by keeping everything perfectly clean. No one but a competent operator should attempt to cut away these lumps in teats, otherwise more harm is apt to result than good accomplished.W. H.

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If you are building or intend to remodel the house or barn, write us for descriptive and illustrated booklets, telling in detail the facts about Bishopric products. 87
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SOME COWS SPENDING MONEY EVERY DAY INSTEAD OF MAKING SOME FOR OWNER

To the writer the future of the dairy industry seems more hopeful than to some others with whom he has talked. I am satisfied that in the first place, we must cull out our poor cows and send them to the block, because if there to to be any profits in dairying they will be small for some time and the poor cow will spend our money every day instead of making money for us.

With an effort all along the line to get rid of the poor cows the demand for feed stuffs will lessen and prices will be held in check to some extent. With the poor cows slaughtered, the supply of milk and butter will fall off and prices will gradually improve.

But, says the man in the city, what is to become of the consumer? Milk is the cheapest food on the market today. It is strange that the people in the cities do not comprehend the truth. Oleomargarine may be used by grown-ups as a substitute for butter, but it is not a substitute for butter in the ration of the child and never can be. Prices of dairy products seem high to the consumer, but they must go higher or these products cannot be furnished.

Gradually to a considerable extent, dairy products must take the place of

It Pays to Use the Best!
252
Windsor Dairy Salt
Made in Canada
THE CANADIAN SALT CO. LIMITED

meat. I am convinced that as a people we shall have to eat less and less meat until the close of the war. This will be necessary for two reasons. First, the production of meats must gradually fall off unless prices are considerably advanced, and second, large quantities of the grains essential in their production will have to be used directly as human food. The falling off in production and the consequent rise in prices will enable the farmer to produce both meat and dairy products at a small profit though in less quantity than before.

Keeping less live stock on the farm and devoting a larger acreage to the growing of grains, he will answer the nation's call for increased food production, in which capacity he is just as important a factor in winning the war as the manufacturer of munitions. By seeding liberally to clover, by making the best use of the manure resulting from even the smaller amount of live stock kept on the farm, by mowing the clover but one year and then plowing it under, he should reap a profit from the growing of grains sufficient to compensate him for the somewhat smaller returns from the live stock.

So in conclusion, I would get rid of every poor cow as soon as I could find her. I would breed the good ones to the best sire possible even though I had to drive for miles and pay a liberal service fee. I would feed thoughtfully, intelligently and carefully. If I knew of another man anywhere whose success in feeding was better than my own I would see him at once and learn why. It is more important that we dairyman should succeed now than in the past, for we are a part of our great national army. We are not in uniform but we are soldiers of agriculture, and upon the way in which we "do our bit" will depend in some degree the outcome of this great world's struggle.

W. F. T.

BERNARD FRICTION PULLEY

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THE A. BERNARD INDUSTRIAL CO.,
FORTIERVILLE, QUE.

MANGE IN COW

Dairyman:—I have a cow four years old. There was a yellow dandruff started at the tail and is running down t othe udder and along one side of the hip bone. It ets dry and come off in big scales and brings the hair with it.

Ans: This is a species of mange but not as bad or difficult to treat as some other kinds.

Give 1½ or 2 pounds of Epsom salts and afterwards the following:

Nitrate of Potash.....¼ lb.
Sulphur .....¼ lb.
Ground Gentian Root.....¼ lb.

Mix thoroughly and give a teaspoonful every night and morning in the feed.

In addition to the above pour one quart of rain water on two ounces of creolin previously placed in a small pail. Keep the creolin at one side of the vessel and pour the water on quickly so that it will mix thoroughly. With this mixture wash the animal thoroughly all over the body and around stall, etc., and keep her away from other cattle. Zenoleum may be used instead of creolin if desired. It is put up in tins with directions on outside.

SELECTING THE WELL-BALANCED RATION FOR COW

In determining the concentrates to use in a grain mixture for dairy cows, several things should be kept in mind. The following factors are especially worthy of being considered:

Palataiblity

A feed is said to be palatable when its flavor is pleasing. Certain feeds, like corn, are palatable, while certain feeds, like cottonseed meal, are unpalatable until the cow has been taught to eat them. Unpalatable feeds should be mixed with palatable feeds. There is some proof that the amount of digestive juices excreted depends upon the palatability of the feed.

Bulk

A grain mixture is said to have bulk when a definite weight takes up a relatively large space. To illustrate, 100 pounds of wheat bran will occupy much more space than 100 pounds of corn meal, hence is said to be bulky or light. It is believed by dairymen that this bulk in itself enables the digestive juices to more completely penetrate the mass, and hence may facilitate digestion. At any rate, it is known that a dairy cow, to do well, must have the digestive tract well extended, and where heavy grain feeding is practised some of the benefit of bulk ordinarily secured in the roughage can probably well come in the grain mixture. Unless the grain mixture is fed on the silage, or other roughage, it is well that it have bulk in itself.

Variety.

In compounding a grain mixture so that it will have palatability and bulk and be properly balanced, generally three or four grains are used in the mixture. This is commonly spoken of as variety in the grain mixture. From recent investigations it would seem well that care should be taken to see that grains of distinctly different species of plants should be used. This will help furnish the animal with needed ash ingredients and special forms of protein required by a cow in milk. It is not variety simply to feed several different named feeds all coming from the same plant, such as corn stover, corn and cob meal, corn bran, gluten, corn distillers' grains, etc.

Effect on Health

Each feed has its own specific effect upon the animal body. We do not yet have the specific effect of all feeds, but certain effects of particular feeds are well understood. To illustrate, cotton-seed meal is known to be constipating in its effect, while linseed meal is known to have a laxative effect. Some of the roughages are laxative, such as silage, clover hay and alfalfa hay; some are constipating, such as timothy hay, oat straw and corn stover. When the roughages are constipating in their effect, a grain mixture of a laxative nature must be fed, if the dairy cow is to do her best. The bowels of a dairy cow should be in a laxative condition, if the cow is making her best production.

Cost

In successful farming, the business side is at least three-fifths. From the point of view of computing rations for dairy cows in order to produce milk, cost would not come in, but in actual farming it is more than half. Dairymen often believe that the cost price per ton is the most important consideration. It is important, but more important is the relative cost of net energy and digestible true protein in feeds. The farmer should calculate the cost of 100 therms of energy in all the feeds available, and then make the cheapest mixture that satisfies all his requirements.

Roughages Used

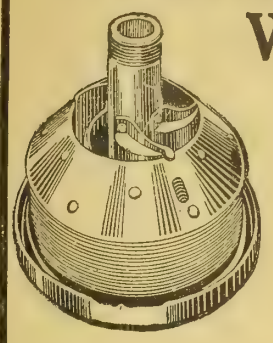
Concentrates are used to balance the roughages fed, and hence the nature of the concentrates will depend upon the roughages fed. It is easy to divide the roughages into three general groups.

Group 1 includes timothy hay, corn stover and corn silage. Any one, or any combination, of these will need a great deal of protein in the grain mixture.

Group 2 includes mixed clover and timothy hay, or any combination half leguminous and half non-leguminous. This group will require a grain mixture with a medium amount of protein.

Group 3 includes the legumes as the entire roughage. This group needs the smallest amount of protein in the grain mixture.—Pa. Ex. Sta. Bulletin.

The Exclusive Curved Wing Center-Piece



A FEW years ago the farmer bought a separator because it made a tremendous saving of butter fat over the old-fashioned pan skimming method.

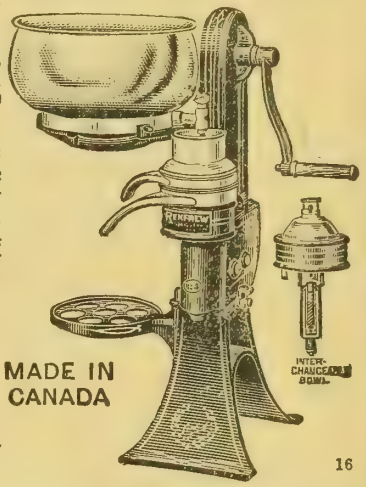
Nowadays farmers all over America are throwing out the old separators and getting the Renfrew because this up-to-date machine is almost as great an advance beyond the old separator as the early machines were ahead of pan skimming. The

Renfrew

is the only separator made that can give you the easy-to-clean, close-skimming advantages of the wide open bowl with curved wings.

The discs in the Renfrew are different in both size and shape. In the wide space between discs and the tubular shaft half the skimming is already done. The curved wings, providing a longer space for the milk to travel, increase the skimming force many times, and insure perfect and even distribution, and prevent clogging of the discs with cream. It is the easiest of chores to clean the Renfrew discs.

And remember this—there is no whipping of cream as with straight wings. Globules of fat are not broken. Thus you get *Quality* butter fat and a better cheque when you sell your cream.



Besides, you get *more* butter fat, more profits. The Renfrew gets all but 1/10 pound of butter fat in 1,000 lbs. of milk skimmed.

The Renfrew not only outskims others, it gets cream that makes the firmest and best of butter quality that other machines cannot produce.

The Renfrew catalogue describes the Renfrew's exclusive interchangeable capacity feature, automatic oiling system, enclosed gear and other advantages. Write for literature to-day.

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Wonderful demand for raw furs. Prices highest on record. Furs are scarce and I am paying very high prices.

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My prices are net, I deduct no commissions and also pay express and parcel post charges. You will like my good grading and continue to ship to me. Money is sent you same day I receive your shipment. You cannot afford to be without my price list. You want most money. I want your furs. Enlist in my army of satisfied shippers. Write today without fail.

BENJAMIN DORMAN 147 West 24th Street NEW YORK CITY

LIVE STOCK.

KNOW THE STATE OF THY FLOCK

"Be thou diligent to know the state of thy flocks, and look well to thy herds" is a scriptural admonition, the observance of which crowns the stock breeder with success and the non-observance of which marks the operations of the negligent, to a greater or lesser degree, with failure, commensurate with the degree of carelessness exercised by the breeder.

Under present conditions there is no branch of the live stock industry that shows the profit on investment that is shown by sheep raising. It pays a farmer handsomely to be diligent to know the state of his flock. Every item of care given to the flock at this season is responded to in increased dividends by the arrival of the golden hoof.

The profit from the sheep flock comes from two sources, the wool crop and the lamb crop, to say nothing of the benefits accruing to the farm from their weed scaranging habits and the fertility added to soil where sheep are pastured.

The amount of dividends realized from the wool crop depends upon the care that is exercised in keeping the sheep during the winter, under conditions that will keep the fleece as free as possible of foreign matter, the proper feeding and attention to the general good health of the flock.

It is, however, to the lamb crop that the farmer looks for his biggest returns. The flock should average one lamb per ewe. Not a few farmers get a higher average by paying particular attention to some of the essential details recognized by successful sheep breeders the world over.

In order to get high percent lamb crops, it is necessary that the ewes be in prime condition and gaining weight at the breeding season. This desirable effect is procured by seeing to it that the ewes have access to an abundant supply of palatable food and water, and adequate shelter from the driving cold rainstorms, so often experienced in the Maritime Provinces during the late fall and early winter seasons, and that they be not harrassed by vermin or worried by dogs or other predatory animals.

So much for the ewe flock, but what of the ram, which is more than half the flock. What particular care does he receive? Our observations, as we travel through the various sections of the Maritime Provinces during the fall season, is that there is no animal on the farm that is so inhumanely treated as is the ram.

In order that the time of arrival of the little lambs may be controlled, it is necessary that the ram be seggregated from the ewes, or if left running with the flock, that he be banded to prevent copulation until the time when the farmer wishes to breed his ewes. While the banding system entails less labor, it is one that is not conducive to big returns, as the ram's vitality will be decreased by chasing and worrying after the ewes that come in heat, although, owing to the band he finds it impossible to couple with them. The vitality that should be conserved until the heavy breeding season arrived is thus sapped and a poor lamb crop is the result. Successful shepherds, particularly where the flocks are of fairly large proportions, disapprove of the plan of letting the ram run with the flock.

Referring to the inhuman treatment of the ram where seggregation is practiced, too frequently, usually early in September, the ram is taken from the flock and is chained in the open field where he is left unchanged to a fresh feeding ground and without water for several days, and subjected to the blazing rays of the sun and the cold, wet, fall rain storms without a shelter of any kind. What a change for the ram that roamed at will on the green, succulent pastures during the summer season, storing up strength and vitality! Starved to a certain extent, and subjected to all weather conditions, his vitality begins to ebb and the breeding season finds him emaciated and unfit to properly head the flock. The result, a lot of lambless ewes brought about by inefficient mating or by a high death rate among newly born lambs, due to low vitality, a heritage transmitted by the sire.

The way rams are frequently treated during the period they are seggregated from the flock is nothing short of criminal and short sighted indeed is the owner who follows such a practice. By all means feed and care for the ram prior to and durnig the breeding season, so that his vitality may be increased and manitained. If the ram is in prime condition and the ewe flock is well flushed before breeding, a bumper crop of lambs will dot our hillsides during the following summer and the returns fro mthe flock will be highly satisfactory.

To maintain the vitality of the rams during the breeding season, our best shepherds separate the ram from the flock during the day and feed him well, turning him out with the flock at night, for the reason that during the heavy breeding season the ram will not take enough time to graze sufficient food to maintain his vitality.

Then there is the matter of clipping locks and tags off the ewes that might interfert with proper copulation. This is a simple matter but it pays. A few minutes' attention to the ewes along this line efore the ram is turned out with them in the fall may mean a big percent of increase in your dividends from the flock.

Keeping records of the ewes that have been bred and those that have returned for service, should not be neglected. The ram will mark the ewes that have been bred if his breast and between his fore legs is smeared with red chalk or red ochre. After the ewes are all bred the red may be substituted with charcoal, so that ewes returning for service will bear a black mark. Ewes that fail to breed or that return too frequently for service, will give better returns by fitting them for the block.

The foregoing ideas are not new to many of our readers. They are ideas that are founded on facts, and he who would get the maximum returns from his flock will do well to follow the lead of our best shepherds, who are ever diligent to know the tsate of their flocks.

PIGS HAVE MANGE

A. T.—I have 3 pigs, two of which are brood sows. They are about 8 months old. They grew all right until about three months old and then they began to rub themselves against the walls. Their skin is dark grey. They have no lice. The hog shakes his head as though he had something tickling in his ears. They never refuse feed. One of the sows has a litter of little ones. They also rub themselves. Kindly advise treatment and oblige.

Ans: Your pigs seem to be troubled with scab or mange. This is a very troublesome disease caused by an itch insect. You can tell by examining them under a glass. It is difficult to get rid of when the place is once badly infected.

Give the animals the following dose, once a day for two weeks: ½ ounce flowers of sulphur and 1 drachm nitrate of potash. Mix and give in the food. Rub the animal with soft soap and at the end of an hour clean well with warm rain water. When dry prepare the following:

1 pint train oil.
2 drams oil of tar.
1 dram petroleum and flowers of sulphur to make a thick paste.

Rub this in thoroughly and let it remain three days, then wash with strong soap suds and if the difficulty is not removed repeat the application of the ointment. The animals must be changed to perfectly clean quarters, with clean bedding. Burn all old bedding and paint the floor cracks, and every surface outside and in, with quicklime slaked with carbolic acid, one part to -00 of water; or get the carbolic liquor from the nearest gasworks and slake with that.

COW WITH LUMP JAW

R. J. W.—I have a yearling heifer with a very hard lump on her jaw. Six weeks ago it was about the size of a hen's egg, but now it is many times that size. It seems very hard and solid to jaw one. What treatment would you advise to remove it? Is it lump jaw and do you consider it contagious?

Hard swellings such as you describe are sometimes caused by bad teeth, such as split, broken or ulcerated ones. We would advise you to examine the mouth very carefully before giving any treatment and notice particularly if the animal seems very tender when chewing. In case a bad tooth is found you will have to get it drawn before the cow will get better.

If no sore tooth is found in all probability the trouble is lump jaw. This disease is considered contagious, but is curable if taken in the early stages. Therefore action should be prompt. The medicinal treatment consists in giving an affected animal one drachm of iodide of potassium, three times a day in a solution of soft feed till the effects of the drug are visible in the production of slavering at the mouth, tears in the eyes, loss of appetite and scurfiness of the skin; then stop it for a week or ten days and repeat. This condition will develop so as to be seen usually in ten to twenty days. A couple o fmonths of this treatment will generally cure all cases affected in the sofe tissues. The above doses are right for a three-year-old steer weighing 1,400 pounds; smaller and younger ones should get proportionate doses. As soon as an animal shows signs of having the disease it should be isolated and kept there until cured or destroyed.

The meat or milk of an animal affected with this disease should not be used as food for man or beast.

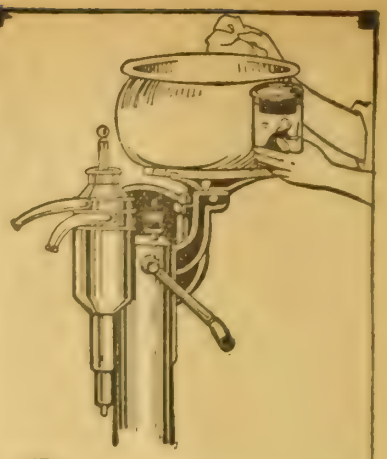
TAKING CHANCES WITH DEAD ANIMALS

Feeding dead animals to hogs should be a criminal offense. Hogs may contract many contagious diseases from eating carcasses. For instance, a cow died suddenly and was dragged out for the hogs to eat. In a few days they swelled in their throats, and as the farmer said, "all died of the quinsy." The fact was, the cow died of anthrax, and of course the hogs died of the same disease. Frequently the question is asked, "Why is it not safe to feed dead animals that are not diseased?" The proper reply is, "How do you know the dead animals were not diseased?" Don't take chances.

"FOUL IN THE FOOT"

G. R.—I have a cow that has become lame in one hind foot. The claws are somewhat spread apart and the foot is badly swollen. I can see no injury that has caused the trouble, but the skin has become cracked between the claws. Can you indicate treatment? I bought her about a week before the trouble began. Was the foot likely to have been infected before I bought her? She eats well.

Ans.: The cow had een liable to this foot trouble or she had partially recovered from an attack at the time you bought her. The ailment is commonly termed "foul in the foot," and is caused by wading in wet, mud, manure, grit or filth, and lodging foreign objects, such as pieces of cornstalks, between the toes. Light scratches or wounds of the hoof-head and fine skin between the toes readily become invaded by the filth germ, bacillus necrophorus, which then causes ulcers or canker (eating-sores). So far as possible do away with the causes which induce the disease. Keep the cow in a clean box stall. Treat by perfectly cleaning the foot; if need be, apply a poultice of hot flaxseed meal, and when clean cut away every bit of loose or rotten horn of the hoof and scrape each sore clean. Then immerse the foot for a few moments in a solution of



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two ounces of sulphate of copper (bluestone) in hot water and then cover the affected parts with oakum or cotton soaked in a five per cent. solution of coal tar disinfectant and kept in place by means of a narrow bandage passed between the toes, criss-crossed about them several times and then tied around the pastern above the hoof. Renew the dressing daily until well.

OBSTRUCTION IN A COW'S GULLET

F. C.—Kindly let me know what is the matter with my cow. She runs water from the mouth. She eats very little and does not chew her cud. The last couple of days she throws up big chunks of chewed matter. She has been fed hay and was doing fine before this happened. Do you think she has lost her cud?

Ans.: The cause of this trouble may be from a broken or sore tooth or it may be from some foreign substance lodged in her throat. The cud of an animal is nothing nore or less than the food that has been eaten and passed into the paunch when it is softened and returned to the mouth for further mastication; hence if food is not passing up or down she will have no cud and will soon starve to death.

In the first place examine her mouth and teeth. If they are normal feel along the gullet and see if you can find any enlargement caused by something having been swallowed that has lodged there. Try and see if you can see it from the mouth. If you can, put a plow clevise crosswise, get someone to hold it and the cow, and put your hand through and try to remove it. If this does not succeed give the following: Epsom Salts, 1½ pounds, brown sugar, ½ pound and salt, 1 tablespoonful; mix and give as a drench. If this does not give relief give: Raw linseed oil 1 pint, sweet spirits of nitre 1 ounce, and common soda 1 tablespoonful. Mix and give as a drench every second day. If this does not soon give relief you had better get a Vet. to examine her with a probang or perform the operation of rumenotomy, but the trouble is likely in her gullet.

NON-PROLIFIC RAM IN POOR CONDITION

T. C.—I have a ram two-years-old, in winter he gets very thin, fed hay all winter last year and from 13 ewes there was only 4 lambs. What is the cause of not having more lambs.

Ans.: A ram that is only fed hay all winter and that is in thin condition all the time is no use as a breeder. Flushing of rams is as necessary as flushing of ewes, in order to get the profitable flock of hardy lambs. A tup lamb that was thin when weaned, if kept for a breeder, must get lots of nourishinf food before he can be in trim for breeding. This is probably what is the matter with your sheep. The teeth of sheep do not bother them much at the two-year-old stage. When he proved so useless a breeder last year it is bad policy to use him again, feed him and get rid of him. Hay alone, and if it is timothy, is starvation ration for a ram that is expected to become the parent of a healthy and large percentage of lambs per ewe.

GIVE THE BULL HIS PROPER TREATMENT

It is a big mistake, in my judgment, to allow any bull to run in the farm herd, no matter what the breed. The fact that so many bulls at full age become dangerous and grow unruly, go where they please, breaking down fences as they go, and doin genough damage more than to pay for their keep if kept tied up and fed the year 'round, is due to this practice.

In a large herd of pure-bred dairy cattle like we keep, we are compelled to keep two bulls to prevent in-breeding. Soon after starting my herd I built a bull stable sixteen feet square with a partition through the centre. My outside pens are sixteen by twenty feet in size with a breeding pen of the sam size that connects with both outside bull pens. This I find very convenient and would not do without it. The stable is floored with old railroad ties, which I find are much better than a plank floor, as they allow all the water to run down between them, and the floor is always dry and rough enough to prevent the bulls slipping as they go in and out.

It is a good plan to swing a block of wood on a cable just high enough so the bulls can bump against it, so they can play with it and in that way get exercise. I would never keep an animal of this kind tied up, for that prevents it getting any exercise. Our bulls never know what grass tastes like; they live on alfalfa hay and a little silage in winter. You would be surprised, until you try it, how little feed it takes to keep them growing and in good condition. We do not try to keep them fat, but only in good condition. We always know where to find them when wanted, they never get cross, and never bother our neighbors, which saves swear words on both sides.

We breed our cows when we want to. We can keep an exact record of the time when the cows will fershen, and all of these things are important on a well regulated farm. I am sure if one would consider his time in running after the animal and keeping in repair the damage by a bull running at large, he would find that keeping him up, and feeding him the year 'round, is by far the best and cheapest way. A. M. TEMPLIN.

PICKING A DAIRY SIRE

The age of the bull so far as known has nothing to do with the characteristics he transmits. The advantage of the mature bull is that generally it is possible to see some of his daughters and in this way judge as to the character of his offspring. In buying a young bull the pedigree with records o fhis ancestors are the chief things to take into account. The mother of the sire selected should have the characteristics wanted by the breeder. As a rule those who buy bulls now require that the dam have an advanced register test which gives exact information as to her dairy quality. If the mother of the bull is one of a large group of high producing sisters, the chances are especially good that the characteristics will be transmitted. This would indicate that the animal in question belongs to a high producing family.

It is not wise to select a bull from a cow even with a wonderful record if she is the only good animal in her family. In this case she is a freak in her family, and will probably transmit not her own high milk production butthe average of the family to which she belongs.

For a high-producing, purebred herd the safest way is, so far as possible, to select a bull old enough to have daughters in milk. It is then possible to judge fairly accurately as to the character of his offspring.

GIVE COW A CHANCE

Cows are made with capacity for consuming large quantities of rough feeds but this should not be taken to mean that they can reach their highest production of milk on such feeds as corn fodder, wheat straw, and refuse hay. They require nutritious feeds, too, such as clover and alfalfa hay, corn meal, bran, oilmeal, etc. Give the cow a chance to show what she can do by feeding her properly. If she does not come up to the mark, sell her and get another one that will. But don't condemn your milk factory until you have furnished the raw material with which it can work.

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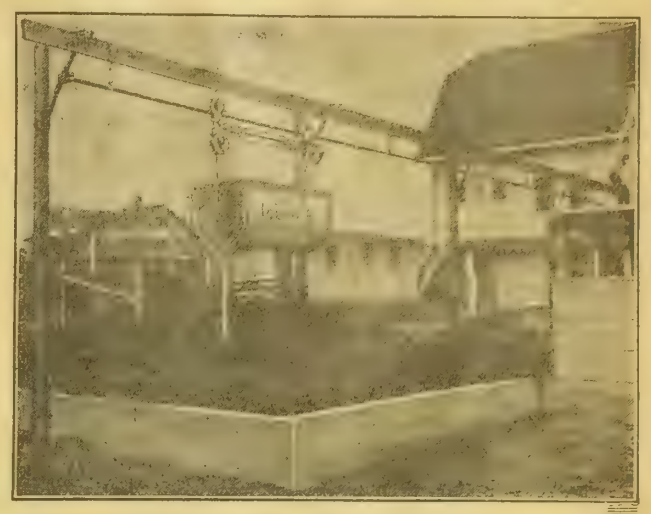

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THE HORSE

POINTS IN THE STALLION THAT INDICATE UTILITY, HEALTH AND CONSTITUTION

Draft stallions are apt to come out at the commencement of the season in a very fat condition and thus are able to hide many defects which would perhaps be apparent if seen in working condition. The best way to ascertain if the horse is heavily fleshed and has a covering of muscles and not fat, is to examine the fore arm. This part of the horse is never padded with fat, and if it is heavily muscled it is a sure indication that the rest of the body is the same. To know the difference in the forearm as between the light horse type and the heavy type is a point of importance in choosing the stallion. The long fore arm belongs to the light type and running horse, and is in no way fitted to do the work of heavy pulling. For speed the long fore arm is indispensable and for pulling, the short fore arm and short cannon bone is required.

Some horse judges place too much distinction between the slope of the shoulder of the light horse and the heavy horse, preferring the upright shoulder for the heavy horse and the sloping shoulder for the light horse. The horse with the upright shoulder should be avoided, as such a formation increases the concussion of the bones when the foot strikes the ground and unsound limbs are the result. It increases the length of the back and gives the horse a stilted action. Also all the horses that have upright shoulders have upright pasterns, and this gives rise to the many diseases that affect the joints of the feet and legs due to the lack of cushioned springiness that slanted pasterns always secure.

The slope of the shoulder may not give the heavy type any advantage in pulling power but it indicates the quality that endures and the class of horse that is speedy and serviceable at work. Speed in a heavy draft is one of the features that has only been lately advocated in heavy horse breeding, and the draft sire to choose is the one that shows a combination of speed with weight.

Speed at Heavy Work

The draft horse of the future and the one that is at present in greatest demand, is the one that can develop speed at heavy work. As in all breeding of dual purpose animals there is apt to be an inclination to favor one characteristic and the balance is then lost. For instance, the cannon bones or ankles of the light horse are described as being flat, wide, and looking fine and thin from the front view. This description would fit the heavy horse as well, only the bones must be stronger. Coarse and porous bones are not to be chosen, and these are indicated, to a certain extent, by the fineness or coarseness of the hair and skin.

Do not choose a horse simply because he has a high flowing pedigree unless he is a high class horse himself. Use your eye and hand alike in the choice. Run the hand down the leg over the knee and cannon bone. The hair and skin should feel soft and pliable to the touch, and the bone smooth and firm. The tendons should be flat and thin, round and coarse tendons are associated with round and porous bones. A coarse thick skin is also a sign of soft spongy bones that cannot endure under strain or hard work.

The knees and hocks of the draft sire should be large. There is a decided tendency on the part of some judges in exhibition rings to give decisions favorable to fineness in knee and hock joints. Provided the largeness is due entirely to size of bone and not to fleshy puffiness, the hock should be as large as the symmetry of the horse will admit of. The hock has a wonderful and complicated duty to perform, and if at all faulty in formation, or small and weak in bone, it will give way to some of the many diseases that fall to the lot of weak hocks. The hock of the running horse is carried low down in the leg as in the greyhound, but in the draft horse it should be more equally placed between the hip and the foot.

The quality of the rest of the horse is generally carried to the feet, but they deserve special attention as sound feet are rather rare in the domesticated horse. This is due to the changed use that horses' hoofs are put to in the pulling of heavy loads over hard ground, instead of galloping over the soft prairie in nature. The common defects of the feet of the heavy horse are: Soft hoof, dry and broken hoof, flat hoof, low or sloping heels, and too large a hoof. The best feet are round, of equal size and shape and perfectly sound. The best quality of hoof is dark in color and has an oily coat of natural wax. Lift the foot and see that the quarters are well united to the frog, and that the sole is well arched.

Color of Eye and Coat

In buying a horse or choosing a breeding animal, color should not be overlooked. Color is an indicator of health and general temperament. In the color of the eyes, for instance, hazel brown is an indicator of spirit, robust health and constitution, while very light colored eyes are not strong in themselves as objects of vision, and often accompany weak constitutions. And a horse that shows too much white of the eye is apt to be tricky and unreliable. There are more hereditary defects in the eyesight of horses than many farmers conceive, and many of the so-called vices of horses are due more to partial blindness than to any other cause. Most of the careful judges of horses make the eyes their first point of examination, whether it is to buy or place in the prize list. Bad eyesight in a horse is a serious fault, and a dull eye shows a dull horse with a weak vitality. Look for the keen, bright, hazel eye and there will be found some fire and hardihood in the animal.

If the horse's coat is naturally glossy and pile short, it is evidence also of good health and temperament. Dark bay, brown, black, steel grey, and dark chestnut are the best and hardiest colors.

Breeding to color can only be recommended in as far as it seeks to eliminate all those colors that generally show inherent weakness of constitution.

The light sorrels and very light bays and similar colors are as a rule bad doers. They are generally hard to keep and have not the endurance that generally follows the hardier colors. Attention to color is not without its value and should be included with all other points. Extreme climatic conditions affect light sorrels, sandy and similar colored horses found in heavy draft classes. They do not stand the extreme cold and are not naturally well protected from any extreme temperatures. They have not hardihood and generally include all those horses that are hard keepers, and do not make a good use of their food.

RULES FOR THE CARE OF SHOES AND HARNESS

Old friend leather is in bigger demand today than ever before. As one of importance he is in a position to distate how he shall be treated. He has a right to say: "Never put straight neat's-foot oil on shoes or harness. If you wish to waterproof your boots or shoes, brush them and then rub them well with a lukewarm mixture made by melting one part mutton tallow, one part beeswax, to which is added one part of pure neat's-foot oil.

"Neat's-foot oil is a great penetrator, and goes all through the leather. If used straight it makes the leather soft and flabby and does not waterproof. But if tallow and beeswax are added the neat's-foot oil carries them in and they stiffen and waterproof the leather. To dry boots or shoes, place them in a warm, dry room; never near a fire, register or radiator. When almost dry, yet still slightly moist, rub the shoes or boots well with the mixture of oil, tallow and wax. Not only does the mixture waterproof the shoes, but it adds to the life and the wearing quality of the leather. Often it is well to scrub shoes or boots with lukewarm soft water, pure soap and a brush, then dry and oil."

Old friend leather is a clever old codger and likes to hang round a lot. He'd hang on the harness pegs in the barn longer stretches at a time without renewals if only his bath suited him better. Says he as to his bath and "oiling" harness with water:

"Harness should be taken apart to be oiled. That is necessary that the wearing parts may get sufficient oil. Put a little soda in a bucket or tub of lukewarm rain water or other soft water and soak the harness two or three hours, except collars and padded parts, which should not be immersed. After the soaking, scrub each piece of the harness wit hpure soap and a stiff brush and hang up in a warm, dry roo movernight. The harness should be slightly moist from the bath when the oil is applied. It should be warm, not cold, and the oil, consisting of one part pure neat's-foot oil and one part any good, standard harness oil, should be lukewarm.

"If only a few sets of harness are to be oiled, the oil mixture may be rubbed in. But if there is a good-sized job on hand the harness, except collars and padded parts, may be soaked an hour in the oil mixture, then drained and rubbed dry. After the harness has dried from the oiling, wash lightly with lukewarm water and a good harness soap. The oil will not injure patent-leather parts.

"Harness and saddles should be kept hung up in a protected place. Water should not touch them oftener than is unavoidable, except at the periodic washing time just preceding oiling. In the working time sweat and dirt form a film on the harness. This hardens and prevents the oil from penetrating well. Neglecting to wash harness is wearing out the leather before its time, just as drying shoes near a stove, where they dry out quickly, wears out the leather more quickly than if the shoes were in real service.

"Every few years saddles need oiling. They, too, should be washed with water, soap and brush, then dried, and pure, white, transparent neat's-foot oil applied to the under side of the leather. If applied to the upper side it must be put on very lightly and carefully, or it will soil clothing for weeks."

Old friend leather dislikes fish oil because it attracts rats.—S. ORRICK.

HURRYING HOT HORSES

Hurrying hot horses is the very thing that should not be done. If that fact were always remembered there would be few horses killed by heat, even in so hot a summer as we have had this year. Hurrying requires extra energy and develops heat in an animal in even greater proportion than the extra speed secured. What is the use hurrying, if a stop must be made after awhile to cool off?

The contrast was well illustrated one hot day at oats-cussing time. A man with a slow, plodding team of heavy horses went to help his neighbor finish a field. The neighbor led off around the field with an occasional crack of the whip. His horses were less drafty and would be popularly considered a good type to endure the heat. By the time they hurried around the field they were panting hard. He stopped to rest them and tinker up the binder until the visiting team caught up. The visitors took their own time to it and finally came into sight with a slow, easy mechanical step. They were cool enough to start right on with the next round. They continued thus all afternoon. Each team went the same number of rounds, but the hurried horsese were as hot all the time as the driver dared to have them, while the team that went slowly and steadily was comparatively comfortable.

The impatient driver gained nothing by his attempt to hurry. If he had possessed a little less judgment he probably would have overheated and perhaps killed at least one horse. As it was, he ot his horses into a weakened condition because of distress from heat. They ate poorly at night and were also low in vitality the next day. Even for one day's work the hurrying was a mistake; for a season's practice it would not do at all. The horses that had vitality and energy to go on day after day were those those powers were preserved by patient driving.

CARE OF COLT AFTER CASTRATION

G. O. P.—I have a one-year-old colt, that was castrated 3 weeks ago. Some time after the operation he goes weak on his legs. He is now lying down and is unable to get up. Does it arise from the operation and if colt dies is the operator responsible?

Ans.: Evil results of castration are very rare when proper precaution have been taken. These precautions, however, included those of the caretaker after the operator has done his part. The weather during the past three weeks has not been at all favorable to castration if the colt has

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been exposed night and day to cold ains. If he has been kept in at nights here is equal danger in a dirty man- er or box stall. Seeing that both oper- tor and caretaker are dually respon- ible for the health of the colt it is mpossible from your statement to say n which the blame can be laid.

VORK THE STALLION AND AID FERTILITY

The theory that the stallion should pend his time in idleness cannot be oo strongly condemned. The idle tallion spends his time in useless lay or frequently in the cultivation f bad habits. The stallion worked very day has his energies diverted long useful channels, which adds to is breeding ability and tractability. The stallion driver and handler hould be a horseman of ability and hould possess an unusual amount of atience. Conditions may arise in the rst few lessons that will require a lear head and good judgment. If the tallion is to be worked in a team, the eam mate should, if possible, be a nare. The stallion will be more quiet nd docile in the company of the op- osite sex than with a gelding or an- ther stallion. The stallion as a rule s strong and willing but frequently oft from lack of work and usually fat. 'he work should be placed upon him radually until he is doing his share. rdinarily half a day is enough for he stallion's exercise, but many of hem are working a full day and get- ing a large percentage of colts.

OLIC ATTACK IN BREEDING MARE

R. E.—I have a mare that has had wo colts and is in foal again. She as bred when nine years old and had ever been sick in her life, but now has sick spells quite often, acts like colic. She eats all right, looks well and is in the harness every day. Her feed is 12 quarts grain, hay. Can you give any cause and help for it? Does it come from feeding?

Ans: It is not uncommon for a mare in foal to have slight attacks of colic. They will be less likely to occur if you allow the mare to occupy a roomy box-stall when in the stable, but have her work or take active exercise out of doors every day while in foal. She must not be allowed to stand idle for a single day. Give the drinking water before feeding. Add one-ninth part of wheat bran to the whole oats, dampen it at feeding time and feed it from a large box to prevent bolting. If she still bolts her feed add cut (chopped) hay or straw. If she eats her bedding use planing mill shavings or sawdust instead of straw. Allow free access to rock salt. See that the bowels are kept active. If there is a tendency to constipation feed a few carrots and increase the amount gradually as required as soon as she has become accustomed to this feed.

ABSORBINE
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MARE WITH EYES BADLY INFLAMED

G. W. H.—What ails my 13-year-old mare? She has periodical attacks of inflammation in her eyes, they seem to be as clear as ever, but give her pain and much trouble when the attack is on. I have tried several remedies but none of them seem to make any difference.

Ans.: Your mare is affected with that form of inflammation in her eyes which has the peculiar character of remitting or disappearing for a time. The eye, after an attack of inflammation, regains so nearly its former natural brilliancy, that one could not detect that anything was the matter with them. Bathe the eye with warm water having a small quantity of salt in it—a teaspoonful of salt to a pint of water. Foment the eye half an hour at a time, three or four times a day. Smear across and into the eye the white of an egg. Apply lotion, six to eight times a day, made as follows: Atrophin sulphate 2 grains, water, one ounce, mix and use camel hair brush, and let the lotion under the eyelids as well as over them. If the eye begins to get cloudy, apply the following lotion with camel's hair brush: 10 grains nitrate of silver and 1 ounce of water, mixed together. Give the mare rest, with soft feed and a dark stall.

HORSE THIN AT 15 YEARS OF AGE

H. H.—I have a horse 15 years old that seems to feel well and have a good appetite, but is very thin. He has been out in pasture and I have been feeding three quarts of whole oats morning and night. He does no work. His teeth were ground last spring. Could you advise what could be given him that would put him in shape?

Ans.: Have the teeth again attended to by a veterinarian and then give, night and morning, one quart of black strap molasses mixed with two or three quarts of hot water and stirred among cut hay, wheat bran and cornmeal. Feed whole oats at noon and long hay at night. It may be necessary to starve the horse to the molasses feed at first, but he should soon take to it with a relish, and then should plump up quickly and in a healthy manner. Drugging with arsenic might have a similar effect, but is objectionable and a drugged horse soon "goes to pieces" when deprived of his dope.

NOSE RUNNING DUE TO BAD TEETH

A. G. H.—I have an old horse that for the last four days has had a yellowish matter running from the right nostril, with a very unpleasant odor. He eats well, but is poor and thin; never can put flesh on him. His teeth are poor. What is the trouble and what to give him to stop running at the nose?

Ans.: Examination no doubt will show that a split or diseased molar tooth in the upper jaw is the cause of the bad smelling discharge from the nostril. If so, it will be necessary to have the tooth removed by a qualified veterinarian, who may have to trephine the skull. That is done so that a punch may be introduced above the roof of the tooth and struck with a mallet to force the tooth downward into the mouth. Trephining also has to be done when pus is found present in a sinus of the skull. As glanders sometimes is present in cases such as you describe and is communicable and fatal to man as well as contagious and incurable in the horse, great care must be taken in handling a case. For that reason, too, an examination always should be made by a qualified veterinarian.

FOUNDER

J. K.—Is there anything that can be done for a foundered horse to relieve hi mof stiffness?

Ans.: Treatment of founder in horses is not usually attended with satisfactory results although in many cases the trouble can be relieved.

Soak the feet in warm water and salt in a tub containing 6 or 8 inches of water, two or three hours at a time, twice a day; every night put on a hot poultice of half linseed and bran, and leave it on all night. After the soreness is pretty well out blister around the top of the hoof with the following: Spanish Fly, 1 dram, vaseline or lard, 1 ounce. Mix and apply all of it around the top of both front feet and turn the horse out to pasture for a long while. Grease the blister the third day. After the horse is all right and he is brought in again, let him stand on a ground floor, for an animal once affected with this disease is more liable to be affected again, so be careful. The bar shoe is recommended by some.

If it is a horse you want to keep shod, and he is not of much value, keep him on a ground floor and pack the feet every night with cow manure, blue clay or anything that will keep the feet moist.

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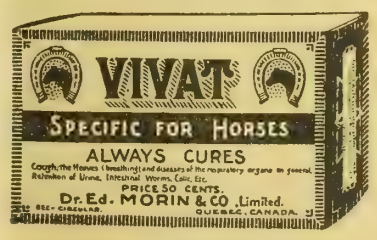
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POULTRY.

LOCATIONS AND SITES IDEAL FOR THE POULTRY HOUSE

A pountry house should face to the south so that the birds will receive the maximum amount of sunshine during the short days of winter. Sunshine is also a great disinfectant for the poultry house and is necessary at all seasons of the year. A well-drained location is also essential. When the birds live in a damp house there is an increased danger from colds and the birds may be greatly lowered in vitality. If the poultry yard around the house is undrained, the birds will have to walk in the mud and they will be apt to drink much dirty water. Walking in the mud leads to unclean eggs in the nest and fine quality eggs should be perfectly clean without the necessity of washing them.

The location of the poultry house in relation to the other buildings is important. Sometimes the house can be placed in the protection of a large barn or other building and then it will be less exposed to the cold winds during the winter. The poultry house on a farm should be near enough to the living house and the barns so that the distance traveled in caring for the birds will not be greater than necessary. If the poultry house is located a long distance from the farm home it may result in neglected fowls on the cold stormy days when careful attention is very important. Wasted steps are very expensive on a poultry farm as well as on any farm and every effort should be made to obtain a satisfactory arrangement of the building.

It pays to place the poultry house near a windbreak if there is one located near the house on ground suitable for a poultry building. Keeping the cold winds from striking a poultry house will help very much in keeping it comfortable for the birds. While sunshine in the house is quite important it is also fine to have shade during a part of the year. Evergreen trees should not be planted in front of the house to keep it cool in the summer as they will also keep out the sun in the winter. Fruit trees will furnish shade in the summer and then shed their leaves in the winter when an abundance of sunshine is needed.

Some recommend a sandy site for a poultry house and consider that a sandy farm is ideal for poultry production. It seems as if this is not entirely true. The sand is clean and drains easily, but if the soil is so poor that it does not produce an abundance of green food the expense of keeping the flock in condition is greatly increased. A flock that is yarded on land so sandy that it is practically bare of green food, will need green food supplied to them. A flock on soil that will support an abundance of clover is able to pick up much of its living during many months of the year. It seems that the soil on the poultry range should be well drained but it should also be good enough to furnish the hens plenty of the green food that they can gather themselves.

G. K. RILEY.

TO GET CLEAN EGGS WITHOUT WASHING

Many customers will not buy soiled eggs. Of two samples, one of clean eggs and the other of soiled ones, it would be hard to find the purchaser who would select the soiled ones, especially if the price is the same as for the clean eggs.

With eggs, as with most all other food products, beauty as expressed in cleanliness is an attractive feature and a valuable asset in a financial way. The egg is naturally clean and only becomes soiled because of the conditions of the nest where the hen laid. To keep the egg clean and attractive, the nest in which it is laid must be kept free from anything that would have a tendency to foul the shell of the egg. The materials with which the nest is lined, be they straw, leaves or other substances, must be fresh and dry and they must be removed as soon as they become soiled in any degree, and replaced with fresh, clean material. It goes without saying that the eggs should be kept in a clean receptacle and in clean surroundings from the time they are gathered from the nest until they are used for food.

The public has been trained to demand and buy clean eggs, and it is a wise training if its effect shall be to cause the producer to keep his product from becoming spoiled. But that "beauty is only skin deep" is true of some eggs. It must be remembered that eggs, although clean on the outside are sometimes not as clean as some with an outward dirty appearance. This is particularly true if the eggs have been washed in order to clean them for market and which have been held for some time either in or out of cold storage. The dirt, especially if it was of a dry nature, when it came in contact with the shell, is wholly upon the outside of the egg and which affects the appearance of the egg but in no way affects the quality of the edible part of the egg.

Any cleaning of an egg that may be attempted, should be done with a dry cloth or paper, and even this should not be so thorough as to remove any of the original coating of the shell. The shell contains and is coated with a gelatinous substance which prevents air and germs from passing through it and contaminating the egg to deteriorate and decay. Washing with water or rubbing with a wet cloth removes this protecting substance or destroys its effectiveness. According to investigations millions of eggs spoil unnecessarily in cold storage each year, because they have been washed or have in some way become wet before they were placed in storage.

In order to avoid this great and unneeded waste, let each of us use every possible endeavor to keep our eggs from becoming soiled. If in spite of this, any of our eggs should be found soiled, let us keep them apart from the clean ones and use them at home or market them by themselves. This will not only tend to decrease the loss, but will tend to greater peace of mind, and in the long run, to greater financial return from the poutlry yard.

C. H. SAPP.

IMPORTANT SIGNS OF CONSTITUTIONAL VIGOR IN GOOD LAYING POULTRY

A very important cause of good laying is constitutional vigor, for no matter how high an egg record the parent hen may have had, how famous the strain, how good the feed, or how well designed the laying house, a pullet that does not possess a good constitution is not fit for the business of egg production. To emphasize the importance of constitutional vigor, let us remember that egg laying is a process of converting material from one form to another, and only the birds that are capable of collecting, digesting and assimilating large amounts of suitable feed can be expected to contribute a good share to the egg yield. The trap nest gives us records of the mothers of the young pullets, but it cannot be depended upon entirely as a guide in selecting prospective good layers. The following method of grading pullets as they are brought from the colony houses in the fall to be placed in winter quarters is employed by the writer:

The first grade consists of birds having well-developed, bright-red combs and wattles; short, stout beaks; clear, wide-open eyes; close, smooth, glossy plumage; meaty breasts and thighs; clean, yellow, warm shanks. These birds are ready for laying rations, and if they were not hatched before April they are laying twnty-five per cent. by December first, and are depended upon for winter production. They keep up a good yield through spring and summer, and many individuals continue laying until November first.

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Pullets answering these qualifications, but hatched in February and March, generally begin laying too early in the fall. They molt, either with the old hens, or in the winter, and do not lay again to any extent until eggs ebcome plentiful in the spring. In the long run these very early hatched pullets have not been found profitable.

Birds in the second grade show a majority of the characteristics required in the first grade, but are not so well developed. They are kept separate from the others and are fed a lighter ration until they are better developed and nearly ready to lay.

The third grade is determined by all, or nearly all, the follownig characteristics: Small dull comb; long thin, pale beak; receding or partly closed eyes; small crop, containing little food at roosting time; rough, dirty plumage; poorly meated breast and thighs; pale, slender, cold shanks. The long flat heads of these culls often closely resemble crows' heads; hence they are known as "crow-heads."

It has been found economical to dispose of birds of this sort for killing, but they cannot be fattened.

There seems to be an opinion among some Leghorn breeders that, inasmuch as the good-laying hens become pale in shanks and beaks in the fall, the pullets selected for prospective good layers should likewise have pale shanks and beaks. In my experience this belief is not supported. The early maturing, first-to-lay pullets almost invariably have deep-yellow shanks and beaks, while paleness of the same parts generally marks the late-hatched, poorly developed and constitutionally weak birds. I contend that, whereas color disappears from the shanks and beaks of Mediterranean varieties usually in proportion to the number of eggs laid, the capacity for acquiring deep color is a strong recommendation to prospective good-laying pullets.

The proper use of concentrated feeds is also of considerable importance. A pullet in full lay will use a large quantity of mash containing twenty-five per cent. meat scraps and corn meal, without apparent injury, but a pullet not ready to lay will eat only a small quantity of the same feed, and if no less concentrated feed is accessible she will fill up on straw from the litter. It is for this reason that I separate the first and second grade pullets and feed a less concentrated ration to the second-grade birds until they "comb up" and are ready to lay.

J. P. PALCE.

RATIONS THAT GIVE BEST RESULT IN FINISHING THE CRATE FED POULTRY

An opportunity which is sometimes neglected, is that of crate-feeding broilers, fryers and roasters for a few days before marketing. To kill a good, strong, large- framed bird wtihout finishing is wasteful, for the growing of the frame is really the most expensive part of poultry raising, while the finishing is the most profitable. With good husky stock, good rations and good feeding practice, a gain of thirty-five per cent over the original weight for a feeding period of two weeks is the ordinary rather than the extraordinary event.

Chickens may be fattened at any age, but young, growing stock uses its

feed for both growth and fattening and so will make better use of the feed consumed than will fully matured stock. The prime essentials for profitable crate-feeding are healthy birds, palatable and digestible feeds and good feeding practice.

Vigorous stock for fattening is as important with chickens as with any other kind of livestock, and this factor cannot be overemphasized.

The big, bold, strong-headed cockerels that are inclined to eat the buttons off our coats are the ones that can digest and assimilate large amounts of feed in a short time and make the greatest gain from each pound of feed given.

The ration for fattening should consist altogether of mash feed moistened with buttermilk or skim milk to a mortarlike consistency. Corn meal, barley meal, bran, shorts, low-grade flour and ground oats may be used in the mash mixture.

Rations which have given excellent results are sixty per cent. finely ground corn meal and forty per cent low-grade flour.

Another practical ration may be made of fifty per cent. finely ground corn meal, thirty per cent. sifted ground oats and twenty per cent. middlings.

Buttermilk, skim milk, or some form of the milk ingredients in the ration for fattening are important, because they make the ration more palatable and because the proteins of milk are very efficient for growth and fattening. When fresh buttermilk is used, approximately two pounds will be needed for each pound of dry feed to give it the right consistency. During warm weather the birds require more moisture, and so the buttermilk mash should be mixed thinner.

Good feeding practice consists of confining the birds in crates or batteries, feeding glihtly at first and carefully at all times. The fattening birds should be confined in crates or batteries during the feeding period to conserve the energy which would otherwise be used in ranging. A satisfactory feeding crate can be made of scrap lumber, or a commercial feeding battery now made by a number of manufacturers can be used. A home-made crate for ten broilers or springs should be about two feet deep, three feet long, and sixteen inches high. It should be equipped with a lath or wire bottom so that the droppings will fall through to the tray below. A trough for feeding the buttermilk-moistened mash should be placed along the front.

Feed the fattening stock lightly the first few days, gradually increasing until on the third day and after the birds will be given all they will eat in half an hour—morning, noon and night. And feed left in the trough should be removed from each feed so the birds will have a good brisk appetite at the next time. Skill in feeding consists of getting the birds to eat as much as possible without putting them off feed. The skillful feeder can keep good vigorous springs eating well for a period of sixteen days, after which the stock is sent to market as prime milk-fed poultry. As such it commands a premium in every important market.

F. E. M.

STUNTED CHICKS MAKE POOR HENS

Undeveloped. weak, stunted chicks are very often the result of improper methods of feeding or care, especially during the first six weeks of the chick's life.

Incubator chicks, when brooded under artificial conditions, will not gain in weight as they should unless handled and cared for properly, and they will soon become stunted and eventually will die. Often this condition is attributed to "low vitality" or perhaps "poor" breeding stock receives undue criticism.

In many instances young chicks have been found literally starving to death, not because of lack of food, but because of some irregularity in their care. They may not be diseased; the trouble is more generally a matter of malnutrition or inproper nourishment.

When chicks mope round, act listless and are inclined to sleep most of the time they should be removed at once from the rest of the flock, given special attention and feed, and placed in warm, dry, well-ventilated quarters.

If the sick chicks are removed in time a majority of them can be brought back to life, so to speak; but if they are allowed to drag along in the hope that they may recover unaided, extra loss will be occasioned. Remove the chicks just as soon as they are seen to be out of condition.

Upon removing the sick chicks to new quarters, feed them a little hard-boiled egg—not too much at first because of their weakened condition. The hard-boiled egg is not only feed, but it also stimulates the chicks' appetites. Allow the chicks plenty of whole or cracked wheat, but do not let the feed accumulate. Feed, if scattered and left lying round, is not only wasted by the chicks, but also it invites extra loss by mice or sparrows, and becoming spoiled by the droppings is made dangerous for the chicks to eat.

After the chicks have eaten they must be kept warm. A constant supply of water is necessary. After several days the chicks may be given regular care and will manage to pull through with very little difficulty.

Although with extra care and feed the stunted chicks may resume their normal condition, size and weight, it is not advisable to keep them over the fall and winter.

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HINTS IN CRATE FATTENING

Do not feed the birds for twenty-four hours after putting them in the crate, and then feed very sparingly for several days. Keep the birds hungry for two or three days and gradually increase until a full feed is given; then feed twice a day just what they will eat up clean. Clean out any feed left in the trough after each meal. Dust the birds for lice before starting and again before killing.

IT PAYS TO FINISH POULTRY

Even with the present high price of feed no one can afford to sell birds and especially cockerels, in a thin condition. The good prices received for poultry meat more than pay for the extra feed, and if there ever was a time when birds should be finished, it is now.

As a war measure the marketing of thin chickens should be prohibited. The most expensive part of the bird to produce and that, which is of the least value for food is teh frame. The cheapest weight for the feed fed is the flesh as it is all edible, the necssity of putting this flesh on is evident.

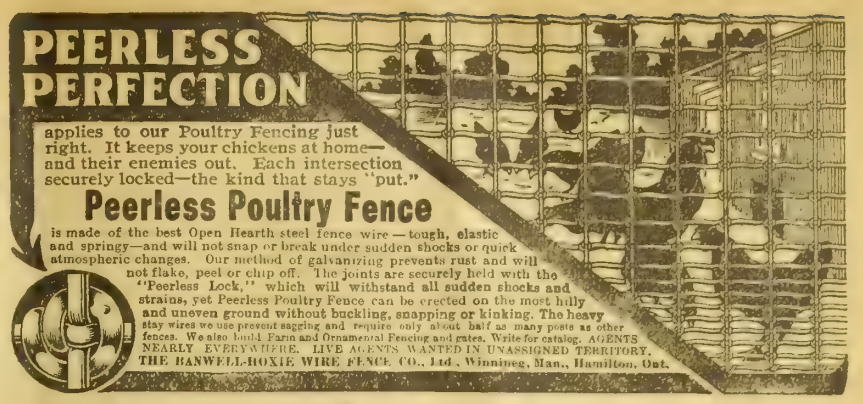
The most profitable weight at which to finish cockerels is when they weigh about 4 pounds, but even earlier birds may be fed with profit, as several experiments conducted at the Experimental Farm this summer go to prove.

Poultry meat o fall kinds has been a good price. Hens have been selling as high as roasters and broilers have paid well. Leghorn cockerels at the Experimental Farm have been sold at about 2 pounds each, and because of being specially finished on milk, brought good returns and paid well for extra feed. Four different lots marketed in August, 152 birds, weighed 280 pounds, they were fed for about ten days during which time they gained 60 pounds, weighing at the end of the feeding period 340 pounds. They consumed 180 pounds of mash and 24 gallons of buttermilk. The mash was composed of 2 parts corn-meal, 1 part middlings, and 1 part buckwheat screenings.

The cost of feed was 180 lb. at 4c per lb.—$7.20 and 24 gal. milk at 5c per gal.—$1.20, making a total of $8.40 for feed and milk. Add to this the value of the birds at the state 280 lbs. of thin chickens that would bring $35c per lb. $98.00, and it makes a total cost for thin chickens and feed of $116.40.

The weight of the finished chicks was 340 lbs., having gained 60 lbs. in the 10 days feeding. The value per lb. was increased because of the quality of the flesh to 50c per lb., making the total value of the birds $170.00.

This meant a revenue of $54.00 for the care of 152 birds for less than two weeks. It also showed that for every pound increase on the birds it took 3 lb. of mash and 4 lb. of milk or an average cost of 14c per lb. of gain.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MOULT SEASON CARE OF POULTRY

Every year at the beginning of the moulting season a great many poultry keepers become uneasy as to the way the fowls should be fed. Because of the publicity formerly given to certain systems that had as their object the hastening of the molt, there still exists, on the part of many beginners, a tendency to try out such schemes.

A few years ago careful tests were conducted by one of our leading poultry experiment stations with a view to determining the real value of the different feeding systems advocated in connection with the molting season. The results showed that it did not pay to hasten the molt—that the hens that were continued on the regular rations made a better showing at the end of the year than did those fed by a special process.

The feeder who is anxious to keep his birds in good condition during the molting season should continue the regular rations with one or two slight changes.

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WOMEN'S INSTITUTE SECTION

This section of the Maritime Farmer will be devoted to the interests of the Women's Institutes of New Brunswick. We respectfully solicit contributions from all branches, touching upon matters of general interest. We wish the members of all branches of the Women's Institute to feel that the Maritime Farmer wishes to fully assist them. The Maritime Farmer is the official organ of the Women's Institute of New Brunswick. We would suggest that YOUR BRANCH name a press committee, so that news from YOUR BRANCH may reach other branches.

STRONGLY SUPPORTS MARITIME FARMER

The following contribution was received from one of the leading workers in the Women's Institutes'.

The adoption of the Maritime Farmer as the official organ of the New Brunswick Women's Institute, is a long stride in a right direction. This Province has wasted too many years floundering along behind other older and larger and more assertive Provinces; too much of its time and money have gone towards supporting outside interests to the neglect of its own; it has been altogether too good naturedly content to accept dictation from any self-qualified source; but this action predicates an awakening and a determination to apply remedial measures. New Brunswick's organized women realize its qualifications for leadership; they have set the pace in turning their subscription dollars to the support of a home journal, owned and published in the Province, with aims and objects identical with their own and devoted to provincial interests and provincial problems.

The Institute is a big and growing organization, a co-ordinated body with groups of active, energetic workers all over the province, all units working together, in the best interests of New Brunswick. They realize their obligation of contributing their bit to the work of reconstruction and to that end of studying the various problems that will arise after the war—social, industrial and commercial. The co-operation of the Maritime Farmer, along these lines will be incalculably valuable. Their advocacy of a Maritime union preparatory to nationalization of Institutes, bringing town and country women together in an exchange of ideas and opinions, and many other things, can be effectively done through the columns of the Farmer.

Altogether, the Institute is to be congratulated upon a move which is bound to be far reaching in its consequences, and the Maritime Farmer upon the recognition by an important body of women of its provincial worth.

AN INSTITUTE MEMBER.

The beauty of the house is the order;
The blessing of the house is contentment;
The glory of the house is hospitality;
The crown of the house is godliness.

HOUSE OF CORRECTION

Had Ralph Cochran come across Jeffrey Blake anywhere except in the surge of the city's homeward bound traffic he might have thought twice before grasping his old chum's hands and exclaiming: "Come on, my train's pulling out. You've got to come home with me!"

Under other circumstances perhaps Jeffrey also would have hesitated. He was uncertain how he would take it to see Ernestine another man's wife, even though that man was Ralph Cochran.

"Unexpected company! Rule three broken!" groaned Ralph suddenly.

"What in——" began Jeffrey.

"The tragedy and the comedy of my married life! It'd be mostly tragedy if it wasn't for Cis. She's the only one that isn't afraid."

"You've changed some, old chap. You used to talk intelligently. Has happiness gone to your head? And how is Ernestine?" Jeffrey tried to make the enquiry sound casual.

"It's this everlasting trying to toe the mark that's gone to my head," said Ralph. "Ernestine's never anything but all right. Now ask about Cis. I have a suspicion that there's just one man in the world for her."

"There's nothing so remarkable about that. Let's smoke."

Ralph shook his head. "Dasn't. She'd smell it."

"You've not given that up? I say!"

"Rule one," grimaced Ralph. "But, Jeff, why don't you take an interest in Cis?"

"Frankly, Ralph, I never could even see that shockheaded cousin of Ernestine's. I detest a woman who doesn't keep herself up to the notch. Her hands are generally grubby. Why, I remember Cis coming to one of the picnics with the top of her shoe fastened with a safety pin where she'd lost the buttons off. And you can champion Cis when you have such a model as Ernestine!"

"Ernestine never in all her particular life had a single hair of her head out of order. I suppose all the men were so crazy about her because she seemed to embody all the virtues of the model women of all time. But, old boy, you don't have to live up to all this perfection."

"More's the pity!" said Jeffrey in an undertone.

"But Cis was only a kid then," continued Ralph. "I remember it. She sat down on her feet and wouldn't join in anything until I wormed out the reason. She said the buttons burst off when she was flung playing crack the whip. She didn't start out to the picnice that way."

They stopped before a small, neat house.

"It's muddy, so we'll go the back way," explained Ralph. "That's rule 5. And clean your feet on this mat—rule 6."

"You seem to live by rule," joked Jeff.

"I do," replied Ralph. "And Ernestine lives by ruling. Observe the slip of paper tacked to the kitchen door; likewise, there is one next to my chiffonier. Those are the Ernestine rules that shape my course of conduct."

"For pity's sake, Ralph, what are you doing out there?" interrupted a high-pitched voice that failed to recall the Ernestine Jeff had been regretting. "Are you scraping the mat to pieces? You've eben there long enough to let the supper get cold."

"I've brought Jeffrey Blake with me, Ernestine," said Ralph, with the hint of an apology in his voice. "I ran across him just as I was boarding my train."

Jeffrey's watchful eye detected the flash of anger Ernestine sent her husband before she turned and shook hands with him. The meeting he had been looking forward to and dreading for four years was prosaically over. So this was Ernestine as a wife—the woman who he thought had spoiled all other women for him. As he sat in the proper parlor while Ernestine made hurried changes in the supper, evidently necessitated by his presence, he heard her shrill voice railing at Ralph, who had gone to the kitchen to offer his services.

"Rule 3 says that you're never to bring company without my consent," she nagged. Ralph's reply was inaudible. "Don't sit there looking at me. It's enough for you to bring home company and making me a lot of extra work without sitting there watching me and making me nervous!" There was a movement as though Ralph were coming to join his guest, but again came the disagreeable voice. "No, you needn't go in there. Cut some more bread—thin, mind you, and don't get crumbs all over everything."

Jeffrey shifted uncomfortably in his chair. Could this be the adorable, primly perfect little Ernestine? Suppose he were in Ralph's shoes. And he so easily might have been! The querulous voice rose higher.

"Hang it! I can't stay here," muttered Jeff, starting for the door leading to the porch.

Just then Ernestine appeared to announce supper. She carefully set in place the chair Jeff had just vacated, straightened a rug and folded the paper he had tossed aside before she led the way to the table.

The supper was excellent, but it was not an enjoyable meal. Ralph splashed a speck of gravy on the fresh cloth, which brought forth a horrified exclamation from Ernestine. Jeffrey was awkwardly uncomfortable, fearing a like mishap, with the result that he upset his cup of coffee. He longed to get up and run. He wondered how he could spend an evening in this home. Home? Prison—house of correction, rather. At the thought a whimsical smile twisted his face.

But relief came. It slammed in through the front door in spite of Ernestine's "It's muddy! Go to the back door!"

"I will not!" replied a ringing voice. "I never expect you to go to my back door, and I won't go to yours. Hello, Ralph! Why——" the color slowly receded from the girl's face, and then flooded it full tide—"It's Jeff!"

Gleams of mist glistened on the hair that was still as frowsed and stubborn as Jeff remembered it of old. Her blouse was loose and fell away from a brown throat; her shoes were thick soled, low heeled—as great a contract as ever to the immaculate Ernestine, he thought as he greeted her.

"You know my rules, Cis, and yet you track up the front way with your muddy feet," complained Ernestine, still full of her grievance.

"I don't give a farthing for your rules, and my feet aren't muddy. I just came over for a second, so don't try to 'rule' me, Ernestine. I want to know if you will come to my house tomorrow to help sew on soldiers' things."

"Tomorrow's my sweeping day, and I want to start on a silk dress for myself. You know I never let anything interfere with my own work."

"Then, I'm off. I've got a stack of work ahead of me tonight. There's so much real work for us women these days that I'm trying to get rid of my little personal tasks in the evening so as to leave a big chunk of the day free. It's good to have seen you again, Jeff. Goodnight, all!"

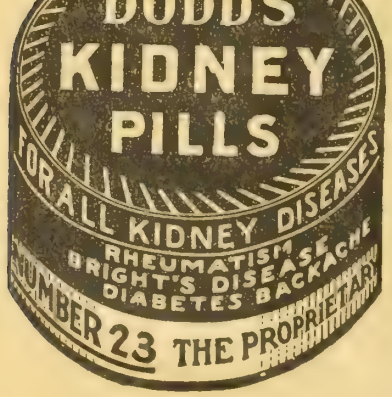
"Not so fast!" cried Jeff. "I've got to be going, too, so let me walk on with you."

"For heaven's sake tell me what are the rules?" he asked, drawing a long breath as he put her gloveless, calloused little hand under his arm. "I'm fed up on them. Am I dreaming or are they real?"

"They're real enough," replied Cis. "To begin on, Ralph was careless around the house, and he never would remember what Ernestine told him. That's how the rules started, and she's threatened to leave him if he doesn't stop breaking them."

"Which would mean a chance for him to get away from that house of correction! Must make him feel bad," laughed Jeff.

Cis giggled. "You've been their guest and you shouldn't call names,



Able to Start Work Again

Trouble Was Easily Removed

Don't be discouraged if you find that you have Kidney or Bladder troubles, and don't imagine your case is hopeless or that you will be crippled and suffer all the rest of your life.

Here is good news: Gin Pills have restored thousands of sufferers to health and strength. What they have done for others they will do for you.

Read what Mr. J. Harrop says:

"I have been crippled up so completely that I could not stand. Work was out of the question. A few doses of Gin Pills put me right. I cannot praise Gin Pills too much, and every home should have a box."

Mr. Harrop's experience with Gin Pills has been the same as thousands of others, in all parts of this continent.

Take the case of Mr. B. Milford, Galetta, Ont. Mr. Milford had been troubled with backache and kidney trouble for so long that his wife determined to find a remedy for his affliction. Having become convinced that Gin Pills were what he needed, she persuaded him to commence treatment with this well-known remedy. He did so, and surprising results were obtained almost immediately.

This is an extract from Mrs. Milford's letter:—

"After one dose of Gin Pills my husband found them to be exactly what he needed, and after taking two boxes he was completely cured."

Cases like these prove the value of Gin Pills. Try them. 50c a box at all dealers. 171

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WILL STOP THE LEAK
Don't throw away your Pots and Pans. "Vol-Peek" will mend Graniteware, Tin, Aluminum, etc., in two minutes without tools. Always keep it in the house. At dealers or from us, postpaid, 15 cents.
Vol-Peek Mfg. Co., Box 2024, Montreal, Can.

Bear Island, Aug. 26, 1903.
Minard's Liniment Co., Limited.
Dear Sire,—Your traveler is here today and we are getting a large quantity of your MINARD'S LINIMENT. We find it the best Liniment on the market making no exception. We have been in business 13 years and have handled all kinds, but have dropped them all but yours; that sells itself; the others have to be pushed to get rid of.
W. A. HAGERMAN.

Jeff. Truly Ernestine was so sought after before she was married that she never dreamed she might make a man so miserable that her going would be a relief. I don't say that it would be for Ralph. He was certainly in love with Ernestine and you were just crazy about her yourself."

"'Were' is right," said Jeff.

"Ralph needs a sympathetic wife," she went on. "He's not awfully strong. There ought to be a restful living room full of worn easy chairs hollowed into shape from much sitting in them and soft lights and a table strewn with books and papers and children around. He adores them, but Ernestine thinks they're too much trouble and get a house too dirty! I oughtn't to talk so, but I do get worked up when I see what Ernestine's doing to Ralph!"

"And what if a fellow brought home unexpected company on a muddy night?" asked Jeff.

'Well, what if he did? Is it the woman's home alone? She has company when she wants it. The days are hers. Why can't she let the husband have the evenings? Lighted windows and open doors offering to share the home spirit is what I'd want in my home!"

"Oh, Cis, I see the gleam of such a great happiness ahead of us that is makes me tremble," whispered Jeff, as he squeezed the calloused little hand.

THE KNITTING PARTY THE BOYS GAVE

The invitations were written to the girls of another class in rime:

Come one, come all, who knit, knit, kni
Come one, come all, who knit, knit, knit
At eight o'clock, that's it, it, it.
There'll be nothing to do but sit,
And knit, and knit, and sit, and knit.

Perhaps because there is a great charm in a living picture of a girl plying a domestic art—and she knows it—every girl accepted.

Musical numbers entertained the girls the first part of the evening. Each boy who did not chat with every girl for at least three minutes was to be fined. (This was not known to the guests, however.) That one little rule was instrumental in making the party very pleasurable to the unattractive or bashful girl. No one was left out. Everyone felt at home.

Knitting was finally interrupted by a motion-picture play with living characters produced by the boys at a folding doorway.

As a fitting end to such industry, the girls were then ushered to the dining room, where refreshments were so light that they were entirely consistent with Hooverizing. Place-cards were crosses made of red cardboard, edged in gold and printed in gold ink. Besides the name, on some were subjects for extemporaneous toasts, giving local applications to war terms: "Mobilization—When the Class Gets Together"; "High Explosives—Quick Tempers"; "Peace Treaty—The Golden Rule."

So industry was combined with society. Little time and money (both so precious now) were spent, and yet no evening could have been more successful.

CARE OF THE BROOM

"A good broom lasts me a year," said a farmer's wife to the editress, who was visiting her home quite recently. "In the end of the handles of my brooms I place a screw eye so that the brooms may be hung up instead of thrown into some corner. Every week the broom has a bath in the boiler after the clothes are boiled, and is then hung up to dry. This toughens the straw. Sweeping with a dry broom breaks the straws, and if hot water is poured over the broom and it is set aside a few minutes to absorb the moisture, the sweeping is much easier, for the broom is pliable and does not cause a heavy dust. After the sweeping is done the broom is again rinsed with hot water and hung up until the next time. It pays to buy a good broom and with proper care it will last a long time. Sometimes a broom is throw away when it is one-sided, or has a 'tail;' instead, it could be dipped in hot suds, laid down or hung up to dry and then would be as good as ever. It may even be trimmed very easily with the scissors or with a knife and a board."

CARE OF LAMPS

The care of lamps is the bugbear of many a woman's life. But with a little care at the proper time, and a few precautions, lamps may be kept clean and free from odors, and a perfect light be the result, and that with little trouble. By observing the following rules a good light will be insured.

Keep a piece of flannel or a few woolen ravelings in the container to collect the sediment in the oil.

Fill daily with the best grade of oil, leaving a little room for expansion when the oil becomes warm.

cause of odor is the clogging of the

Keep the burner clean. The common tiny holes in the base of the burner under the cap, and the crust which forms on top of the wick.

Have a good wick and be sure it fits. Trim the wick daily, cutting off the burned portion, and slightly rounding the corners.

Replace the wicks as soon as they become dirty. Wicks may be washed and dried and used again if not too short.

In extinguishing a lamp blow sharply across the top, and not into the chimney, and thus avoid smoking up the chimney. And if all this seems too much trouble remember that there is nothing that adds so much to the comfort and cheer of the home as well cared for lamps.

APTNESS IN GREETING

There is a lot of aptness needed in greeting friends and happy is the woman who has learned the pleasure in making people feel good instead of hurting their sensitive natures. If your friend wishes you to pass judgment on her size, the becomingness of her costume, or the peculiarity of her walk, she will make her wishes known, without your bluntly giving judgment at first greeting. This would be a very funny world, anyway, if all women were the same size, had the same color hair, the same type or beauty or weighed the same amount. It is an old saying when things are similar that they are as near alike as "a row of peas' and yet very few pods are opened that do not show some difference in their contents, the peas at the end of the pod often being slightly smaller and inclined to "shrivel."

If women would only learn that it is very impolite to begin to refer to one's personal appearance or adornment the minute the handshake begins, there would be a lot more true friendships.

MANICURING AT HOME

Whatever else you neglect, do not neglect your hands. Dont' argue that you have to do all the housework, and you can not cut your own cuticle and other ancient excuses. All of us have to peel potatoes and wash dishes and scrub pots this year, but when you get through this three-times-a-day task, rub into the hands and nails a little cold-cream from a jar that ought to be kept over the kitchen sink. Then wipe them dry.

Home manicuring in these days is far more simple and easily accomplished than making cake without sugar or bread without wheat flour!

Of course, no one attempts to cut their cuticle any more. It was never done successfully at home, always leaving ragged edges, which meant hang-nails and consequent annoyance. Nowadays you use a cuticle remover. You simply wrap a piece of absorbent cotton about an orange stick, dip it in this liquid and in a few minutes you can rub away all the excess cuticle which has grown about the base of the nail. No scissors are necessary and no hang-nails are possible. You can get a little home manicuring outfit for about a dollar that will answer almost every purpose. And by spending ten minutes a day on your hands and nails you will get a better and more permanent result than by neglecting them all the week and then spending an hour on them all at once.

When your work is done for the afternoon, and again when you are ready to sit down after the evening's meal is over, rub a little paste on the nails and polish with a buffer on which you have rubbed some of the nail-powder which comes in all manicuring sets.

If you rub each nail twenty-five times you will have a beautiful polish. Do this in your spare time every day and keep ugly hands away.

Mary, from the city, watched the farmer's wife plucking the duck for the morrow's dinner. Mary was interested in farm life. "Please, ma'am," she asked, "do you take off their clothes every night?"

HER LITTLE GIRL
COUGHED UNTIL
SHE FAIRLY CHOKED.

Mrs. John Reinhardt, Ridgetown, Ont., writes:—"My little girl at the age of a year and a half old had an awful cough. She would cough until she would fairly choke, and I was afraid it would go to her lungs. I thought I would use Dr. Wood's Norway Pine Syrup, as I knew of quite a few persons who had used it with good results. I am glad I did so, as I only used one bottle. It is a sure cure for coughs and colds."

There is no reason why Dr. Wood's Norway Pine Syrup should not be recognized as the very best cough and cold remedy on the market to-day, combining as it does the lung healing virtues of the Norway pine tree, to which are added wild cherry bark, squills, and other soothing and healing pectoral remedies.

It has stood the test for the past 30 years and is becoming more generally used every year on account of its great merits in curing coughs, colds, bronchitis, croup, whooping cough, asthma, sore throat, and preventing pneumonia and in many cases consumption.

So great has been its success that there have been a great many imitations put on the market to take its place. See that none of these so-called "pine syrups" are handed out to you when you ask for "Dr. Wood's." The genuine and original is put up in a yellow wrapper; three pine trees the trade mark; price 25c. and 50c. Manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

RELIEF AT LAST

I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
Address
MRS. M. SUMMERS, Box 309
Windsor, Ont.

A NERVOUS WRECK

FROM HEART AND NERVES.

There are many people at the present time whose nerves are unstrung, heart affected, and general health impaired.

To such we offer Milburn's Heart and Nerve Pills as the best remedy that science has produced for such troubles. These pills have a wonderful effect on the nerve cells of the body, giving them new life and energy; they strengthen and regulate the heart and make the blood rich and nourishing.

Mr. Joseph Daly, Wolfe Island, Ont., writes:—"I have used Milburn's Heart and Nerve Pills. I was a regular nervous wreck from my heart and nerves. I saw your advertisement in the paper and decided to try your pills. I took five boxes of them, and now I am as steady as a clock.

People said I could not be cured, but I fooled them with Milburn's Heart and Nerve Pills."

Milburn's Heart and Nerve Pills are 50c. a box at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

IRONING DAY MADE PLEASANT

Quick, easy ironing requires a well-padded board that stands as firm as a rock. Several thicknesses of old blanket or heavy canton Flannel make it easy to produce a smooth surface on the garments with little expenditure of strength. REMEMBER that well padded boards reduce work.

Almost every housekeeper knows the usefulness of a pad for making embroidered work look its best. A long Turkish towel folded double over this pad makes fine lawn and muslin gowns with trimmings of embroideries and lace come from this surface beautifully and easily ironed.

The tedious task of ironing between the buttons of waists is quite done away with in this way too; just one passing of the hot iron over the waist as it lies on the pad button side down, is all that is necessary.

The dainty girl who loves just the suggestion of perfume about her clothes, gets a great deal of satisfaction from a little powdered orris-root, sprinkled between the folds of the towel on which her cloths are pressed. The fragrance imparted in this way is delightfully sweet and dainty.

A well-padded sleeve board is a great help in ironing gowns, the appearance of which depends so much upon the sleeves.

In families in which the weekly wash contains many skirts, a skirt board is a necessity; and a shirt board too if there are lots of those articles. Women who have to make a long narrow board do service in ironing short sqatty things like shirts welcome the shirt board too. It is well to have a boar dthe exact length of the skirts to be iron, rather than use a too short one and iron the skirt in relays.

How to Pad the Boards.

The lack of these two things so easily and inexpensively supplied has made many a housekeeper dislike this work, and left her exasperated and cross after doing it. Each board should have two covers to be used on it alone. When one is taken off to be washed ti should be replaced by the other, so that the board will always be ready for use.

Padding should be tacked to the other side to prevent the cover from wrinkling under the action of the iron. All the edges are hemmed and small brass curtain rings are sewed at intervals of three inches all the way around. About six inches from the right end of the board, on the upper side, round headed brass tacks are driven in nearly as far as they will go. Enough space is left between the tops and the board so that the rings meant to be slpiped over them will be held in place. On the other side is a similar tack to which is fastened a stout cord. The right hand end of the cover is adjusted over the tacks. Then this cord is laced back and forth through the rings on the long sides of the cover and at the remaining end, and when all is properly adjusted and the upper side smooth, the cord is pulled tight and securely tied underneath the board.

Have Clothes Bars at Hand

For 15 cents you can buy a little device designed to sprinkle cloths evenly, and for less than that a whisk broom that will serve two purposes—that of dampening the clothes and also pulling out any fringe before ironing.

Clothes bars will cost you more than either of these two articles, but as they save many steps, should be found in every household. These bars should be placed at the left of the ironing board, with the basket of dampened clothes so near that with one motion the ironer can hang up the ironed garment and take up another to iron.

Wear your ironing apron while ironing. In the pocket have buttons and a spool of thread, and a threaded needle under the board. If for any reason you have to wait for the iron to heat, you can sew on a few buttons or mend a bit of embroidery.

"Copied from April, 1913 Women's Magazine."

He Says He Owes His Life to Them

NEW BRUNSWICK MAN'S TRIBUTE TO DODD'S KIDNEY PILLS

After Years of Suffering Mr. George Rabits Tells How He Found Relief in Dodd's Kidney Pills.

Upper Rexton, Kent Co., N. B.—Oct. 20th (Special).—"I believe that only for Dodd's Kidney Pills I would be dead."

That statement is made in all sincerity by Mr. George Rabits, a well-known and respected resident here. And those who know the suffering he has endured are not surprised that Mr. Rabits is so enthusiastic in his praises of Dodd's Kidney Pills.

"I suffered greatly from urinary trouble," Mr. Rabits says, in speaking of hi stroubles. "I had cramps in my muscles, and when I worked all day I hardly knew how to sit down at night.

"I could only get to sleep for a little while at a time, and then I had all kinds of bad dreams.

"I was weak and nervous, with a heavy, dragging feeling across my back. I could see specks floating in front of my eyes, and I was often dizzy.

"I tried doctors, but there was no help for me, so I tried Dodd's Kidney Pills. I have used about twenty boxes, and I am almost cured. I think they are the best medicine I have ever struck, and my wife finds them a wonderful pill. She says she will never be without Dodd's Kidney Pills."

Mr. Rabits' troubles all came from his kidneys. If you have any one of them, try Dodd's Kidney Pills, or ask your neighbors about them.

PEAS FOR WINTER DINNERS

Few experiences are more exasperating to a housewife than, after putting away dry peas for winter use to find worms and weevils have already dined so well that what is left is unfit for use.

Perhaps this may prove a remedy, as one woman found it very successful. After shelling the peas, pick out all those which have black spots on them, as these indicate peas containing the germs of either weevils or worms, and probably both; also the broken ones, then fan out chaff as cleanly as possible. Pour in shallow pans and set inside the stove with the damper turned to throw the heat on the bottom, and keep them there for thirty minutes at a temperature hot enough to bake bread. Every ten minutes the pans must be shaken in order to heat them evenly and prevent those on the bottom from scorching.

Clean glass fruit jars, wipe dry, and set on the front of the stove to become heated, while the peas were in the oven. At the expiration of the thirty minutes pour the peas in the heated jars, and seal as in canning fruit or fresh vegetables, always using new rubbers.

This process will not render the peas more difficult to cook. An hour of steady boiling will reduce them to mealiness. Like any other dry vegetable, however, they require from three to four hours of soaking before being cooked. This method is not only easier than canning fresh peas, but calls fo rfewer containers, as dry ones are less bulky.

CUT THIS OUT

Paste on a neat sheet of paste board, and hang it in your kitchen near the work table.

Handy Measures

One small teacupful flour equals about ¼ lb.;

One small cupful soft sugar equals about ¼ lb.;

1 small cupful sifted sugar equals about 0 oz.;

1 small cupful grated cheese equals aout 3 ozs.;

1 small cupful breadcrumbs equals about 2 ozs.

1 tablespoonful flour equals about 1 oz.

1 desertspoonful butter equals about 1 oz.

½ pint of liquid equals about 1 breakfast cupful or 2 small teacupfuls.

4 teaspoons liquid equals 1 tablespoonful.

3 teaspoons dry material equals 1 tablespoonful.

4 teacupfuls equals 1 quart.

How Much To Use

Use 1 teaspoonful soda to 1 pint sour milk.

Use 1 teaspoonful soda to 1 cup molasses.

3 teaspoonfuls baking powder (level) to 1 quart of flour.

½ cup yeast or ¼ cake compressed yeast to 1 pint liquid.

1 teaspoonful extract to 1 loaf cake.

1 teaspoonful salt to 2 quarts flour.

1 teaspoonful salt to 1 quart soup.

1 scant cupful liquid to 2 full cups flour for bread.

1 scant cupful liquid to 2 full cups flour for muffins.

1 scant cupful liquid to 1 full cupful of batters.

1 quart water to each pound of meat and bone for soup.

JELLY PULP

Don't throw away the pulp left in the jelly bags after the clear juice has drained out, says the United States Department of Agriculture. Although federal laws prohibit the use of this substance for commercial purposes, because it might masquerade as a whole-fruit product it is thoroughly wholesome, and there is no reason why it should not be put to family use. Fruit paste, for instance, is a most satisfactory product that can be made from the fruit pulp.

Fruit paste is a type of confection or dessert and may be made from apricot, quince, gooseberry, apple cherry, plum, kumquat, guava and other fruits. For apricots, gooseberries and other acid fruits use I pound of powdered sugar to 1 pound of fruit pulp; for quince use ¾ pound powdered sugar to each pound of pulp; and for apples ½ pound powdered sugar for each pound of fruit pulp. If desired, pulp from several kinds of fruits may be mixed. If acid fruits predominate in this mixture, use approximately 1 pound of sugar to 1 pound of fruit mixture; if sweet fruits predominate, use less sugar.

Rub the fruit pulp through a puree strainer and weigh it. Add the sugar, put the mixture over a slow fire, and cook until it is very thick, so that when a spoon has been passed through it the mass does not run together immediately. Pour the paste in a half-inch layer on flat dishes, marble or glass slabs, which have been rubbed with a cloth dipped in a good salad oil. Expose the dishes to draft for a couple of days and then cut the paste into figures. If the paste is well boiled down, it is dried more easily. The paste also can be cut with a common knife or with a fluted vegetable knife, or it can be cut in round cakes, the

LET a woman ease your suffering. I want you to write, and let me tell you of my simple method of home treatment, send you ten days' free trial, postpaid, and put you in touch with women in Canada who will gladly tell what my method has done for them.

A MESSAGE TO WOMEN!!

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me to-day. Address:
Mrs. M. Summers, Box 309 Windsor, Ont.

MINARD'S
"KING OF PAIN"
LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

Rheumatism Entirely Gone

After Twenty-Seven Years of Suffering—Swelling and Puffiness Has Disappeared—Not a Pain or an Ache Left

A most astonishing cure of rheumatism and eczema has eben reported here, and Mrs. Ray is enthusiastic in telling her many friends how cure was effected.

Rheumatism and eczema frequently go together, and in this case caused the most keen distress imaginable. All the swelling and puffiness resulting from many years of rheumatism have disappeared, and there is not a pain or an ache left.

Mr. G. H. Ray, R.R. No. 1, Kincardine, Ont., writes: "Mrs. Ray has been using your Kidney-Liver Pills. She was very bad with rheumatism and eczema, and had had that fearful itch for twenty-seven years. It was simply terrible what she suffered. I persuaded her to try $1.00 worth of Dr. Chase's Kidney-Liver Pills. She is now on the last box, and let me tell you she scarcely knows herself, she is so free from both these diseases. All the swelling and puffiness caused by the rheumatism has gone away, and she has gone down in weight 18½ pounds. She never has an ache nor pain, biliousness nor sick headache all these months. She often says herself 'How glad I am that I know what to do instead of paying doctors so much to make me worse.'"

There is only one way that the poisons in the blood can be cleaned away and the cause of pains and aches removed, and that is by the healthful action of the kidneys, liver and bowels. Because Dr. Chase's Kidney-Liver Pills act directly and specifically on these organs and insure their activity they remove the cause of rheumatism and other dreadfully painful and fatal diseases. One pill a dose, 25 cents a box, all dealers or Edmanson, Bates & Co., Limited, Toronto.

Look for the portrait and signature of A. W. Chase, M.D., the famous Receipt Book author, on the box you buy.

center of which is again cut with a smaller circular cutter; there will thus be both rings an dsmall round cakes.

SANDWICHES FOR WAR TIME

The following recipes for sandwiches may be found useful in preparing the "basket" for the picnic or the school lunch basket. Be sure to wrap them in waxed paper or a napkin rung out of water. This will keep them fresh and attractive.

Use brown bread for the substantial portion, with any of these fillings:

1. Hard boiled eggs chopped, seasoned and well moistened with melted butter and vinegar to which a speck of mustard has been added.
2. Baked beans mashed smooth and mixed with salad dressing.
3. Flaked fish and chopped cucumbers with salad dressing.
4. Chopped peanuts and banana pulp, with a little lemon juice or salad dressing.
5. Minced celery and apple mixed with salad dressing.
6. Chopped nuts of any kind, well moistened with salad dressing.

Put lettuce leaves between also.

7. Cooked and pulped figs or prunes.
8. Jam or orange marmalade.
9. Creamed cheese alone or mixed with chopped nuts.
10. Lettuce, cress, sliced cucumbers or tomatoes, with plenty of good salad dressing.

CURED HIS RUPTURE

I was badly ruptured while lifting a trunk several years ago. Doctors said my only hope of cure was an operation. Trusses did me no good. Finally I got hold of something that quickly and completely cured me. Years have passed and the rupture has never returned, although I am doing hard work as a carpenter. There was no operation, no lost time, no trouble. I have nothing to sell, but will give full information about how you may find a complete cure without operation. if you write to me, Eugene M. Pullen, Carpenter, 5543 Marcellus Avenue, Manasquan, N. J. Better cut out this notice and show it to any others who are ruptured—you may save a life or at least stop the misery of rupture and the worry and danger of an operation.

THE MOUTH THAT SMILES

You can keep father time at bay a long time with a smiling mouth, and you can add necessary years with a drooping mouth.

The expressing of whole face is old, unhappy and ugly. Then smile without showing the teeth. Don't you look years younger and far more attractive?

Some people possess this capacity naturally, but anyone can make an attempt to cultivate it.

The aging lines about your mouth are purely habit. You allow the muscles around your mouth to sag through indulging in discontent and ill temper.

Everyone can feel without consulting the mirror, when the mouth is drooping and then is the time to correct the downward curve of the muscles. Curve the lips upward in a smile. Then damp fix a piece of plaster cut the shape of a half moon, on either side of the mouth.

Leave them in this position for several hours, if worn during the day, or they can be applied at night and left on till morning whichever is most convenient.

WHEATLESS LAYER CAKE

¼ cup oleo, ½ cup sugar, ½ cup corn syrup, 2 eggs, eaten separately, 1 cup milk, 5 teaspoons baking powder, 2 cups barley flour, ½ cup rice flour, 1 teaspoon vanilla.

Cream oleo and sugar together. Add syrup and beaten egg yolks. Sift dry ingredients and add alternately with the milk to the first mixture. Fold in stiffly beaten egg whites last. Bake in two layer cake tins in a moderate oven for twenty minutes. Spread with currant jelly and sprinkle with cocoanut.

BARLEY COOKIES

1 egg, ¼ cup melted fat, ¼ cup milk, ½ cup molasses, ¼ cup brown sugar, 1½ cups barley flour, ½ teaspoon soda, 2 teaspoons baking powder, ½ teaspoon salt, 1¾ cups bran, 1 cup chopped nuts or raisins.

Beat egg, add fat, sugar, molasses and milk. Sift dry ingredients together and add. Beat well, stir in bran and raisins. Drop from tip of spoon into greased pans. Bake in moderate oven about fifteen minutes.

CREAM SPONGE CAKE

2 eggs, ½ cup sugar, 1 tablespoon cold water, 3 tablespoons corn starch, 1/3 cup flour, ¼ teaspoon salt, 1 teaspoon baking powder, 1 teaspoon lemon extract.

Separate egg white and yolk. Beat yolks until light colored, add sugar and continue beating for three minutes, then add water. Sift flour, salt baking powder and add to first mixture. Fod in stiffly beaten egg whites last. Bake in moderate oven about thirty minutes.

WHEATLESS COOKIES

1¼ cups corn syrup, 1/3 cup fat, 1 egg, beaten, ¼ cup milk, 1½ cups corn flour, 1 teaspoon salt, 3 teaspoons baking powder, ½ cup chopped nuts or raisins, 1 teaspoon flavoring.

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Cream fat and work with the syrup until smooth. Add egg, milk, then sifted dry ingredients. Stir in nuts and flavoring last. Drop from teaspoon on greased pan, about two inches apart. Bake in moderate oven about twelve minutes.

FASTENING KNIFE HANDLES

To make loose knife-handles fast, fill the cavity in the handle two-thirds full of resin and powdered bath-brick mixed. Next heat the shaft of the knife until very hot and press into the handle. The resin will solidify and when it hardens the handle will be firm.

CARROT CARAMELS

1 cup grated raw carrots, 1 cup corn syrup (crystal) 1 cup sugar, 1 teaspoon vanilla, 1 tablespoon butter, ⅛ teaspoon salt, 2 squares chocolate, grated or cut fine.

Mix all ingredients except vanilla. Heat slowly until sugar is dissolved, then boil until a little of the mixture forms a firm ball in cold water. Remove from fire, ad dvanilla and pour into a well-oiled pan. Cut in squares when cold. The mixture will be very thick when it is ready to take from the fire and must be stirred continually to prevent its burning.

TIMING AN OVEN

Set the alarm clock to go off at the time bread or cake should come out of the oven,—that is, if you are very forgetful and subject to burning things.

An old boiler may be made to serve as an oven on the oil stove. Place it on its side, place the article to be baked in it, then put on the lid.

Knit Socks and Dollars with the Auto Knitter

Profitable employment at home in war or peace time

Socks—more socks—the Soldiers' call! The hosiery industry is booming and the demand far exceeds the supply. Help us fill it but get away from slow hand knitting. Use the fast, reliable, modern Auto Knitter. We gladly take all the socks you wish to send us and pay you highly profitable prices.

The Auto Knitter is simple and easily learnt—and secures a big income for full or spare time work right in your own home and no previous experience is essential.

Write today for full particulars enclosing 3c stamp. See what good money you and your family can earn at home besides doing patriotic work.

Auto Knitter Hosiery (Can.) Co., Limited, Dept. 475B 607 College St., Toronto.

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Just mail your cheques to us—we deposit them to your credit and send you a prompt acknowledgment.

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We understand the farmer's problems and gladly assist him in every way possible.

We will welcome your account.

Paid-up Capital $ 6,500,000
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We invite your account. Special facilities for banking by mail. Thirty-three branches in New Brunswick. Head Office. Halifax, N.S.

7A

BE CHEERFUL AT MEAL TIME

What do you talk about at the table? Women too often make the dinner table a dumping ground for all their woes. Other times it becomes a sort of inquisition and stocks for the children. They are cross-examined, threatened and scolded. That's a very common form of meal-time conversation and it's a shame that it should be so.

The dinner table should be positively the last place selected for fault-finding and scolding. Even in the matter of training in civilized procedure with table tools there are more effective a swell as pleasanter methods for making the children conform than nagging. Try a series of rewards. or if that doesn't work, have the offender leave t hetable, or deprive him of a treat. Do it firmly and without calling attention to his lapse and making it a topic of conversation.

It takes a little effort to refrain from the woeful or unpleasant in conversation. And practice is required to enable you to switch the subject when it seems inclined to stick to horrors. No good comes of dwelling on the war and the horrors it is bringing to so many. The tragedies will have to be borne with the best grace possible. Depressing yourself and others by gloomy talk isn't playing the game fair.

It would be real patriotism if every young married couple would resolve from the very beginning to cutivate a cheerful atmosphere at meal time. Whatever makes life in the community finer is genuine patriotism. Just at first it would not be so difficult, probably, and once the habit is firmly established it will hold under the strain o fthings gone askew. The minor tragedies and tangles will have to be talked out some time, and the interlude of a cheerful meal will help to smooth them out.

The habit of pleasant talk at the table and postponing unpleasant matters until irritated nerves and tired muscles have been soothed and rested by food and a calm atmosphere would stave off a great many family jars and make home a place of pleasanter memories than is usually the case. And it would add immensely to health and happiness.

COMMON ACCIDENTS OF YOUNG CHILDREN

Accidents are so common among young children that mothers should make it a point to become well versed in first aid remedies.

Wounds—Whenever the flesh is broken it is wise to apply tincture of iodine as soon as possible to the break if the wound is small and then to cleanse the part with clean boiled water. Washing out the part first with hydrogen peroxide or water is a bad plan, for germs from the surrounding parts are likely to be carried into the depths of th ewound or cut.

In large cuts, wounds, or burns the importance of keeping the injury clean and free from germs is even more urgent. The clothing should be cut away from the injured part and the wound exposed to the air. After the bleeding is controlled by means of pressure on the adjacent blood vessels the wound may be covered by a sterile dressing or left exposed to the air, which cannot injure it, until the dressings are prepared. Such an injury must be handled as little as possible until the hands of the attendant can be sterilized by scrubbing them with hot water, soap, and a scrubbing brush for five minutes and then soaking them several minutes in an antiseptic solution.

Bumps and Bruises.—These are perhaps the commonest injuries which young children receive. A slight bruise ordinarily requires no treatment, and is forgotten in a few minutes, although the discoloration of the skin may remain for some time. If the injury is more severe, cloths wrung out of very cold or very hot water. or cracked ice wrapped in a cloth, may be applied to the bruise. Either alcohol or witch hazel, each diluted wtih water may be used upon a bruise. If the skin is broken it should be treated as a wound.

DRY CLEANING DONE AT HOME

Dry cleaning done by a professional cleaner is expensive, much too expensive for the length of time any dry-cleaned garment stays clean. But the thought of doing it at home immediately suggests gasoline, always dangerous and of a fragrance that lingers most astonishingly. But there are many cases where cleaning can be done quite as well with something else. The materials required are very simple—fuller's earth, block magnesia, goracic talcum powder, flour and borax, or even plain corn meal. The first three can be bought by the ounce or pound from any druggist, and the others are always in the pantry or store chest.

For a white suit or gown it is perfectly safe to use either the meals or talcum powder. A white serge suit can be successfully cleaned by putting it into a dry, clean tub and cover it over with corn meal slightly salted. The suit can be rubbed with the hands exactly as if it were in soap suds, the most energetic rubbing naturally being given to the spots which are most soiled. After it has been thoroughly gone over, the meal should be thrown away and the suit covered with clean meal. It should be left there for two days with a cloth over the tub to keep out the dust, and then shaken out and brushed with a perfectly clean brush.

For finer materials, such as silk or cashmere, it is better to use flour and borax, mixing one-quarter of a pound of the borax with a pound of the flour. In this case the material should not be rubbed with the hands, but with a soft. clean brush—one of the little wooden-backed face brushes that can be bought at any druggist's would do very well. Rub very thoroughly over the entire garment, then shake all the loose powder out and rub the garmnt again with clean powder. Leave this on for three days and then shak: the garment and beat out all the powder. If the work has been thoroughly done it will look as it did when new.

When it comes to delicate laces it is better to use the boracic talcum pow-

Ranges, Furnaces, Stoves, Utensils, Implements

The "ALAMO" is a splendid small steel range, particularly suitable for newely-married couples, elderly couples, and persons doing light-house-keeping.

The Smith Foundry Company, Ltd.
FREDERICTON, New Brunswick

"Unto the least of these"

RIVET your eyes on this picture of a Belgian mother and child, until you feel the full horror of the situation! Thousands of these orphans, dying of starvation, might now be living in comfort and plenty, had their soldier fathers not flung themselves into the breach when the Hun invaded Belgium.

The fathers died to save us. Are we going to let the orphans starve?

Conditions are simply ghastly. The United States loans to the Belgian Government finance the general relief work, but this only provides a bowl of soup and two pieces of bread to each person per day.

What is that for a growing child?

The Slaughter of the Innocents is less terrible than what is now occurring in Belgium—practically a whole generation of the Belgian nation in the grip of Consumption, Rickets and other ills all directly due to insufficient nourishment.

The Canadian Bureau in Brussels will administer funds, and provide means for getting the ailing children into Holland and into orphanages where they can be saved from a hideous death.

Before you sit down to another meal, do SOMETHING for the Belgian children. . . . . .

Make cheques payable and send contributions to

Belgian Relief Fund

(Registered under the War Charities Act) 115

to your Local Committee, or to

Headquarters: 59 St. Peter St., Montreal.

der. The lace should be pinned to an ironing board, covered with a clean sheet, and the powder rubbed in with a new tooth brush. The lace should be turned over and teh work done very carefully and thoroughly on both sides. After all the brushing in is done, cover the lace with fresh powder, shield from the dust and leave it for two days. It will then be ready to shake out and press.

BEGINNING RIGHT

Sometimes I hear mothers asking what to do with a child who has a serious fault of one kind or another. Now we all know that no mother can make a child perfect, but I have often wondered if we could not do better by beginning right at the beginning of things. It seems hard to be severe with a tiny child, but even if severity is necessary, is not a little bit of it at the right time better than a great deal of it later, or better than a great deal of fault in the child? Just firmness will often do in the beginning what severity will not accomplish later.

A lady I know very well would now and then spank her baby daughter, and justified herself with this argument, "If I get her into the habit of obeying me before she is two years old, she'll have the habit, but she won't remember the spankings, for I mean to get past them before she is old enough to remember. It will save no end of friction in the future." Results proved her wisdom, too, for though her daughter was not a marvel of perfection, she was manageable all the way along, and was not unendurable because of a too prominent fault.

Another mother who was too tenderhearted and somewhat careless withal, was often heard saying of her six-year-old son, "I cannot keep him at home half the time. He will go where he pleases, and I never know whether I'll find him." When that son first began to run about the piazza and yard the mother would sit absorbed in a book or conversation, not knowing where her baby was; he often wandered entirely out of sight. When she awoke to the situation there was a hunt, a great- to-do, but nothing more. Now, it seems to me that if that mother had been more vigilant and known where the child was and what he was doing, and had been ready to arrest him with a positive "No, no," and turned him back every time he reached the boundary line at the first, he would have formed th habit of obedince and of accepting limits.

In a certain family is a girl who never of herself gets ready in time for breakfast, for school, for doing an errand. Because of this habit she is a constant storm center, a very cyclone brewer in the family. She is really a normal child, and I am sure that if the mother had begun with her as soon as she saw signs of that special failing and given thorough treatment, the girl would have been saved from having the habit so fixed, and would have been spared some very unpleasant experiences.

I think this way about beginning well: thought it may seem a little hard for a tender bady, yet it's like putting a straight jacket on a crooked back, o ra brace on a crooked ankle—not so pleasant at first, but useful for future results. A right beginning is like sowing a little wisdom and thought and vigilance now that will bring forth many fold in the way of right habits and peace in days to come. "As the twig is bent, the tree is inclined" the old-fashioned people say. Straighten the twig now, when it can be done without a serious wrench, and the tree will grow straight.

CLEANING SOILED RAINCOAT

Choose a fair day, so that the work may be done out-of-doors. Dip the coat in cold, soft water, and spread out on a large board or table. Scrub well with a stiff brush, using soft water and white soap; when thoroughly cleaned, dip the coat several times in clear water until all suds are removed. Do not wring, but hang in the air to drip dry.

If for the past four years you have enjoyed home comfort while others have been fighting on the battlefield, shew now your keen appreciation by buying
VICTORY BONDS
TO YOUR LIMIT
CANADA MUST HAVE MONEY TO WIN THE WAR
KING COLE TEA
"YOU'LL LIKE THE FLAVOR"

A STOCKING SUGGESTION

All mothers know how hard it is to keep Jane's and Johnny's stockings drawn up tight and smooth over their winter underwear. I have solved the problem successfully by sewing a piece of inch-wide rubber banding to the leg of the drawers, in such a manner that it passes under the child's heel like a legging strap. This holds the drawers firmly in place, and stockings fit over them easily.

TO CLEAN LARD

When rendering lard in the farm kitchen I peel and slice raw potatoes and after the lard is put through a coarse meat grinder, add and cook slowly till the potatoes rise to the top. The potatoes clarify the lard and absorb the water quickly and there is little danger of burning the lard. It is done in less than half the time and is purer and whiter tha nwhen clarified by the old method.

Also the drippings of bacon and ham can be clarified in the same way, and can be used for frying doughnuts.

One pound of cottage cheese will supply as much nourishment as 1 pound of meat or 1 dozen large eggs. Use it at breakfast, luncheon, dinner or supper.

RHUBARB MARMALADE

1 qt. canned rhubarb. Skin of 4 oranges. Sugar. Add the skins of oranges cut into small pieces to the rhubarb, and sugar to taste. Cook until it measures half or about a pint.

MUSH BREAD

This ercipe is very highly recommended: One pint of scalded milk, one-half pint of meal stirred into the milk until it begins to thicken. Take off fire and stir in beaten yolks of four eggs; thoroughly mix, add teaspoon (level) of salt, then the beaten whites. Bake twenty-five minutes in rather quick oven. It must be baked carefully, or it will fall.

CRANBERRY MARMALADE

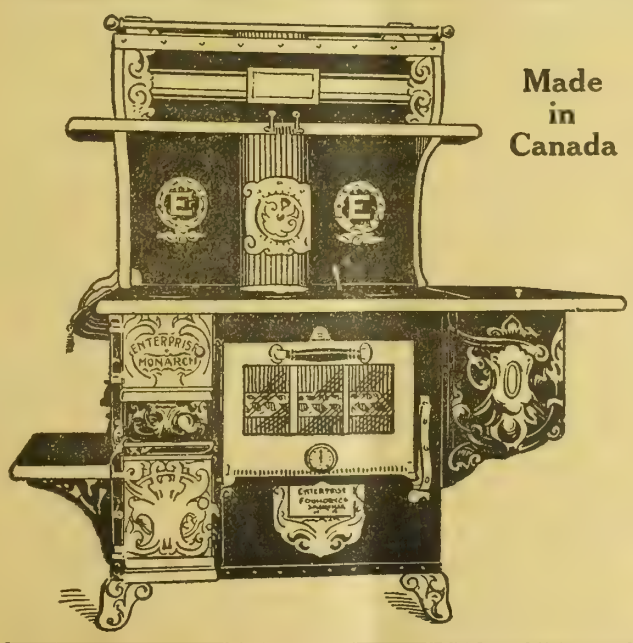
2 qts. cranberries, 4 lbs. sugar, water, 1½ lbs. seedless raisins, juice and the pulp of 3 oranges. Wash the berries, cover with water and cook until soft. Force through a sieve and add the remaining ingredients. Cook until thick. Put in glass jars. This makes three quarts.

BOILED RICE AND RAISINS

Steam one-half cup rice in one pint milk with one teaspoon salt until tender. Add one cup raisins, one teaspoon grated orange or lemon rind and three tablespoons syrup. Serve cold with or without cream.

If the master is neglectful the servant will not be diligent.

Most men figure that the lightning will strike somebody else.



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FOUNDRY CO. SACKVILLE N.B.

MARKETS.

MONTREAL

COUNTRY PRODUCE

Eggs Fairly Active and Firm—Potatoes Steadier

Montreal, Oct. 19.—A very firm feeling prevails in the local market and prices show no important change. The demond continues good from grocers and other dealers for supplies for immediate consumption, and a good business is passing in a wholesale jobbing way daily. The receipts today were 2,568 cases, as against 959 for the same day last week, and 2,309 for the corresponding date a year ago.

We quote wholesale jobbing prices as follows:

Strictly new laid eggs.....58c to 60c
Fresh selected stock.....00c to 54c
Storage selected stock.....00c to 53c
Storage No. 1 stock.....00c to 49c

A good steady trade continues to be done in honey, and the undertone to the market is firm. Supplies coming forward are not large at present, but they are ample to meet all immediate requirements. The demand is principally for white extracted in 60-lb. tins, at 27c per lb., and buckwheat at 24c to 25c.

We quote wholesale jobbing prices as follows:

White clover comb, per section.....00c to 30c
White extracted, 5 to 10 lb. tins.....00c to 28c
White extracted, 30 lb. tins 00c to 27½c
White extracted, 60 lb. tins 00c to 27c

There has been no important change in the condition of the market for potatoes of late, except that supplies on spot haev been reduced to some extent and a better feeling prevails in the market. The demand is steady and a fair trade was done in a wholesale jobbing way in Green Mountains at $2.15, and Quebec white at $1.90 per bag of 90 lbs., ex-store while car lots of the former were quoted at $1.85, and the latter at $1.65 per bag of 90 lbs., ex-track.

New York, Oct. 18.—Eggs, firm. Receipts, 9,852 cases. Fresh gathered, extras, 57c to 58c; fresh gathered regular packed, extra firsts, 54c to 56c; do. firsts, 52c to 53c; State, Pennsylvania and nearby western hennery, whites, fine to fancy, 82c to 85c; State, Pennsylvania and nearby hennery, browns, 60c to 63c; do. gathered, browns and mixed colors, 50c to 57c.

Chicago, October 18.—Eggs, lower. Receipts, 6,408 cases. Firsts, 48½c to 49½c; ordinary firsts, 46c to 47c; at mark, cases includes, 48c to 49c.

DAIRY PRODUCE TRADE

Trade in Butter Rather Quiet But Prices Firm

Montreal, Oct. 19.—The receipts of butter today were 3,442 packages, as against 1,439 fo rthe same day last week, and 723 for the corresponding date a year ago. The trade in a wholesale way was rather quiet to-day, which would indicate that buyers in most cases have ample supplies on hand for the time being, but there is a steady business passing in a wholesale jobbing way, and the undertone to the market remains firm.

We quote wholesale prices as follows:

Finest creamery.....49c to 50c
Fine creamery.....48c to 48½c
Finest dairy.....41c to 43c
Fine dairy.....39c to 40c

The following prices are being paid by the Commission for butter:

No. 1 creamery, per lb.....46½c
No. 2 creamery, per lb.....46c
No. 3 creamery, per lb.....45c

The receipts of cheese today were 7,447 boxes, as compared with 8,901 for the same day last week, and 5,882 for the corresponding date a year ago. The market was without any new feature to no.et The movement for export account continues liberal and, in consequence, there is little accumulation of stock on spot.

The following prices are being paid by the Commission:

No. 1 cheese.....25c
No. 2 cheese.....24½c
No. 3 cheese.....24c

New York, October 19.—Butter, firm. Receipts, 8,769 tubs. Creamery, higher than extras, 60½c to 61c; extras, 92 score, 60c; firsts, 57½c to 59½c; packing stock, current make, No. 2, 39½c. Cheese, firm. Receipts, 4,493 boxes. tSate, whole milk, flats, fresh, specials, 33c to 33½c; do. average run, 32c to 32½c.

THE CATTLE MARKET

Shipments of Lambs and Calves to the States and Cattle to Toronto Large

Montreal, Oct. 19.—At the Canadian Pacific Live Stock Market the offerings to-day were 200 cattle, 150 sheep and lambs, 450 hogs, and 100 calves. There has been a good demand from American buyers at this market for lambs and calves so far this week, and shipments of 13 carloads were made to New York, and one car of cattle to Philadelphia. A feature of the trade has been the demand from Canadian buyers for small bulls, of which 20 carloads have gone forward to Toronto. This has tended to relieve the market of the surplus stock coming forward, and it has also created a somewhat better feeling. The trade in cattle to-day was rather quiet owing to the small offerings and there were no further changes in prices to note. The demand was ample to absorb what stock was on the market, and sales of odd choice butchers steers were made at $12.25 to $12.50 and the lower grades at from $8 to $11 per 100 lbs. Canning bulls sold at $6 to $7, and cows at $4 to $5 per 100 lbs.

The market for small meats was also quiet on account of the somewhat limited supplies available and prices ruled steady. The demand from local buyers for small lots was fair and sales of lambs were made at $12.50 to $15, and sheep at $10 to $11.50 per 100 lbs. The tone of the market for calves remains firm with a good demand and all offerings of good to choice milk-fed stock sold at $12 to $15, and grass-fed at from $6 to $10 per 100 lbs. In sympathy with the lower prices ruling at other Canadian centres for live hogs the tone of this market continues easy and sales of selected lots were made at $18.50 to $18.75 per 100 lbs. weighed off cars.

The Baled Hay Market

Montreal, Oct. 19—The market for baled hay was without any new feature to note, prices being firmly maintained owing to the very limited supplies coming forward from the interior on account of the very bad condition of the country roads. The demand from all sources for supplies continues good, and all offerings meet with a ready sale, but the volume of business is not large. Sales of car lots of No. 1 timothy were made at $25 to $26, No. 1 light clover mixed hay at $25 to $26, No. 2 timothy at $24 to $25, No. 2 clover mixed hay at $23 to $24, and No. 3 timothy at $22 to $23 per ton, ex-track.

Millfeed and Rolled Oats

Montreal, Oct. 19.—A good steady trade continues to be done in all lines o fmillfeed, and the market is active, with a firm undertone. Sales of car lots of bran were made at $37.25, and shorts at $42.25 per ton, including bags, ex-track, and bran at $39.25 and shorts at $44.25 per ton, ex-warehouse, including cartage, less 25c per ton for

FERTILIZERS FOR 1919

We Supply Fertilizers for Every Crop and for Every Soil

Making two blades grow where only one grew before. By using Shur-Gain Fertilizers, you can increase your yields without additional land, labor, or seed.

For information and prices

Gunns LIMITED

ST. JOHN, N.B.

We would suggest the importance of an early order—it will give you the benefit of present prices and insure delivery.

Potato growers have denomstrated that commercial fertilizers scientifically used will yield a splendid profit.

We have just the grade that you require for your soil and can give you much valuable information.

We specialize on potato fertilizers and can fill your wants at prices that are worth investigating.

GUNNS LIMITED, 676 Main St., St. John, N. B.

spot cash. Pure grain moullie is selling at $68 to $70, feed cornmeal at $66, barley feed at $62 to $63, and mixed moullie at $55 per ton, including bags, delivered to the trade. There was no change in rolled oats, for which the demand was fair, and sales of broken lots of standard grades were made at $5.20 to $5.30 per bag of 90 lbs., and Golden cornmeal at $5.50 to $5.75 per bag, delivered to the trade.

PREPARING THE FLOCK FOR WINTER

The success to be obtained from the farm flock will depend very largely on the way it has been handled during the autumn months. The plan at the Experimental Farm, Nappan, N. S. is, before the breeding season opens in the fall go through the flock, pick out all the non-producers, poor milkers, or any that may have bad mouths or spoiled udders; also any that may be too old for breeding profitably, and discard them. In selecting out the breeding flock looks alone is not the only guide, as many times a ewe may be a profitable breeder yet be very thin, due to the fact that she has been brought down by a heavy milk flow. Good ewes should be retained in the flock as long as they will breed and feed their lambs properly.

All lambs not intended for breeding purposes are sold. If the market happens to be flooded it is found to be more profitable to feed them well until January or February, by putting them on good aftermath until barning time, then finish on roots and meal.

Ram lambs intended for breeding are placed in a separate field with light grain mixture of ½ pound oats; good clover aftermath and given a ¼ pound bran and 1/5 pound oilcake meal. The ewe lambs are also placed in a field by themselves, but not given much grain unless the afterfeed is poor. All breeding ewes are flushed durnig the latter part of October or the first of November. This consists in putting them in a good field of clover and giving them a light grain ration of oats, bran and a little oilcake meal. Hence the ewes made a rapid gain in flesh. There are several advantages from this practice. 1st. The ewes which are bred in a thrifty condition are more apt to throw vigorous lambs; 2nd. They are more reliable breeders; 3rd, more likely to drop twins; 4th, the flock will all breed more evenly together, which makes it much better at lambing time in that the lambs are all dropped within a short period of each other, thus making less work for the shepherd.

In selecting the flock ram it is the endeavour to choose the very best, typical of the breed and vigorous. Then he is fed well in order to keep him virile, but not too fat. He never gets grain until about a month before breeding season. He is never allowed to run with the ewes continuously, but put in with them two or three hours each day.

In dividing the pen for winter, all mature ewes are put together; shearlings in another pen and ewe lambs by themselves. The latter are not bred until one year old. Should there be any weak ones, they too are given a separate pen; otherwise they would not get a fair show at the trough with the more vigorous ones. The above method of preparing sheep for winter has been found to be most satisfactory.

OCTOBER RETROSPECT

Threshing throughout Canada is in full swing and the final estimates of the crop will soon be available. The yield per acre will vary greatly in the different provinces according as the weather conditions have been favourable or otherwise. In contrast if the returns from a series of farms in any locality were compared, the yields per acre of these farms would be found to vary much more than the average yield per acre of the various provinces. The reason for this wider diversity is not weather conditions so much as the methods employed in growing the crop and the difference in varieties and seed.

It is absolutely essential if one is desirous of improving their crop yields that they know the exact yield in bushels per acre that their fields return. Guessing will not do. There has been too much guessing about this important question and many have fooled themselves to their own detriment. Many estimate their grain on the basis of the bushels sown. This method is without practical value. For instance, oats sown at the rate of two and a half bushels will give just as large or a larger yield than oats sown at the rate of three or three and a half bushels per acre.

If a field has yielded only fifteen bushels of wheat or twenty bushels of oats, now is the time that the reason for such a low yield should be ascertained. The past season's work should be reviewed while it is still fresh in the mind. The factors that enter into the successful growing of a crop are many and varied and each should receive attention such as, the previous crop, the tillage operations, the treatment of the seed for disease, the rainfall, the variety sown, the quality of the seed, the date of seeding, etc.

Each of these should be considered until you establish in your mind just what factors are responsible for the low yield. This cannot be done intelligently unless one knows exactly what his land has returned in bushels per acre. Just as each man is able to place his finger on the weak spot in his methods during the last season so will his fields respond in bushels of grain the next. Critical retrospect is invaluable in planning the next year's operations.

WHY SOIL BECOMES SOUR

How can this sour-soil condition be avoided? It arises from several causes: The alkalinity may have been reduced by cropping the land without liming; the decaying process of the green roughage, manure and other organic matter turned in, and the excretions of the plant roots, may all have helped to set up the acid condition.

The acid condition has sometimes been charged to the continued use of chemical fertilizers, but the scientific men have exploded this theory. Doctor Wheeler, formerly director of the Rhode Island Experiment Station, says:

"It is well established that if a soil to which superphosphate has been added remains quite moist for a considerable length of time, the sulphate of lime which is associated with the superphosphate may be partly changed to carbonate of lime within the soil by processes of reduction. When this occurs, the carbonate of lime which is formed will naturally tend to lessen the acidity of the soil.

"Recently Prof. S. D. Conner and his fellow workers at the Indiana Agricultural Experiment Station, have shown that acid soils and silicates, after receiving acid phosphate, were less acid than when they were untreated. They believe this is due principally to the reaction of the phosphoric acid upon acid salts of aluminum.

"Director Brooks, of the Massachusetts Agricultural Experiment Station, has conducted field experiments with super phosphate, covering a period of many yeaes. He states that 'No injurious secondary rffects are known to eb associated with any reasonable use of dissolved phosphates.'

"This question has been studied likewise by Prof. B. H. Hite, of West Virginia University. He has tested hunderds of sample of soil from various parts of West Virginia, and reports that three-fourths of the sour soils and practically all of sourest isols in that State have never had fertilizer.

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The Maritime Farmer
SUSSEX, N. B.

"It appears, therefore, that fertilizers, which some people have been condemning because they were supposed to increase soil acidity, really lessen it and thereby actually improve their chemical reaction."

LIMIT TO USE OF CAUSTIC LIME

The danger of burning humus in the soil by using caustic lime is only when the lime is depended upon to nourish the crop in the place of fertilizer. Caustic lime will help to decompose the vegetable matter in the soil and make the plant food available for the crops' use, and if more vegetable matter is not supplied it will soon fail to give results. The burned unslacked lime is worth about double the ground limestone as a sweetener of the soil, and where the haul is long it certainly is more economical to use than ground lime. If an occasional legume crop is turned under there is little danger of exhausting the humus supply.

Wood ashes have the same tendency to burn out the humus in the soil, but who would refuse to put wood ashes on the soil for fear of burning out the humus. We have a farmer in this county who has made his farm very fertile by using wood ashes which he gets from a lumber plant near his farm. By burning or decomposing the humus in the soil, heavier crops are grown that supply more humus-making material so the humus is still kept up and the farm is getting richer all the time. A. J. LEGG.

GUESS WORK IN DAIRY A FAILURE

No breeding farm is complete without an office, or at least, a room, where the owner has a desk and conveniences for keeping records of his herd and breeding operations. No man, no matter how good his memory or how careful he tries to be in the little details of looking after his stock, can give outsiders a favorable impression of his farm and cattle unless he has accurate records to back up his claims. There has been altogether too much guesswork in breeding registered dairy cattle and keeping records of pedigrees and performances of the individuals. A small office or room where one can conduct the farm business, hold conferences with visitors or hired help, and conduct his bookkeeping and correspondence will prove of great value on the farm where registered dairy cattle are bred.

Such a room should be equipped with a good desk, a safe wheer valuable records may be kept, and different account books necessary to keep the farm and herd records. A filing system of outgoing and incoming letters will save a lot of valuable time in looking up old correspondence, and oftentimes be the means of avoiding errors and disputes over the sale or purchase of breeding animals. It is also well to have a good working library and enough current literature regarding the dairy and breeding business to keep abreast of the times and interest men who visit the farm to inspect the stock or buy breeding animals. No breeder can conduct his business intelligently unless he knows what successful breeders are doing and how they find a profitable outlet for their surplus stock. Breeding dairy cattle is no mysterious hocus pocus business, and there are no secrets that are being used to produce better stock on some farms than others. By reading what other breeders are doing a man can approximate their results on his own farm, providing he exercises equal skill in mating his animals and feeding them for development and production. W. M. K.

RUST DOES MORE HARM TO MACHINES THAN CONSTANT USE

Bill Nye was a humorist writer but said many things which were laden with considerable wisdom. One of his sayings was: "We have enough theory to save four worlds like this. What we need is a little more practice." This saying can be applied to taking care of machinery.

As all machinery has advanced so rapidly during the last year, farmers should use great vigilance in making their machinery last as long as possible. Every farmer should have a good machine shed for rust will do more damage to machinery than actual use. When I see machinery left in the field where last used or in one corner of the barnyard, I don't need to inquire the kind of a farmer that lives there. You should buy good machinery, then take care of it, so that when used ten or twelve years it will still look like new.

I never did believe that a machine shed should be used for a poultry house. Never allow machinery to stand out during rainy weather as the wooden parts will swell as well as the iron parts will rust and do more damage than weeks of careful use. A certain farmer bought a new wheat drill, and hired it to a neighbor farmer. A rain came up and the farmer unhitched from the drill leaving it in the field. The rainy weather continued for several days. The owner of the drill said to me: "Do you see my new drill standing out in the muddy field?" I said: "Do you know what I would do if that drill were mine? I would go and hitch to it and pull it home and tell him that I could consider it an accommodation if he would not ask for it again."

It does not take any longer to drive to the machine shed in the evening than it does to unhitch in the field. Should it be raining in the morning your machine will be in the dry which will give the careful farmer much satisfaction. Spend a little time in adjusting the machine so it will work right. I have seen farmers plow day after day with their plow out of alignment when a little attention would have made it run easier and do much better work. Frequently look over your machine to see if all bolts are kept tight. The noon hour is a good time to go over the binder to see if everything is properly fitted. Many breaks occur on account of some bolt getting loose and throwing some of the cogs out of alignment.

Use plenty of good oil. How much nicer a machine runs when all bearings are kept oiled. We find it a good plan to keep an oil can on each machine, then use it often. Perhaps the mowing machine is misused more than any other machine because it is the simplest in construction, yet you should carefully examine it for lost motion, for when your sickle jumps in two that will be the cause. Guards should be sharp and knives well ground then your mower will run like new. Never put machinery away broken for when the time arrives to use it again you perhaps will have to spend time to repair when you should be using it and lose many dollars, a little neglect being the cause.

Oil all polished parts to keep from rusting. There isn't much fun in spending a half day in scouring the mouldboard on the plow when just a little attention at the right time would prevent it. A few years we heard a lecture on "What I saw in the scrap heap." The lecturer told of the thousands of dollars that were wasted on account of indifference in caring for farm machinery. E. T. H.

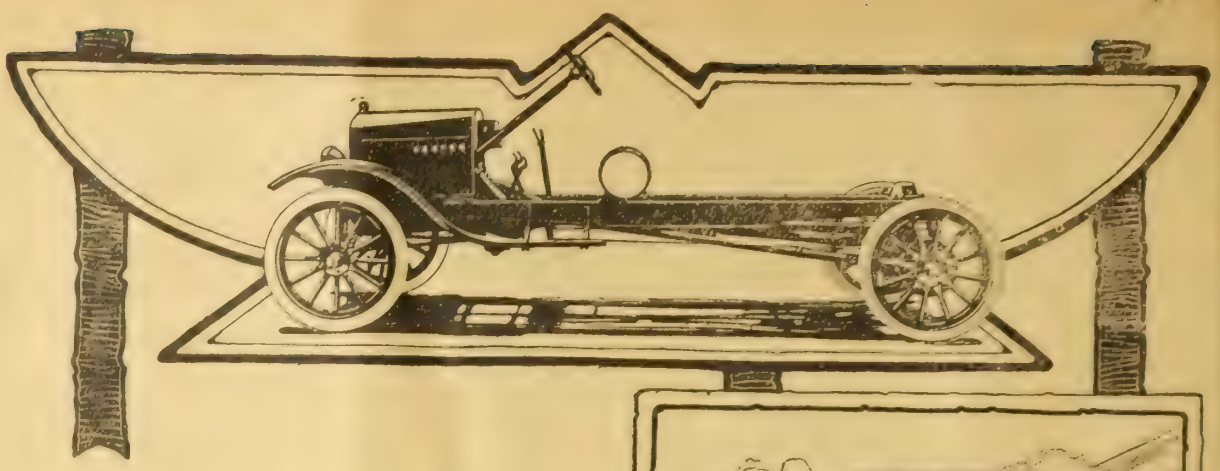
A WHITEWASH SUBSTITUTE FOR FARM PAINTING

A few years ago I spent several weeks in a village where a variety of whitewash was used as a substitute for paint, for both inside and outside work.

Many experiments had been tried to get the best results, and I learned that the formula that gave the best satisfaction was as follows: 30 lbs. lime, 10 lbs. salt, 3 lbs. rice flour, 1 lb. glue, 1 lb. whiting, together with various coloring materials, if desired, to give the required shade. These ingredients were mixed with five gallons of boiling water and stirred till cool, and stirred frequently while using in order to prevent the heavier proportions from settling to the bottom. The ingredients in this paint are the same as in that about which the inquirer asks, though the proportions vary somewhat. They make a paint costing approximately about 25 cents a gallon, at prices that then prevailed. Since it can be applied with a wide whitewash brush, the cost of application is only about one-fourth that of oil paint, and this is still further reduced by the fact that less skilled labor is required in order to do satisfactory work. The quality required, I was told, is a little more than is required of oil paint.

For outside work it gives a neat, clean appearance, and is indistinguishable, from a distance, from oil paint; but, on a closer inspection, it seems a little too glossy and it has a hard, stony appearance, instead of the softer shade which characterizes lead and oil. If applied during cool or cloudy weather it will last for about five years without showing signs of wear, but goes rapidly when once it begins to go, and, in another year, it becomes unpresentable. If applied during hot, sunny weather, it will crack and peel off in large flakes during the following season. Two coatings are necessary, and, in the former instance, if a fresh coating is given as soon as the first coatings begin to wear, the buildings may be kept in good condition, perhaps, indefinitely. But, in the second instance, the surface must be scraped before applying a fresh coating, or the peeling off will continue.

For inside work it is much superior to lime whitewash, though not as good as alabastine or muresco, when applied to plaster. But it is much better than either when applied to wood, though



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For The Farmer

PRICES of farm products have reached a high level. The farmer can take *full* advantage of this situation only by adding to his equipment of time and labor-saving machinery. Time and labor are money. When time and labor are saved, money is saved.

Time and labor-saving devices for working the land do not produce complete results in themselves. The farmer must have rapid and dependable means of placing his products on the market.

The Ford One-Ton Truck will make trips to town so much more quickly than the horse that you will have many extra hours of time to devote to productive work. A large number of farmers have proven the Ford One-Ton Truck to be a time and money-saver—have you?

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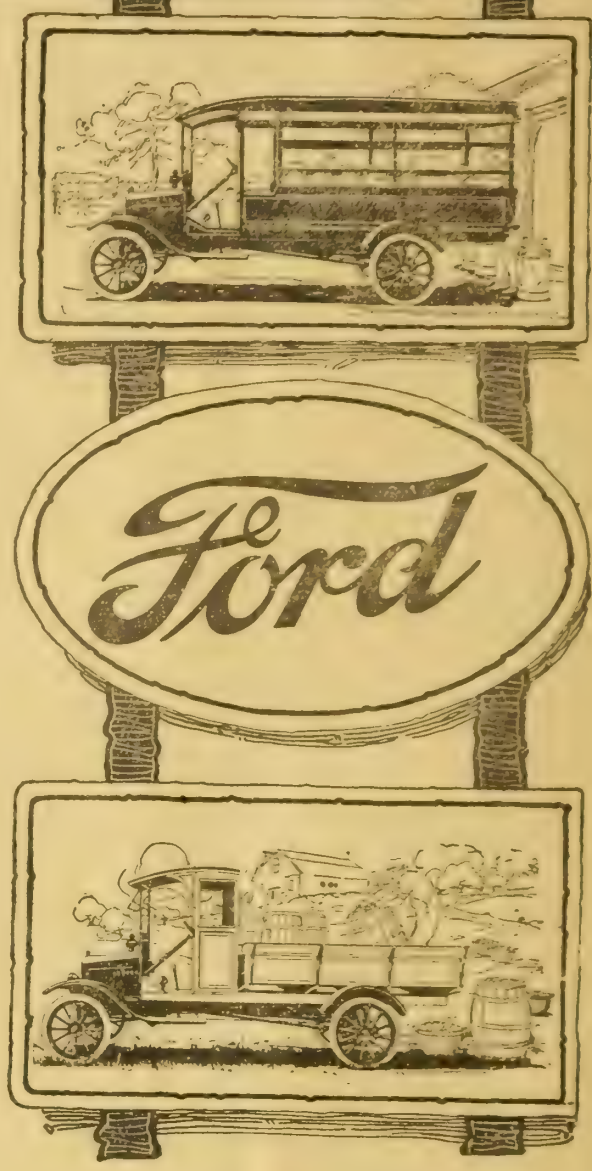

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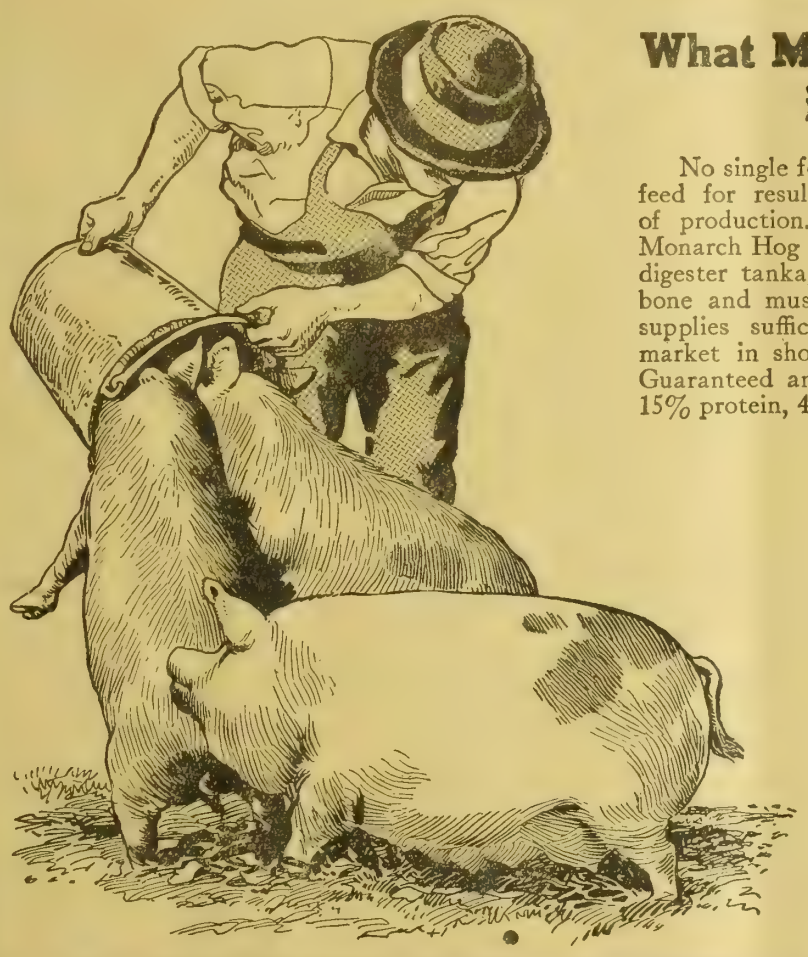
More Pork and More Profit

Heavier, Cheaper Hogs in Less Time

HOW to round your hogs into tip-top shape for an eager market at lowest cost—that is the problem Monarch Hog Feed is solving for farmers every day. Monarch Hog Feed is a properly balanced feed, supplying every requirement for sturdy hogs with stamina, energy, vigor and size; it has exactly the right proportion of protein and fat to finish your hogs in the shortest time.

Monarch Hog Feed

makes more pork and better pork; it shortens the hogs' stay on the farm and reduces cost of production; it gets hogs to market in best condition; in fact it solves the problem of economical feeding in these strenuous times of high-priced feeds—and there's money in good hogs nowadays. Improper feeding is one of the causes of soft bacon, declares Prof. G. E. Day in Ontario Agricultural College Bulletin No. 225. Monarch Hog Feed used along with the proper amount of roughage means good hard bacon that gets the best prices.



What Monarch Hog Feed is made of

No single feed can equal the properly mixed feed for results as to gain per day and cost of production. The principal ingredients of Monarch Hog Feed are shorts, corn products and digester tankage. This combination is rich in bone and muscle forming ingredients, and also supplies sufficient fat to bring your hogs to market in shortest time and in best condition. Guaranteed analysis of Monarch Hog Feed is 15% protein, 4% fat.

Monarch Dairy Feed

has guaranteed analysis of 20% protein and 4% fat. It is a properly mixed combination of Oil Cake Meal and Cotton-seed Meal with the bulky feeds, bran and corn meal. Though very rich, ensuring splendid results, it can be fed alone.

Sampson Feed

This general purposes feed is somewhat similar to Monarch Hog Feed, except that oil cake meal is used instead of digester tankage: it gives results for both cattle and hogs. Guaranteed analysis 10% protein and 4% fat.

Pigs "go for" Monarch just as they are doing in the picture. It is a palatable, easily digested feed. For profitable results it is the most dependable feed—and, remember, you can depend upon getting it, while mill feeds are often unobtainable.

Give it a trial. Order a ton from your dealer and note results. If your dealer does not handle Monarch feeds, send us his name and we will see that you are supplied.

The Campbell Flour Mills Company, Limited

West Toronto · Ontario

10

it shows scratches and bruises much more than oil paint. If not subjected to abrasions, it will last indefinitely, though it becomes unpresentable by reason of dirt fully as quickly as whitewash. The greatest difficulty in connection with its use is the fact that stock of any kind will lick the boards clean, wherever it is applied. Presumably this is on account of the flavor that the salt imparts. C. O. O.

A GOOD MOTHER

The credit marks for brood stock that suckles heavily should be always given. Where the number of ewes or sows is greater than can easily be carried under the hat as to their merits, they should be marked in order of merit, or at least as good or bad mothers. Perhaps nothing will ruin a herd or flock more quickly than cutting out all the thin mothers in the fall. Killing the goose that laid the golden egg was only one notch worse. The fat and saucy mothers that look so well in the fall are those slackers that have shirked the duty of giving milk. Their extra weight is offset by the light weight o ftheir offspring. The best way is to put a little more fat on them and let the butcher have them.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

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Write us your Poultry wants.

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Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

QUALITY BRAND
Rabbitry and Poultry Yards

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Black Siberian Hares, the most profitable fur bearing animal living, price per pair..$25.00
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The above prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each. D. W. Young's stock, as good as money can buy.
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Barred Plymouth Rocks, White Wyandottes, R. I. Reds, Brown Leghorns, and W. C. Black Polands Cockerels and pullets from good laying strain for sale at lowest prices. Satisfaction guaranteed or money refunded. Address,

H. M. McMONAGLE,
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We are offering some choice young Shorthorn bulls of the milking strain, ages 3 months to 15 months.

Also a limited supply of heifers, one and two years of age.

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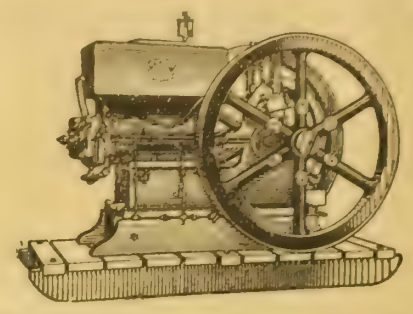

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Record of Performance Ayrshires

Two bulls fit for service. Ask about them. Young cows. Do you want any ? A pair of yearling heifers. A chance for someone to start easy. Write if you are interested,

THOMAS J. HAWKINS
"Lone Pine Farm" - - Stewiacke, Col. Co., N. S.

FOR SALE !

In Shorthorns we have to offer a number of roans, reds and whites in both males and females, from young calves up. It would pay those wishing to purchase to come and see our stock before doing otherwise.

Our spring litters of Berkshires are all sold. Are expecting several summer and fall litters. Parties wishing to purchase please get in touch with us.

L. M. ANDERSON, Sackville, N. B.

$1,975 FOR A BLACKFACED RAM

Brisk and animated trade prevails in the sheep circles in Scotland. The sheep week, as it is termed, has just passed, and it shows the world wide demands for this class of stock. Farmers who have been breeding the best class of sheep are now finding themselves "in clover." Not only do they carefully grade their flocks, but they organize a sale week for ram yearlings and lambs that gathers men from all parts of the world, to reap a fruitful harvest of high prices.

At Lanark on Wednesday last 1124 Blackfaced Rams were on offer and a new record was made for the breed. Mr. Cazdow, Borland, sold a ram at $1,975 and got an average of $400 for 13 animals. Mr. Mitchell, Hazelside, had an average of $300 and his top price was $1,500.

There was brisk trade at the animal sale of rams at Kelso on Friday held under teh auspices of the Border Union Agricultural Society. Border Leicesters alone numbered 813 and Oxford Downs 1,041 rams. Border Leicesters brought high prices, one buyer paying $1,250 for a ram from Newmiln of Craigessie, whose lot of 10 brought an average of $325. Other individual prices got by consigners ranged from $1,100 to $1,200 and their average prices were high.

Oxford Downs also commanded high market values, individual prices ranging from $500 to $650 with corresponding high averages.

Sheep breeders of Canada might do well to consider this trade which is the result of not only breeding high quality stock, but also organizing a market for them.

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
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Common Diseases of Digestive Organs of Horses

J. Hugo Reed, V. S.

It is probable that the owner of live stock who does not attempt to treat any but the more simple cases of disease will have better success than if he attempts home treatment for all, regardless of their nature. While each disease, to a certain extent, presents typical symptoms, yet in the early stages of the disease, in many cases, they stimulate each other to such an extent that it is not possible for the amateur, and often very diffificult for the veterinarian, to decide the exact nature of the trouble. Hence, there is great danger of a mistake being made, wrong treatment given, and this continued until the disease has reached that stage in which the most skillful treatment would be ineffective. It does not pay fir the farmer to attempt to treat dangerous or complicated cases.

In advising treatment for the difficult ailments ti be discussed, we shall recimmend only such treatment as can be given by the amateur. We shill assume that those who decide to treat their own stock know how to administer medicines in the usual manners.

In a large percentage of cases diseases of the digestive organs are the result of errors in feeding.

The intestines of the horse are more subject to disease than the stomach, while the reverse is the case with the ix. The reason for this is that the stomach of the horse is a comparatively small and simple organ when compared to the volume and length of the intestines. The food is arrested for only a short time in it, soon passing on to the intestines, where the chief part of the process of digestion takes place. In the ox the large and complicated stomach not only digests, but prepares the food for digestion, while the intestines have a much smaller capacity than those of the horse.

Danger ih Sudden Changes of Feed

In feeding horses we shall assume that the food given is of good quality. Musty or partially decayed food of any kind should, under no circumstances, be given to a horse. Such food may, to a limited degree, be fed with reasonable impunity to cattle, but it is very dangerous to feed even small quantities to the horse.

In feeding horses, all changes in the kind or nature of the food should be made gradually. For instance, a sudden change from hay to straw, or from straw to hay, from oats to other kinds of grain, or even from whole oats to rolled oats or vice versa, from green food to dry food, or more especially from dry to green food, tends to excite digestive trouble. In fact, any change in the kinds, quality or quantty of food should be gradual.

Acute digestive troubles seldom, if ever, occur from underfeeding, but very frequently from overfeeding.

A very large percentage of horses, especially in country districts, are fed too much bulky food.. The average horse will eat too much hay if allowed access to it. In discussing the proper manner of feeding horses we shall consider hay as roughage and oats as the grain ration. Where substitutes for either are used, the feeder should exercise reasonable consideration as to its nature.

It is not possible to lay down hard and fast rules as to the exact amount in weight or bulk of either hay or grain that a horse of a certain weight should be given. As all feeders have observed, horses have their individualities. Hence some require a little more feed than others of apparently the same character and general size.

One pound of hay for every 100 pounds of the animal's weight is supposed to form the proper ration for twenty-four hours. Some horses require a little more, but the excess should, in all cases, be slight. Of this the animal should be given about one-quarter in the morning, one-quarter at noon, and the remaining half in the evening. The smaller meals are given in the morning and at noon, as the horse will be taken out to work soon after eating, and if his stomach is overloaded, it tends to cause digestive trouble. At any rate, if over fed, he does not perform his labor with that comfort to himseif and satisiactfon to his d river that is desirable, until he has been at work for an hour or two. The large meal is given in the evening, as he will have several hours of idleness in which to digest it.

To Much Hay Injures Horse

In no case should he be given more food, including both hay and grain, than he will consume in about one and one-half or at most two hours. The too common practice of keeping hay before horses at all times when they are standing in the tsable is as harmful as it is wasteful. Whether a horse be performing hard work or light work, or standing idle, the amount of roughage should be about the same. He should have sufficient to satisfy his hunger, but not sufficient to cause engorgement. Most horses are gluttons, and should be treated as such.

As regards feeding grain, the amount given should depend largely upon the nature of the work he is expected to do. Even an idle horse should be given a little grain. As with hay, we may say that under ordinary conditions one pound of oats to every 100 pounds of the animal's weight makes a reasonable ration for a day—we assume that the grain is of standard quality, viz., 34 pounds to the bushel. The grain should be given in equal quantities at each meal If by reason of the horses having to perform more than ordinary labor we wish to feed more grain, the best results will be obtained by feeding a fourth meal late in the evening. When this is not expedient the extra amount may be divided among the three meals, giving one-quarter of the total quantity in the morning and at noon and the remaining half at night.

Opinions differ greatly as to the better form in which to feed oats. The writer's experience, both in feeding his own horses and in giving professional attention to others, is, that under any conditions rolled or crushed oats give the best results. We have noticed this in our own stable, and noted that in stables of horses used either for light and fast work or for heavy and slow work, the stable that feeds rolled oats has need of the veterinarian much less often than the one in which whole oats are fed.

In addition to hay and oats a horse should be given a feed of bran at least once or twice weekly. Many feeders, especially where whole oats are feed, add to each feed of oats a quantity of bran. This practice gives good results, but we have always favored feeding bran by itself, either as an extra or as a substitute for oats, according to conditions. During the months when no pasture is available, it is good practice to give a horse a couple of carrots or a small mangel or turnip once daily.

Watering Horses

Opinions differ greatly as to the proper method of watering horses. Some claim that horses should be watered only before meals, and never when they are perspiring. The prevalent idea that if a horse be watered after a meal the water will force the food out of the stomach before it has been properly acted upon by the juices of the stomach, has practically no force.

As before stated, the stomach is comparatively small; hence after a meal it is, or should be, practically full. The opening of the gullet into the upper portion of the stomach is somewhat constricted, and the opening at the lower part (called the pylorus) into the small intestine, is quite constricted. The contents of the stomach after a meal consist in small particles of solid matter mixed with the juices of the organ. It is a mechanical fact that fluids introduced into a receptacle containing particles of solid matter will not force the solids out of a small opening, but will percolate through the particles, and when the interstices become full, if the fluid does not escape, no more can enter. Hence, are we not justified in assuming that when a horse with a full stomach drinks water it percolates downwards and fills the intestines, then reaching the pylorus passes through it into the small intestine, and passing through that reaches the first division of the large intestine called the caecum, a sack-like organ of considerable capacity, where it is stored and taken up by absorption as required? If this theory be correct, it can readily be seen that a horse may be allowed to satisfy his thirst any time without forcing unprepared injecta out of the stomach.

Again, the idea that it is dangerous to allow a horse that is perspiring to drink cold water is too firmly impressed upon the mind of the ordinary teamster. Of course, there are cases in which it would be dangerous to allow a horse free access to cold water, such as a case where the animal had been subjected to long continued and very strenuous labor, either fast or slow, and had become excessively warm. The introduction into the system of large quantities of cold water might develop such severe reactions as to cause serious trouble. In such cases a few mouthfuls should be allowed, the horses well rubbed, and in a few minutes a little more water allowed. After the abnormal heat of the body has subsided he may safely be allowed to quench his thirst. Conditions of this kind seldom occur. The fact that in hot weather a horse doing ordinary work will perspire freely is no reason why he should not be allowed to drink as much water as he wants.

The teamster is justified in supposing that his horse's sensation of thirst is as acute as his own. This is frequently impressed upon his mind by the desire the horse exhibits in his haste to reach water when he is thirsty. When the teamster is thirsty he usually finds means of allaying his sensation. When his horse is thirsty he "wants a drink" and, except under exceptional circumstances his desire should be gratified as soon as possible.

Some horses are particularly predisposed to colic and will suffer if given food or water under certain conditions. Such animals should be treated accordingly.

Medicines Should Be On Hand

The owner or teamster who considers treating cases of illness in his own stock should provide himself with the drugs he is likely to require. These should be kept in as even a temperature as possible, bottles should be kept well corked and plainly labeled, powders and crystals kept carefully wrapped and plainly labeled and all kept in some secure place, out of reach of careless people and children.

He should also provide himself with a graduate for measuring liquids and scales for weighing solids. Where a graduate or other correct means of measuring liquids is not kept some of the ordinary domestic utensils may be used with reasonable accuracy. Common tumblers contain eight to ten fluid ounces; wine glasses about two fluid ounces; table spoons half a fluid ounce; dessert spoons two fluid drams.

(Continued on page 92)

Well-Kept Farms in Westmorland County

Editor Maritime Farmers, Sussex.

A competition for the silver cup donated by A. E. Copp, M.P., for the best-kept farm in the parishes of Botsford and Westmorland has aroused some interest and pride among the farmers of Botsford parish in the achievement of securing the trophy. The cup must be won three times, not necessarily consecutively, before becoming the property of the contestant. It has been awarded this year to Mr. Arthur Oulton, Little Shemogue.

The basis of criticism and the scale of credits used in making the judge's decision are contained in the pollowing paragraphs:

Scale of Credits used for comparing farms.

(a)	Lay-out.....15	credits
(b)	Freedom from Weeds..10	"
(c)	Drainage.....15	"
(d)	Maintenance of Fertility 15	"
(e)	Live-stock complement 25	"
(f)	Home comforts and farm equipment.....20	"
	Perfect score.....100	"

(A) The general lay-out or geography, of a farm includes the location of the farm-stead, the utilization of natural or artificial windbreaks or shelters and tsock-watering privileges in barn-yard and field; the size of the fields in relation to the size of the farm their accessibility, general slope and contour, also the stability of the farm fences, the location of gates and the permanency of the farm roads.

Fields should be large, rectangular in shape, free from obstructions such as stone piles or stumps and enclosed with strong fences having conveniently placed wide gates.

The farm lanes should be straight, well drained and graded.

(B) The freedom from weeds of fields used as pastures or hay-meadows for grain and root crops is considered. A weed-free farm indicates a well managed farm, while a weed-infested farm indicates poor farm practice and too frequently a land-poor condition of the owner.

Weeds and wild-grasses lessen the value of a field whether it be included in the regular rotation system or used only as pasture because the quality of the hay and grain crops is inferior and its stock-carrying capacity is decreased.

(C) Drainage. Good drainage of the farmestead and fields is essential to the health and well-being of the family and farm livestock as well as for the promotion of farming operations. A well drained soil will, even in dry weather, produce a much better crop than will an undrained soil of the same type, while exclusion from the regular crop rotation during a succession of rainy years may result in these wet areas becoming waste portions of the farm.

The contour of the land and the type of soil and subsoil sometimes result in a condition of natural underdrainage, otherwise artificial farm drainage by means of open ditches or underdrains is necessary.

The need for drainage is indicated when water stands at or near the surface of the soil long enough (a) to interfere with tillage, planting or harvesting operations; (b) to render the soil soggy or compact. These indications obtain on some portion of each farm.

The construction and maintenance of adequate open ditches to regulate the water supply and to serve as efficient outlets would return large dividends in increased croy yields.

(D) Maintenance of fertility. An ideal farm management scheme on a live stock farm would maintain the soil at a profitable state of fertility by a system of crop rotation, (in which clovers are frequently grown) the return of farm manures to the soil, and the addition of phosphates and lime or some source of lime such as mussel mud, and burned oyster shells.

The area of grass crops needed or desired largely governs the size and number of fields and the rotation scheme to adopt. Pasturing tillable land is an expensive method of stock feeding where rough pasturage may be supplemented with green crops and roots. The root area on all farms visited could well be increased and the condition of pasturage and hay meadows would be improved by more frequent renewal and a more liberal use of clover seed.

(E) The Live-stock complement of the farm is its most important adjunct, and every phrase of farm management is bent toward it. Of course some crops need to be grown and sold as cash crops but the larger part is marketed "on four legs" through the medium of live stock. Live stock supplies the motive power of the farm, increases the interest in and attractiveness of farm life, maintains soil fertility, tends to improve the business organizations, reduces the living expenses by the improvement of the diet, and is frequently the principal source of income.

The amount of feed which may be profitably fed is determined by the quality of the farm livestock therefor good feeding, good breeding, care and selection in raising young animals should be the common rule of farms.

(F) Farm Equipment, Home Comforts and Conveniences: A comfortable living made from the land in return for his husbandry is the recompense of the majority of farmers. Equipment fo rthe barn and field to carry on the farm activities efficiently and quickly assists in the attainment of his business success. Household equipment is equally advantageous and necessary to the happiness and contentment of the farm family. A good house-cellar, a well-arranged group of sanitary outbuildings, a good orchard and kitchen garden nearby and modern conveniences in the house, with a convenient and reliable water supply, make farm life attractive.

A farmer's success comes from doing certain things, among which the neatness and general equipment and state of repair of the farmstead contribute largely to his well-being and to his service to the community.

O. C. HICKS,
N. B. Dept. of Agriculture.

LINE BREEDING THAT MADE A $106,000 CALF

The sale of $106,000 Holstein bull calf by A. C. Hardy, of Brockville, was the dairy sensation of the year. Kimball's Dairyman, in a recent issue, goes into the breeding of the anaimal with considerable detail, pointing out the various phases that entered into it, in a combination of "the elements of chance, good fortune and foresight."

A study of the pedigree of this famous bull, however, indicates that the element of foresight was the principal one, says H. G. Van Pelt. When good fortune follows a man's good judgment and enables him to develop and perpetuate his ideals, then the element of chance is not entitled to much credit, except as it serves one's modesty.

Champion Sylvia Johanna is a remarkably well bred bull. The principle of scientific line-breeding adopted by Mr. Hardy, contrary to the advice of his friends and other breeders of Holstein cattle, has given to the Holstein breed an animal whose influence on his offspring, used intelligently, will be seen for generation to come.

Disturbed at Price

Mr. Hardy secured the first blood lines of this bull in 1910 when he purchased the grandson. Bell Moded Johanna, at the Syracuse sale. In 1911 he became interested in another line of breeding, but his inexperience caused him to be extremely cautious. He wanted to purchase the then famous cow, May Echo, but $1,500 seemed to him a big price to pay for a cow.

His infatuation, however, for the cow and for her daughter May Echo Verbelle, influenced him to send his herdsman, Mr. Logan, to see a daughter of the last named cow with instructions to buy her if she could be secured for $500. He was very much "disturbed" when Mr. Logan returned with May Echo Sylvia, having paid $1,000 for her. This was probably double the price that had ever been paid for an unkown Holstein heifer in Canada up to that time.

This purchase is what Mr. Hardy calls chance, but breeders of cattle will recognize the display of excellent judgment on the part of Mr. Logan; and Mr. Hardy says of him: "He is considered one of the best Holstein judges in Canada."

With the purchase of May Echo Sylvia began a system of breeding that shows the excellent judgment in vogue on the Avondale farm.

The records of the granddam and the dam are interesting. May Echo was owned by the Allison Farm when she completed a record of 25.08 pounds of butterfat. Her yearly record of 24,000 pounds of milk and 833 pounds of butterfat puts her above any other Canadian producer.

May Echo Verbelle was considered a better cow than her dam. She was a persistent milker, it being practically impossible to get her dry. Notwithstanding this handicap, she produced more than 700 pounds of milk in a week. She also made a record of 23.91 pounds of fat without being dry. Her daughters and granddaughters were all record making cows, proving the wonderful producing qualities of the family.

May Echo Sylvia proved her ability when, as a four-year-old, she made 27.15 pounds butterfat, 759 pounds milk with 112.96 pounds butterfat in 30 days. Her later records give better evidence of her producing ability. She produced 152.1 pounds milk in one day and more than 1,000 pounds in seven days, 4,196 pounds in 30 days, and 12,899 pounds in 100 days. Not only has she accomplished this wonderful feat for one year but has made high records for five years.

Her first two calves after coming into the possession of the Avondale Farms were sired by King Pontiac Artis Canada, their herd bull, that is by the great King of Pontiacs, out of Pontiac Artis, a high producing daughter of Hengerveld De Kol. Her second calf throughcalf, Avon Pontiac Echo, a great bull, is the grandsire of the $106,000 calf through his son, King Echo Sylvia Johanna.

Real Good Fortune

Mr. Hardy then decided to secure for the head of the herd a calf from this famous cow. She was sent to be bred to Spring Farm Pontiac Cornucopia, a son of the then highest re-

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'Agricola' and the Founding of the First Agricultural Society in Nova Scotia

By "Hal"

In 1818, when the Earl of Dalhousie was governcr of Nova Scotia, a series of letters on agriculture began to appear in the "Acadian Recorder" published at aHlifax, N. S. They were written in the best classical English and treated many different departments in agriculture, beginning with the need of better implements, seed, stock, etc., and going on to tell of the good that agricultural societies could do and of methods of tilling the soil.

These letters were signed "Agricola" and even the editor of the paper did not know who "Agricola" might be, because the letters were forwarded through another man, who acted as a "go-between."

The letters began to arouse the people and they tried all the ways they could think of, to find out who the writer was.

One man thought a certain clergyman was the author. The clergyman had occasion to leave town and the man immediately wrote to "Agricola", thinking that if he did not get an immediate reply it would thus be proven that the clergyman was "Agricola". But "Agricola" immediately replied.

Several months after the letters began to appear in the paper, it was found necessary to form an agricultural society on account of the feelings aroused in the people. The Provincial Agricultural Society was the result. It met at Halifax to nominate it's officers and the Earl of Dalhousie was chosen for president. When the members were asked whom they would choose for a secretary, everybody shouted for "Agricola" but none of them knew who he was.

Now it chanced that "Agricola" was at the meeting and heard all that was said about himself. He left wtihout saying anything, but after thinking it over, he decided that the best way he could help the society was by making himself known, so he told his story to Governor Dalhousie, the president of the society.

He turned out to be a Scotch merchant of Halifax, named John Young.

The following is a short sketch of his life. It may be found in Duncan Campbell's "History of Nova Scotia."

Mr. Young was born at Falkirk, Stirlingshire, Scotland, in September, 1773. He was sent to Glasgow College where he distinguished himself as a classical scholar and as an adept in most of the sciences, especially chemistry.

His parents wanted him to enter the ministry and he wanted to enter the medical profession. He at last turned his attention to mercantile affairs in Glasgow.

At twnty-five he married a daughter of George Rennie, Esq. They had nine children, all born in Scotland. Only the eldest and the youngest lived. They were Sir William, Chief Justice of Nova Scotia and Hon. Charles Young, a judge of Prince Edward Island. Mrs. Young died in Halifax, in 1863, at the age of eighty-four.

In 1814, Mr. Young come to Nova Scotia and carried on a merchant business for four or five years.

In 1818 he wrote his letters for the "Acadian Recorder."

In 1819 he purchased a farm two miles from the centre of Halifax, naming it Willow Park. He lived there until hi sdeath in 1837.

In 1825 he entered the Legislature and made many eloquent speeches.

In private life his manners were most genial, hi sconversational powers remarkable and he was always ready to give useful instruction to his associates.

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cord cow. This bull was chosen after some months of careful investigation, his grand individuality being the deciding factor, together with that of his dam, plus her records. From this mating was secured Crampion Echo Sylvia Pontiac, the bull now at the head of the herd at Avondale.

Mr. Hardy claims that the element of good fortune came into the famous bull's history when, contrary to the advice of his herdsman, Mr. Logan, he bought a calf, Belle Model Pohanna 2nd,, for $715. This cow made a record of 25.63 pounds of butterfat and also won many honors in the show ring. She produced three heifers in succession, all of which made good records. At a later freshening she produced an almost white bull sired by a son of May Echo Sylvia and King Pontiac Artis Canada. At this freshening she made 29.87 pounds of fat.

The calf was a most promising individual and it was a question for some time whether or not he should be kept as a herd sire, but it was finally decided to consign him to Mr. Moyer's sale at Worcester. In the meantime several efforts were made to purchase him at almost unlimited prices but Mr. Hardy preferred to let the public put a price on him.

One reason for keeping him so long was to enable them to breed him to several of their best animals, one of which they decided in advance would be May Echo Sylvia. This was to be done in order to procure a double cross of her blool in her offspring, and also to bring in that of the King of the Pontiacs. May Echo Sylvia was thus bred to King Echo Sylvio Johanna, her grandson, thereby bringing into her offspring, the now famous $106,000 bull calf, the desired King of the Pontiac's blood—a double cross of her own blood combining it with that of Johanna Rue 3d Lad, through one of the finest cows in the Holstein breed, Belle Model Johanna 2d.

Scientific Line Breedng

Here is an excellent example of scientific line breeding and there should have been no doubt in the mind of anyone, that results would be favorable. The result was most satisfactory at the time, and the calf, Champion Sylvian Johanna, promised to be a grand individual from the first. From the end of the first week of his life he was elected the leading member of the Avondale delegation to Mr. Moyer's 1918 sale.

Mr. Hardy predicts the famous bull's future largely by his brothers and sisters and his own individuality.

He says "If we may judge the future by this calf's brothers and sisters, as well as his own promising individuality, he should grow into a surpassing bull."

There is something more than the quality of the brothers and sisters, and the individuality of the bull, by which he may be judged. It is the intensified blood which was transmitted to him by a double cross of his mother's blood. Added to that is the blood of the famous King of the Ponistics which unite to make him a desirable animal.

Added to this, too, are the phenomenal records of his ancestry on both sides for generations back, so that, in this bull we have the characteristics which unite t omake him a desirable animal.

He has the blood of his immediate anacestry well fixed. He cannot help but transmit the remarkable qualities of the famous cow, May Echo Sylvia. His ancestors on both sides are high producing animals, without a single exception. He has a remarkable individuality—an individuality he coula not otherwise have when we know the plan of scientific line breeding that was used in producing him.

The purchaser of the bull has an opportunity seldom offered to breeders of cattle. Here is a bull whose blood has become intensified. There is not any possible chance for the law of reversion to manifest itself; the element of chance has been removed so far as the prepotency if the bull is concerned. The owner must, however, know the blood lines of the females with which he is mated. It would seem advisable to continue the mating of the family blood lines that have become so well established in this remarkably well bred bull.

It would be nothing short of a calamity to use this bull in a herd in which there is no relation of the hereditary material that is in him. The chief advantage of line-breeding is that the results can be predicted almost with a certainty and when they do appear, and improvement is at hand they are backed up by a most powerful hereditary force, becauase the blood lines in the line bred animals all blend together, and tend toward permanent improvement.

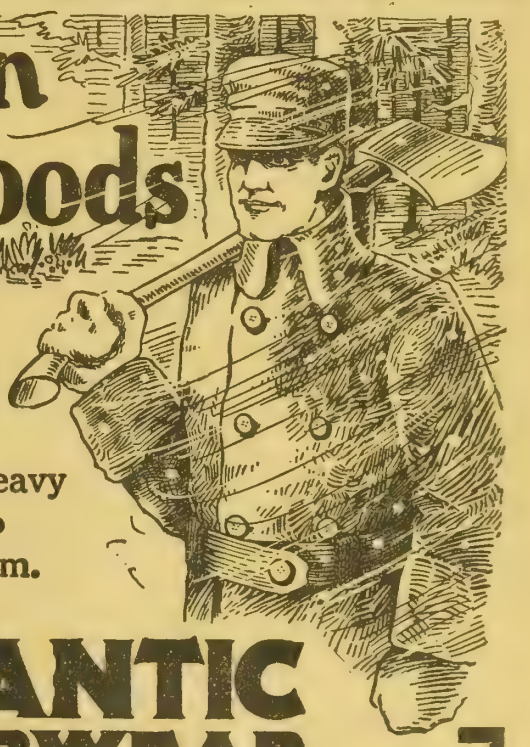
Mr. Hardy has succeeded with the principle of line breeding. He possessed a rare ability to select animals and because of this, coupled with his foresight anad good judgment in mating them, has contributed much to the Holstein breed.

SCALY LEGS

Scaly legs on hens are caused by a minute mite, known as the scaly leg mite. This tiny mite burrows under the skin, where it lives and breeds, forcing the scales of the leg up. When badly affected, the birds stop laying and become lame.

Control.—Soak the feet of the affected bird with soap and water to soften up the scale. After brushing the scale, apply an ointfent to the legs, composed of one part oil of caraway and five parts of white vaseline, or an ointment made of flowers of sulphur, one dram; carbonate of potash, 20 grains; and lard or vaseline, half an ounce.

Some poultrymen have used a mixture of one part of kerosene and two parts of raw linseed oil with speedy effect. The legs of the affected fowls are dipped in this mixture, care being taken that the feathers are not wet.



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NOVEMBER 5, 1918

DATES OF ISSUE.

November 5-19

December 3-17

UNITED FARMERS WIN

The election of a representative to the provincial legislature of Ontario, from the constituency of Manitoulin, resulted in the return of Benjamin Bowman, the candidate of the United Farmers of Ontario, over his opponent, B. H. Turner, the government condidate by a substantial majority. It was the first time the United Farmers of Ontario tested public opinion through the polls. They won and their experience will doubtless lead to other contests with equally encouraging results to them. The farmers of Canada promise to have much more to say in the affairs of this country in the not distant future. Up to the present they have been unrepresented in parliament or legislatures, except in the every-day haphazzard fashion. It is noticed that some of the daily papers, of a violent political stripe, attempt to interpret the outcome of the Manitoulin in an old time political sense. There they mistake the situation. The old political ideals and the old political lines have been buried by the present war so deep, that let us hope nothing but the best of them will ever be disinterred. The Manitoulin contest simply emphazises that the farmers are awakening to their opportunities and that in future they will make a much bigger noise in the political world. And if they are councelled by wisdom, they will do that very thing. On every hand in Canada are arising strong organizations, which seek to impose their views on the majority. If the farmers are satisfied to swallow every other person's views, why they will stand apart. If they want to say their say and receive attention, they will get together. Manitoulin indicates only one thing, that the farmers decided to speak as farmers and they have been heard in every province in Canada.

DO NOT OBSTRUCT ROAD DITCHES

The Department of Public Works for New Brunswick sent the following article for publication in the columns of the Maritime Farmer:

Road Supervisors in very many parts of the Province who have taken great pains to make ditches and otherwise to follow out the drainage instructions for the benefits of the trunk and branch roads are complaining bitterly of the carelessness of very many of the residents in their districts. who evidently think that a road ditch is only made to be obstructed, for instead of building small pole bridges across the ditches so as to get into their fields, they level up the road by throwing a lot of poles or stones or brush into the newly made ditch. The Supervisors say that if they are asked to remove the obstruction, in many cases they either refuse to do so or else say they will attend to it and never get round to it. The result is somewhat discouraging, for the very heavy rains of the past month have caused an unusual flow of water in the road ditches, and wherever this meets with such an obstruction as described above, the water invariably gullies out the new roadway and does, in some cases, hundreds of dollars worth of damage. There is a section of the Highway Act of 1918 which says that no person shall under the penalty not exceeding $20. with costs of prosecution or imprisonment for thirty days—"pile any wood, logs, lumber or stone or refuse within the limits of the right of way of any highway and leave the same within the limits of the said right of way for a longer period than twenty-four hours."

Any person who shall continue any encroachment or obstruction on any highway or ditch after a notice verbally or in writing by the Supervisor requiring him to discontinue or remove the same, shall be deemed to have encroached on or obstructed such highway or ditch within the meaning of this section."

The Highway Act further says that any person who by obstructing a highway, causes injury to the same, shall be liable to repair such injury under the instructions and to the satisfaction of the Supervisor, and in case he does not after being notified by the Supervisor, the same shall make such repairs and may recover the cost thereof together with costs of suit.

The Act therefore is very plain about obstructions in the ditches or roads, but no doubt is not very generally understood to be so by those who disregard the public interests and upkeep of the roads by placing obstructions in the ditches. The Road Engineers and Supervisors all consider it of the utmost importance that particularly during the fall and spring, residents should exercise the very greatest care in keeping the ditches clean and assist to perfect the drainage of the road system without which good roads are impossible.

PRODUCTION MUST INCREASE

The Canada Food Board says:—There has been no call for slackening efforts. The impression seems to prevail that Canada has done well enough in growing grains, and the future is assured, so far as food is assured. Such is not the case, has not been the case, nor will it be for some time to come. The call is for more and yet more production, and the cry for food is still loud in the ears of Canadians.

The hard work and self sacrifice of Canadians has borne fruit. Great Britain cannot be starved. There is enough to provide for the armies and the civilians until the next crop, but no more. There are no food reserves, as there should be.

Indeed, Canada must double its production in 1919. Let that soak in. The continent of America has promised, and must deliver 15,000,000 tons of food stuffs this coming year. In 1917-18, 10,000,000 tons were promised and will be delivered. America must produce 50 per cent more, for the Allies. That's the job before the farmers and citizens of this country. The great crops of grain in the United States in 1918 may not be duplicated next year, and Canada will have to deliver a still greater share.

There are but two ways of securing this total—production and conservation. And the greater of these is PRODUCTION.

The manifest duty of the hour is to prepare the land for the coming of banner crops in 1919.

PLOUGH, PLOUGH, PLOUGH. This should be hammered into the consciousness of Canadians NOW.

PRODUCTIVENESS OF A MAN

When a young man left Toronto. where he was bookkeeper, he went to work as a hired man on some Simcoe county farms. Later he rented a farm, and now he has a comfortable home on the farm thta he bought "on a shoestring," as it were.

Since making the change he has been able to raise a little family under most favorable conditions, where education and physical development go hand in hand, and has been able to enjoy life greatly—as he sees it.

Had he remained in the city he would possibly have been a bookkeeper till the end of his days, and as the years went on he would be gradually declining in productive ability, and ni the end would become a charge on others.

In his life on the farm, he is doing his best to increase the fertility and value of his land, and in this way is increasing his productive ability, so that his value to the state will be manifoldly greater at the expiration of fifteen years than had he remained in the clerical work of the city.

That man is a patriot. And that man is happy, to-day.

BRITAIN MAY FEED HERSELF

Will the United Kingdom produce its own food supply after the war? Sir Charles Fielding, the new Director-General of Food Production, a great-grandson of Henry Fielding, and a practical farmer, who was brought up on his father's farm until he was 17, and later studied farming in California, thinks it may. Sir Charles recently said for many years he had been endeavoring to show that Great Britain could produce the bulk of her heavyweight foods for both man and beast. and he would now endeavor, as far as he could, to prove the theory. This year's harvest, he believes, will be the biggest since 1868, and still greater acreage is to be devoted to production in future.

FINANCING BILL'S FINISH

"War does not admit of holidays," said the great Lincoln. No one knows this better than the men of Canada. For four years we have fought the fight of freedom against terrible odds. We have raised men and money whenever asked. And there has been no holiday, no cessation of anxiety until now when the clouds seem to be breaking. Yet the final drive needs every one's savings in order to help our country finance the end. Only then will we be able to take a holiday, when the dollars of Canadian money have forced the enemy to where he belongs.

No farmer or business man, whose patriotism has made him buy a few Victory Bonds, can fail to appreciate how much he has helped out. The present Victory Loan is another chance to ensure to us a decent holiday from war and autocracy. Be sure you share largely in the next call. You can't help in a better way now.

* * *

The boy who is growing up with a calf or pig is in good company.

* * *

Not many leaves need to fall to make a heavy loss in a clover crop.

ON PURCHASING FEEDING STUFFS

By Frank T. Shutt, M.A., D.Sc.

The farmer's profit in connection with his live stock depends not merely on getting a good price for his produce—beef, mutton, milk, etc.—but also on buying his feeding stuffs with a careful discrimination as to their relative nutritive qualities. He must not only watch market prices and when necessary obtain quotations, but he must know something of the real feeding values of the several feeds offered. It is with rgard to this latter phase of the question that we propose to give some information; it must necessarily be put briefly.

It stands to reason that as far as may be practicable, home-grown fodders and grains should be produced and used, for in the feeding of them all manufacturers' and salesmen's commissions are saved, and the fertilizing elements they contain may be returned to the land in the resulting manures to increase its fertility. But to supplement these, it is necessary, chiefly to make a well balanced and highly productive ration, to purchase one or more of the various milling or manufacturing by-products upon the market. These, naturally, differ widely in composition and hence in feeding value. They differ also greatly in price, and it is well to bear in mind that the price is seldom any criterion as to feeding value; frequently we find that the cheapest feeds could not be profitably fed were they purchaseable at half their marked price. On the other hand, the most expensive, by reason of their richness in the more important nutrients, may be the most economical to purchase.

The whole subject of the composition of feeding stuffs and the functions of the several nutrients—protein, fat, carbohydrates, etc.—in the animal economy, is well worthy of the careful study of the progressive farmer.

The Composition of Feeding Stuffs.

The value of a feeding stuff depends primarily on its composition. All fodders and feeding stuffs are composed of the same constituents (known as nutrients) and differ among themselves in their value to the animal chiefly from the fact that the proportions of these constituents vary greatly, according to the nature of the feed. These constituents are as follows: moisture, protein, fat, carbohydrates, fibre, ash. We shall not here attempt any complete account of these nutrients, but merely emphasize one or two points in connection therewith which will enable the farmer to purchase his feeds to the best advantage.

Protein.—This constitutes the nitrogenous portion of the feed. Its chief function in the animal is the formation of body tissues and fluids—muscle, blood and milk. Of all the nutrients it is the most important and valuable, for no other can take its place in this essential flesh-forming work. Without it, or if it is in insufficient quantities, the animal cannot thrive, or grow, or produce milk.

Fat or Oil.—Of the non-nitrogenous constituents, fat has the highest nutritive value. It is used in the animal for the production of fat—the fat of the body and of the milk; for the generation of the vital heat, and as a source of energy or power to do work.

Carbohydrates.—These include starch, sugar and allied substances, which as a rule constitute the larger part of the dry matter of a feed. Their function in the animal is to produce heat and energy (for which purpose they are less valuable, weight for weight, than fat), and under certain circumstances they may become a source of body fat.

Fibre.—This is the least valuable of the nutrients. In composition and function it is similar to the carbohydrates, but it is less valuable to the animal by reason of its being less digestible. An excess of fibre, especially if it is of a woody nature, depresses the digestibility of the other nutrients and thus may reduce the value of an otherwise ercellent feeding stuff.

Ash.—This is the mineral matter taken from the soil by the plant in its growth. It is composed chiefly of lime, magnesia, potash and soda combined with phosphoric and other acids. In the animal it assists in the formation of bone (large phosphate of lime) and furnishes that small quantity of mineral matter found in all animal tissues.

Importance of Protein and Fat

The farmer buys feeding stuffs chiefly to enrich his home-grown fodders and grains with protein and fat, and thus make them more effective; in other words, to make a well-balanced ration. The value of these purchased feeds will depend chiefly, therefore, on their percentages of protein and fat, and to some extent on a low fibre-content.

The Commercial Feeding Stuffs Act of Canada requires that the larger number of the milling and manufacturing products sold as feeds (bran, shorts and the meal of whole grains are excepted) bear a tag or brand guaranteeing the minimum percentages of protein and fat and the maximum percentage of fibre in the feed. These guarantees should be looked for and well studied before making a purchase, for it is not always possible from mere inspection to judge of the quality of a feed or to be sure that it is unadulterated.

Lowest-Priced Feed Not Always Cheapest

Let us suppose the farmer is buying cottonseed meal. He has two samples submitted to him, "A" and "B". Except that one is somewhat brighter and yellower than the other, they are much alike. "A" is quoted at $30 per ton; the price of "B" is $35. Are the market prices of these meals in accord with their nutritive values? Or, to put it otherwise, if "B" is worth $35 per ton, what is "A" worth? Their composition is shown in the illustration.

Assuming that the farmer is purchasing, essentially, for the protein and fat these feeds contain, and that these nutrients are approximately equal in value to him, we may proceed as follows:—

A.		B.	
Protein	26.50	Protein	37.62
Fat	5.84	Fat	7.91
	32.34)$30.000(.927		45.53)$35.000(.769
	29 106		31 871
	8940		31290
	6468		27318
	2472		39720

Price per protein-fat unit in "A"..... 93 cents approximately
" " " "B"..... 77 " "

Difference ..... 16 " ".

It is thus apparent from these simple calculations that the price asked is 16 cents higher in "A" than in "B". The relative value per ton of "A" as compared with "B" is, therefore:—

Total protein-fat units in "A"= 32.34, multiplied by the price per protein-fat unit of "B"= .77 cents.

22638
22638

$24.9018

We thus see that with "B" at $35 per ton, "A" is not worth more than approximately $25 per ton. The large percentage of fibre in "A" would tend to reduce even this figure, for, as we have pointed out, a high fibre-content has the effect of impairing the digestibility of the feed.

It has thus been demonstrated, in this case, that the higher-priced meal is much the cheaper feed.

THE SILO PLACES FARMING ON A PROFITABLE BASIS

The cheapest and best ration for live stock must contain a reasonable amount of succulent feed. An abundance of suitable pasture is unexcelled, and a substitute for this feed in winter or during a drought in summer is essential for greatest production and profits.

In view of the scarcity and high prices of grains and meals, the silo takes on an increased value. For example: 100 pounds total digestible nutrients in corn silage has a net cost of 54 cents, in bran $2.31, corn $4.02, oats, $4.29, etc., when silage costs $3 per ton to raise and store and other feeds are valued at present wholesale market prices. Even in these times of expensive labor, seed, horse labor and machinery, corn may be placed in the silo at the above cost. Surely this is sufficient reason why every live stock farmer should consider the increase in silage production.

The adaptability of the silo to various parts of Canada depends on the location, varieties of crops which may be grown, and, to a lesser extent, on the class of live stock maintained. No farmer with two or three cows should think of building a silo, but for a herd containing ten cows or more, or the equivalent, a silo may advantageously be erected. Silage is feed pre-eminently suited to the feeding of dairy cattle. It however, is a very excellent and cheap feed for beef cattle, sheep and horses. In the majority of the best live stock districts in Ontario and Western Quebec silos should be on every stock farm. If any particular district is not suited to corn growing, peas and oats, peas, oats and vetches, clover, alfalfa, etc., may be substituted for that crop. This method is upheld by experience at the Experimental Farm, Ottawa.

Silage at $3.50 per ton is cheaper cattle feed than mixed hay at $12 per ton. Corn silage is 30 per cent better than shocked corn from field. The same holds equally true of unthreshed oats or oats and peas saved for winter feed. Silage from peas and oats produce milk 20 per cent. cheaper than oat sheaves, 30 per cent. cheaper than straw and turnips and 40 per cent. cheaper than hay. At the same cost per ton, silage is better feed than roots for beef or dairy cattle. Moreover, considering present labor conditions as well as the cost of harvesting, keeping qualities and cost of storage, silage, where grown successfully, is more economical than roots. Silage needs no pulping or other preparation for feeding. Silage for winter use is in itself the cheapest feed, and it also makes all other roughage and grains more palatable, wholesome and profitable.

Good pasture, if available, is the cheapest summer feed. Where permanent pastures fail, an annually sown pasture of rye or oats and barley may, under present labor conditions, be the cheapest substitute. However, the use of soiling crops or summer silage may be the only available means of providing succulents. As a rule, silage is more profitable and more cheaply grown than are soiling crops and is more cheaply harvested and fed during the busy season. Milk produced on corn silage and green cut alfalfa cost in feed 66 per cwt.; produced on corn silage and mixed hay may cost 70 cents per cwt.; produced on soiling crop (peas and oats) cost $1.04 per cwt. With all lots, the heavy milkers received some grain. Where suitable pastures are not available the summer silo provides the cheapest feed and the greatest profits.

Finally, the farmer with a silo need never fear losing a crop of clover, alfalfa or late-sown grain. Silage making does not depend on the dryness of the weather. The silo is the cheapest storage building on the farm in proportion to the tonnage capacity. The silo allows the carrying of more stock per acre on the farm and is a labor saver, a money maker and a soil enricher.

SAVE YOUR WOOD-ASHES

The experience of many generations of farmers and gardeners has proven the high value of unleached wood-ashes as a fertilizer, especially for clover, corn, farm roots and vegetables and fruit crops generally. Wood-ashes contain no nitrogen and supply no humus, but as far as mineral plant food is concerned there is probably no compounded mineral fertilizer on the market that is more effective and more lasting. They furnish potash, lime, phosphoric acid—the very elements taken from the soil by the forest trees and, returned to the soil they will supply, in the very best form and combinations, the mineral plant food required by our crops.

According to analyses made by the Division of Chemistry, Experimental farms, unleached hardwood ashes, free from sand, etc., will contain between 5 and 6 per cent of potash, about 2 per cent of phosphoric acid and from 20 to 30 per cent of lime. Before the war Germany supplied all the potash used for fertilizing purposes; since that supply has been cut off, potash has tremendously increased in price so that now it is worth almost ten times what it was in the early part of 1914, and as a consequence it has practically disappeared from commercial fertilizers. The potash in 100 pounds of good quality wood-ashes is now worth from $1.00 to $1.50.

Owing to the scarcity and high price of coal, farmers will be burning more wood this winter than has been customary for many years. We counsel them to save carefully the ashes from their stoves, storing them in a dry place protected from the rain. Leached ashes contain very little potash, for this element is readily soluble in water.

The soils most benefited by wood-ashes are light sandy and gravelly loams, and mucks and peaty soils. They are also especially valuable for sour soils deficient in lime. The application may be from 600 to 2000 pounds per acre, preferably broadcasted in the spring on the prepared land before seeding and harrowd in.

DISINFECT

Great care and thoroughness should be exercised in cleaning and disinfecting barns and stable yards in which animals with contagious disease have been kept", says W. H. Feldman, of the Colorado Agricultural College. "Such diseases as glanders, anthrax, rabies and, to a lesser degree, tuberculosis, are highly dangerous to man as well as to other animals and no laxity should be tolerated in cleaning up premises where these and other communicable diseases have been known to exist. The expense of a thorough disinfection is not large and the equipment needed is simple. The following is a list of the most efficacious disinfectants: Chlorid of lime; bichlorid of mercury; formalin; carbolic acid; crude carbolic acid; compound solution of cresol. A pail and the ordinary spraying pump is usually satisfactory for applying solutoins of any of the above."

HORTICULTURE.

CERTAIN STAPLE COMMODITIES. WEIGHT OF BUSHEL AND BAG

The following sections of the Inspection and Sale Act, Part X, have been transferred by the Department of Trade and Commerce to the Department of Agriculture, and will in future be enforced by the Fruit Branch of the latter Department:—

Part X

337. A bushel of any article mentioned in this subsection shall mean, unless a bushel by measure is specially agreed upon, that number of Dominion standard pounds of such article which is shown in this subsection opposite the name of such article:—

Description of Article	Weight in Dom. Standard lbs.
Artichokes .....lb.	56
Beans .....lb.	60
Beets .....lb.	50
Bituminous Coal ....lb.	70
Blue Grass Seed....lb.	14
Carrots .....lb.	50
Castor Beans .....lb.	40
Clover Seed .....lb.	60
Hemp Seed .....lb.	44
Lime .....lb.	70
Malt .....lb.	36
Onions .....lb.	50
Parsnips .....lb.	45
Potatoes .....lb.	60
Timothy Seed.....lb.	48
Turnips .....lb.	50

2. A bag of any article mentioned in this subsection shall contain that number of Dominion standard pounds of such article which is shown in this subsection opposite the name of such article:—

Description of Article	Weight in Dom. Standard lbs.
Artichokes .....lb.	84
Beets .....lb.	75
Carrots .....lb.	75
Onions .....lb.	75
Parsnips .....lb.	65
Potatoes .....lb.	90
Turnips .....lb.	75

338. A barrel of potatoes shall mean, unless a barrel of specified size, kind or content by measure is specially agreed upon, one hundred and sixty-five Dominion standard pounds of potatoes. (1914, c. 36.)

Offences and Penalties

356. Every person who sells or offers for sale by the bag any of the vegetables mentioned in subsection 2 of the section 337 of this Act, shall, in case any bag of such vegetables sold or effered for sale by him does not contain at least the number of Dominion standard pounds required by the said subsection, be liable, on summary conviction, to a penalty not exceeding twenty-five dollars. (1914, c. 36.)

357. Every person who violates any provision of this Part, providing that a bushel of any article shall be determined by weighing, and specifying the number of pounds such bushel shall contain, shall, for a first offence, be liable, on summary conviction, to a penalty not exceeding fifty dollars. 1 E. VII., 26, s. 1.

Section 337A of Part X, relating to the grading of potatoes, is embodied in Chapter 29, being "An Act to amend the Inspection and Sale Act." Copies of this may be obtained on application to the Fruit Branch, Ottawa.

The 90 Pound Potato Bag to be Enforced

While 90 pounds has been the legal standard for a bag of potatoes in Canada for a number of years, and has been generally adopted in most of the large commercial potato districts, there has not until this season, been machinery for enforcing this standard. The Sections of the Inspection and Sale Act respecting the weight of a bushel, bag or barrel of certain commodities have now been transferred for administration to the Department of Agrculture, and the Dominion Fruit Inspectors are charged with seeing that these sections are complied with. Any one, whether grower, jobber, wholesaler or retailer, who sells or offers for sale potatoes in any bag containng less than 90 pounds, renders himself liable t the penalty provided by section 356 (see above.)

The lack of uniformity in the weight of bags of potatoes has been a grievance in the trade for years as in many cases bags of potatoes sold as being of standard weight proved, when actually weighed, to contain as little as 74 pounds and in some cases even less. While in most cases the failure to give the full standard weight has noe been with intent to defraud, the effect on the consumer is the same.

Then, again, many retailers, receiving bags weighing less than 80 instead of the 90 required by law, have perpetuated the evil when selling by the peck or gallon. Instead of selng 15 pounds to the peck, many purchasers have found that they only receive 12 pounds. One purchaser who bought a gallon of potatoes a few days ago found when he weighed them that he had been given exactly 6 pounds 10 ounces instead of 7½ pounds, to which he was enttled; in other words he had paid for 14 ounces of potatoes which he did not get. With the weight of a bushel of potatoes clearly defined as 60 pounds, there is no excuse for a peck of less than 15 pounds or a gallon of less than 7½ pounds being offered to or accepted by any purchaser of potatoes in these measures.

SELECTION AND WINTERING OF BIENNIAL VEGETABLES FOR SEED

(By W. T. Macoun)

By the term "biennial" vegetable is meant one which takes two seasons to produce seed. The vegetable must be stored over the first winter and replanted, for sedd production, the following spring. Some well known vegetables of this class are beets, cabbage, carrots, celery, parsnips, salsify and turnips. Seed from these can easily be be grown in Canada if the vegetables to be so used are kept in good condition over the winter. Some information on the selection and storing of roots and plants intended for seed production is herewith given.

Unless a rigid selection is made each year, of specimens which are true to type it will not be long before a large proportion of the crop will be not true to type; hence great care should be taken to select well-shaped, medium-sized roots, typical of the variety, of beets, carrots, parsnips, salsify and turnips, firm-headed cabbage true to type, firm stalked and disease-resistant plants of celery, and firm, shapely onion bulbs. If this is done and varieties are kept far enough from others so that they will not cross the crop from Canadian grown seed should compare favorably with imported seed in regard to purity, as it does in other characteristics.

The methods of wintering vegetables for seed will vary in different parts of Canada but in most places it will be necessary to give them some protection. When possible, it is best to store them in a frost-proof cellar. But, if necessary, the vegetables may be stored outside, both in small and in large quantities, except n the case of onions, which must be kept dry and stored in a cool place where there is little or no frost.

Cabbage.—One of the simplest and most sucessful methods of wintering cabbage at Ottawa has been to place the plants side by side, heads up, in a trench or pit, the top of the heads beinb about six inches below the level of the ground, the trench being refilled with soil to the bottom of the heads. About a foot of straw is placed over the headsand, when cold weather sets in, from six to eight inches of soil is put over the straw. Forest leaves, no doubt, would preve as satisfactory as straw. When winters are not very severe or wehre a heavy covering of snow is fairly sure, the cabbage may be simply heeled in with the heads above ground and the latter covered with leaves or straw just before severe frosts. There sshould be only a light covering at first t ohelp prevent heating and rotting, and later a heavier application when the weather becomes cold.

Celery.—Good results have been obtaned at Ottawa by wintering celery for seed purposes as follows: The plants are set in a trench deep enough so that the tops of the celery come even with the surface of the ground. The plans are set in a trench deep neough so that the tops of the celery come even with the surface of the ground. The plans are set close together in the row, but each row is separated by soil. Before severe frosts the plants are covered with a heavy

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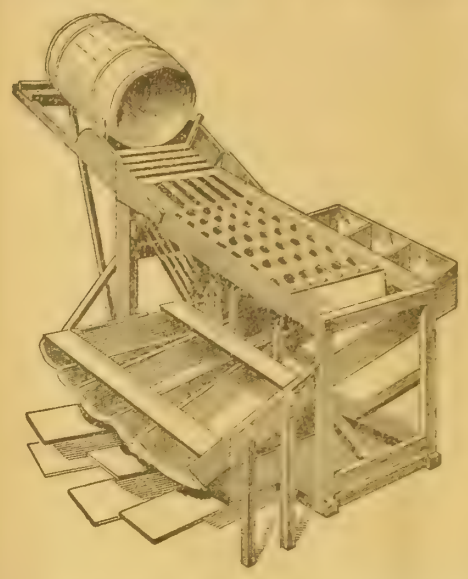

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layer of straw and when cold weather sets with about fifteen inches of soil. In 1917 nearly every plant came through the winter with the heart in good condition, which is all that is necessary to ensure good crops of seed.

Beets, Carrots, Parsnips, Salsify and Turnips.—When harvesting, the tops are cut to within two inches of the end of the specimen, thus leaving the central shoot. This is better than cutting off the leaves close to the root. The pit in which good success has been obtained in wintering roots in Ottawa is made as follows: A hole is dug the necessary dimensions, six inches deep, in a well-drained place. Poles are laid o nthe ground and covered with boards, leaving about five inches of aiar space under the flooring. A sink hole three feet deep is dug six feet away from the pit. An inverted trough-shaped pipe connecting this hole with the air space under the pit gives a chance for air circulation and drainage of any water that might soak in. The roots are put in bags to separate them better, though this is not always necessary, and piled three tiers high, running to a peak. A peaked roof of boards is put over the pit, high enough above the bags to allow about fifteen inches of straw to be packed in between; over the roof is put a light coat of straw and then fifteen inches of soil. A vent hole nine inches square is left in the centre of the roof. Before hard frost the sink hole is filled with straw and covered with boards and twelve inches of soil. The covering with soil should be deferred until cold weather sets in to avoid danger of heating, and during the winter the temperature inside the pits should be taken if the pits are large. nI many places parsnips may be left in the ground over winter and transplanted in the spring when better results will be obtained than if pitted as they are very hardy.

THE APPLE AS A FOOD

In Eden, at the dawn of time,
To all the world's regret,
The apple tempted Mother Eve,
And lo! It temps us yet.
As mellow King of Tompkins red,
And pippins smooth, invite
The apple-lover passing by
To stop and take a bite.

Thus says Miss Minna Irving in a short poem quoted in a booklet issued by the Fruit Branch at Ottawa giving 160 recipes for the use of the apple. Everybody will agree that the apple is the king of fruits whether fresh, dried, evaporated or canned, but everybody does not know to how many uses the king of fruits can be put as an article for food,—an article moreover that can be made to conserve other foods for shipment overseas. The booklet issued by the Dominion Fruit Branch and which can be had free on application to the Publications Branch, Department of Agriculture, Ottawa, fulfills the useful purpose.

THE USE OF THE APPLE

"Those who make a liberal use of apples will serve the dual purpose of saving for shipment overseas such articles of food as are fit for that purpose and at the same time furnish a useful and valuable food for the household."

"The apple without question is the king of fruits, whether fresh, dried, evaporated or canned, it is a wholesome food, easily prepared, attractive and palatable at all times."

"Always cook apples in earthen or granite utensils and use silver, granite or wooden spoons for stirring. The use of the apple as the basis for all manufactured jam is well known. This is due to the large amount of pectose which it contains. There is no waste to a good apple; even the paring and core may be utilized for jelly. Fruits are classified as flavor fruits and nutritive fruits—the apple comes under both of these heads." Extracts from a little booklet issued by the Fruit Branch of the Dominion Department of Agriculture giving 160 recipes for the use of the apple. The book can be had free on application to the Pub lications Branch, Department of Agriculture, Ottawa.

WATER-CORING OF APPLES

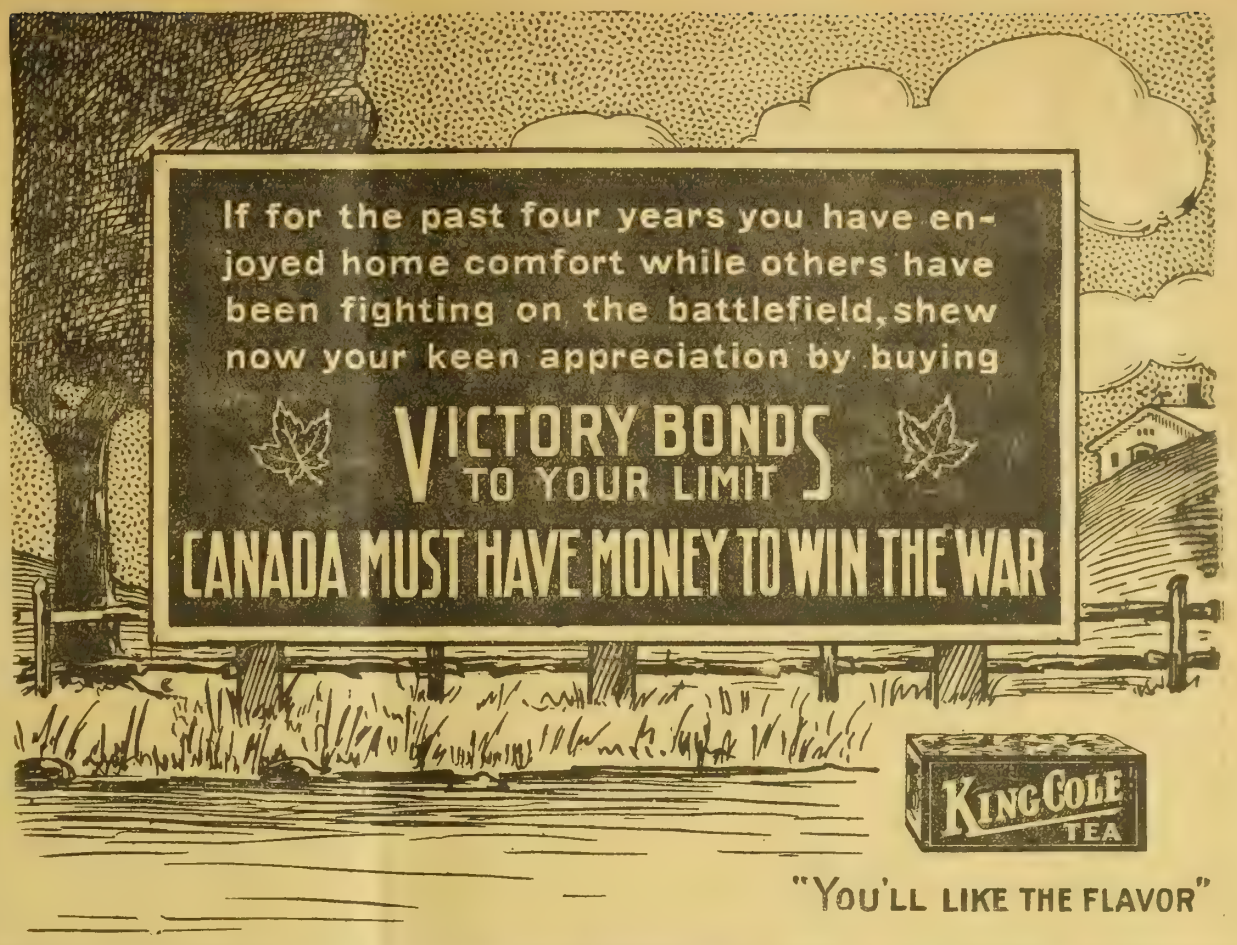
Water-coring is most frequently found in the Baldwin Northwest, Greening and Gravenstein. Leaving the fruit on the trees too late, thus allowing them to be over-ripe, causes water-coring. It is believed that this is due to cool weather checking the respirtaion from the leaves, while the roots continue to absorb a large amount of moisture. The fruit in consequence becomes overloaded with moisture.

Storage of apples in this condition has been found to entirely eliminate the water-coring. Water-cored apples after three months' storage were discovered to be quite normal and possessed good keeping qualities.

RASPBERRY GROWING

I planted some raspberry plants two years ago; they are growing splendidly, but are not bearing much fruit. Should the young shoots that grow up in the spring be cut back or allowed to grow? Should only a few canes be left in each hill?—Farmerette.

Your plants will now be established, and you may expect good returns from now on. It takes about two years for the raspberry to get a start. Cutting back the young canes is not practised by best growers; the canes are left untouched until late winter or the following spring. The thinning out of the rows or hills is not usually done until very late winter or early spring. This is best done when the ground is still frozen over, or before growth starts. Cut out all the old canes leaving only the hardiest and healthiest shoots, and only from five to seven good canes in the hills.


If for the past four years you have enjoyed home comfort while others have been fighting on the battlefield, shew now your keen appreciation by buying
VICTORY BONDS
TO YOUR LIMIT
CANADA MUST HAVE MONEY TO WIN THE WAR
KING COLE TEA
"YOU'LL LIKE THE FLAVOR"

Died of Starvation

Many a Belgian mother could have these words engraved on her child's gravestone—"Died of Starvation".

Perhaps the child has wasted away with Consumption, or has been twisted into a mockery of happy childhood by Rickets, but starvation is at the root of the tragedy.

What else can be expected for a growing child whose daily ration is the bowl of soup and two pieces of bread provided by the United States loans to the Belgian Government?

The only hope for the destitute children of Belgium is that we who can afford three meals a day will be moved to pity and send help immediately. Even a small contribution will help to take some child, sinking under its load of trouble, over to Holland, where with good milk, nutritious food, medical care and loving treatment, he or she may regain health, strength and the wish to live.

GIVE—give until you feel the pinch! Don't wait until someone asks you personally. THIS is personal!

Make cheques payable and send contributions to

Belgian Relief Fund

(Registered under the War Charities Act)

to your Local Committee, or to

Headquarters: 59 St. Peter St., Montreal.

BUTTER PARCHMENT—PRINTED OR PLAIN—AT FARMER OFFICE.

DAIRYING.

TEN RULES OF SUCCESS ON THE DAIRY FARM

1. **Keep Healthy Cows.**

Keep a reasonable number of cattle and whether the number be large or small, keep them free from tuberculosis by tuberculin testing; and retest yearly if there are no reactors. Reacting animals should be removed from the herd. The only way to keep the herd clean: Feed no milk from reacting or even untested cows, unless it has been boiled, and no skimmilk returned from creameries, to calves or other stock, unless such milk be first heated up to at least 145 degrees Fahrenheit for thirty minutes (pasteurized), or boiled, thus checking the spread of tuberculosis.

2. **Select and Keep the Good Producers.**

Know what each cow produces over and above her keep, and promptly get rid of unprofitable ones. A 4,000- and an 8,000-pound cow cost about the same to keep. One just pays for her keep, the other nets a profit of $50 to $60 per annum. Ascertain carefully your best market, whether for whole milk or butter fat. Co-operate and reciprocate with your neighbors; nothing else pays quite so well as co-operation. The use of a Babcock tester for determining the butterfat content and the use of a scale for weighing the milk will help to eliminate the poor cow.

3. **Use Only Pure-bred Bulls**

Keep and use only a pure-bred bull. Upon this depends the upkeep and improvement of the herd. There is very little difference in the cost of raising calves of superior and inferior breeding, but there is a great difference in the profits obtainable from superior and inferior cattle.

4. **Feed Liberally.**

Note that a balanced ration of 17 lbs. gives as much butterfat as an unbalanced 21-pound ration, and that continuous silage is sometimes cheaper than pasture. A ton of alfalfa hay equals in food value 60 bushels of oats. Keep in mind that only 100 lbs. of butterfat yearly per cow cost the produced on an average of 35 cents per pound; and that 300 lbs. yearly per cow cost about 12½ cents per pound. Thus does it pay royally to improve the herd.

5. **Produce the Feed.**

It pays better to market your hay and grain in the form of milk, butterfat, steers and hogs. Erect one or more silos, grow alfalfa, corn, sorghum, sweet clover, kafir corn, and soy beans. Beet tops siloed with corn, have made excellent silage. Rotate your crops. Use silage and thus secure milk-producing fodder the year around, which will enable you to keep up your milk yield during the entire year. To store the same amount of dry matter, silage requires two and a half times less space than hay.

6. **Use the Manure.**

Remember that $100 worth of hay (clover) contains $85 worth of plant food; that when this is fed to the cow, three-fourths of the plant food is returned in the manure. $100 worth of cream contains but $1 worth of fertility while $100 worth of butter contains but ten cents' worth of fertility. This makes it plain that feeding hay to the cow leaves nearly all its fertilizing constituents in the manure to be returned to the land, while had the hay been sold, this fertility would have been a total loss to the soil. Either use the manure daily upon the farm or store it in a shallow concrete pit, at a reasonable distance from the barn or milk house, and thus save the valuable nitrogen that the ground, sun, and rain would help eliminate. Keep the pasture highly fertilized.

7. **Keep the Barn Clean and Well Ventilated.**

Keep the barn well lighted, ventilated, and securely fly screened. Keep it clean. Nothing is more important than cleanliness. Keep the cows clean. See to it that small top milk pails are used, and that the milk utensils are well washed and then sterilized. Do not throw down hay to the cows an hour before milking. See that the milkers are healthy and clean persons, who wash their hands carefully before milking. Remove milk pail, when full, at once from barn, and aerate, strain the milk through cotton or gauze; or, better, clarify it with a clarifying machine. From first to last let care be taken to keep the milk clean and free from contamination of any kind. Never be without a dairy thermometer in the milk house, and use it.

8. **Keep the Cows Comfortable.**

Remember that the dairy cow is a daily revenue producer, and is the most valuable asset on the farm. She requires work, and is profitable in proportion to the attention she receives. She is a source of immediate income, and at the same time helps keep up the fertility of the soil. Also remember that the dairy cow is a mother, and that good care, kind and gentle usage, liberal feeding, and healthful environment are necessary if she is to give good profit from her motherhood. As you measure to the cow, so shall it be measured to you in return.

9. **Be Considerate to the Cows.**

During milking time use no profane language. Keep dogs and strangers out of the barn. Become acquainted with and know your cow. It pays. Under no circumstances permit a cow to be kicked or abused by the hired man—it never pays. It is mean and brutal. There always is some reason for a cow being restless. Find the cause and remove it.

10. **Provide Shade and Wind Protection, Salt, and Clean Water.**—J. A. Woodside, California in Hoard's Dairyman.

WHERE DIRT COMES FROM

City health officials, when endeavoring to improve the municipal milk supply, generally lay most stress, when formulating systems of inspection, on the cleanliness of the cow stable and barnyard. The farmer with the clean stables and the clean cows gets the highest score. Now along comes the University of Illinois with the statement that this is all wrong, that the most of the dirt in milk does not come from the stables or the cows, but that the main contamination is from improperly cleansed utensils. Their conclusions, after extensive studies, are summarized in a recent bulletin as follows:

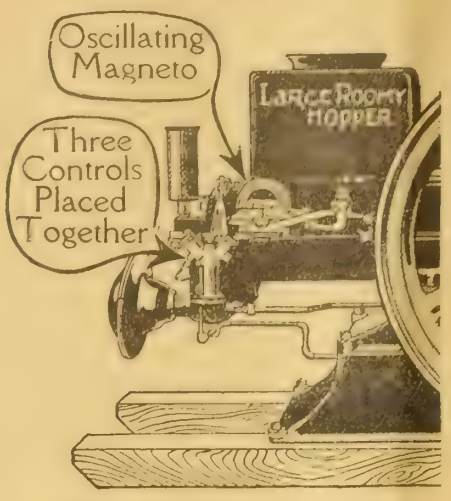
"The fact that the dirt which falls into milk at the barn is readily visible in the milk has led to the conclusion that the barn is the principal source of the bacteria in milk. The results of this study, however, show that it is the utensils, rather than the barn, that are largely responsible for the excessive bacterial contamination of milk. The extent of the contamination of milk by the utensils is strikingly illustrated in one of the experiments in this study: when all the utensils commonly used for handling the milk at the barn and in the dairy were thoroughly steamed, the bottled milk had uniformly only about 5,000 bacteria per cubic centimeter, but as soon as the steaming was omitted the bottled milk frequently contained several hundred thousand bacteria per cubic centimeter.

"The cans used for shipping milk are a particularly prolific source of bacteria when they are washed at the dairy and returned to the farm without being thoroughly steamed and dried. The number of bacteria usually added to the milk by such cans is many times larger than the number that would ordinarily get into the milk at the barn; the addition of a million bacteria per cubic centimeter of milk by such cans is not uncommon.

"A detailed comparative study of the effect of the various other utensils at the barn and at the dairy suggests that the greatest contamination comes from the more complex apparatus, such as the clarifier and the bottle filler. In one of the experiments in this study, it was found that pails added approximately 11 times as many bacteria to the milk as the barn influences, the strainer one and one-half times as many, the clarifier 30 times as many, the cooler 10 times as many, and the bottle filler 60 times as many—a total of 112 times as many added by the utensils as by the barn factors.

"It seems to the authors that in an attempt to produce milk with low germ content too much stress has been laid on practices of minor importance, and the influence of utensils poorly steam-

The Real Practical Kerosene Engine



Some Renfrew Features

is Here at Last

PLENTY of "Kerosene" engines there are, *adapted* for using coal oil, but you can't expect high efficiency from heavy fuel, on principles that apply to the light, volatile gasoline. The Renfrew is not designed from ideas derived from gasoline Engines; it is the result of years of study of the particular and peculiar requirements of *Kerosene*. The

Renfrew Kerosene Engine

is a *real* Kerosene Engine, converting every drop of coal-oil into combustible gas. It gets every whit of power out of the gas by getting it into the cylinder by the quickest route—and hot. No fuel is thus wasted by condensation, as in ordinary engines. The Renfrew way is the practical way; it has solved the Kerosene power problem.

Either on full load or light load, the Renfrew's special Kerosene mixer (designed for coal-oil) ensures a properly mixed charge. The throttle-valve for fuel supply demands a very sensitive governor, and the Renfrew has a special feature to make the governor extremely sensitive.

The special oscillating magneto and igniter makes and fires properly the kerosene mixture.

Note the Renfrew's handy controls, placed close together. The needle valves operating the supply of gasoline for starting, water for scouring, and the kerosene for running are right at your finger tips making adjustments easy as winding a watch.

These and more interesting features are fully described in our illustrated free catalogue. There is a full line of skid, truck and wagon types in sizes 3 to 14 h.p. Write for catalogue today.

Renfrew Jr.
Gasoline Engine
1½ h.p.

For operating grindstone, pump or cream separator. Has secondary pulley operating at low speed; speed changing device; air cooled; also 1 h.p. and 2 h.p. sizes. *Write for catalogue.*

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Other lines: Happy Farmer Tractar, Renfrew Cream Separator, Renfrew Truck Scales, Renfrew 30 lb. Household Scale.

304

ed and not dried has been commonly neglected."

IT PAYS TO RAISE YOUR OWN STOCK

1. It is more profitable to breed and rear good young stock to maturity than to purchase the average cows for sale, which are usually the animals least profitable and desirable in the neighbor's herd.

2. The cheapest way of building up a good herd is to raise it. The feed costs of good rearing in Canada range from $16 to $24.30 for 6 months calves, $24 to $45 for 12 months calves, and $37 to $74.30 for 24 months heifers, the variation depending on methods of feeding, feeds available and market values of these feeds.

3. Calves of poor type and breeding are not worth rearing, but good calves properly bred will be worth at least 30 per cent. and up to 100 per cent. more than their feed cost at two years of age.

4. Calves of good size, strong constitution and large capacity will, on the same feed, make greater growth and better gains than small, weak, narrow individuals.

5. Good rearing of calves is most profitable as shown in such results as:

Earlier maturity in size.

Earlier maturity in profitable production.

Greater production throughout the whole life time.

More valuable and in greater demand at the highest price.

Healthier stock.

More durable animals.

Better able to consume most profitably all cheap farm-grown roughages and convert these into milk.

6. The calf reared on its dam costs 25 to 50 per cent. more than the pail-fed calf, and the more productive the cow the greater will be the charges against the calf.

7. Pail-fed calves, reared to six to eight months largely on whole milk, make gains which cost $14 to $18.75 per cwt., which is several times the cost when a properly-fed substitute for whole milk is used.

8. Skim-milk fed sweet and at a temperature of about 90 degrees Fahr. is the best single substitute for whole milk and may reach a value of 70 cents per cwt. or more in feeding young calves. However, skim milk may be improved by the addition of a good cream substitute such as flax-seed jelly, oatmeal, or a well-balanced calf meal.

9. Buttermilk, if fed uniformly as to acidity and temperature, may have a slightly greater value than skim milk. Great caution must, however, be taken to start calves at a greater age and very gradually.

10. In feeding calves six to eight months of age on rations composed largely of skim milk or buttermilk and a good cream substitute, gains may be made at a cost of feed amounting to from $2 to $7.15 per cwt., this amount varying with the character and price of meal and the ruggedness and thrift of the calves.

11. If well started on mothers' milk, calves may be well reared on calf meals without whole or skim milk. However, greater care and attention must be paid to these calves, and even so, gains cost from $5 to $15.41 per cwt., or nearly double the cost where some skim milk is used.

12. There are many excellent calf meals on the market in Canada. The Canadian manufactured meals are as good as and generally decidedly superior to imported meals, due not only to the palatability of the ingredients and the chemical balance, but even more to freshness and freedom from mustiness.

Of the Canadian-made calf meals used the three which in total gains have given excellent satisfaction are Royal Purple, Gold Dollar and Caldwell's.

Providing the necessary ingredients are available, it may often be more economical for the feeder to mix his own calf meals. If properly done, the resulting gains in weight of the calves may be nearly as great, and often at a much reduced cost.

13. In order to rear the best and cheapest cows, all pail-fed calves should be taught to eat, at an early age, cheap and nutritious farm-grown roughages and grains. The best roughages are grass, fine alfalfa or clover hay, swede turnip, mangels and ensilage. Of the grains, oats and barley are unexcelled.

TO HAVE BETTER CALVES

1. Give suitable feeds and avoid overfeeding.

2. Feed regularly and carefully.

3. Keep calf pens clean and freshly bedded.

4. Avoid in every possible way all such infectious diseases as scours, tuberculosis, black leg and abortion.

5. Destroy parasites such as worms, ringworm and lice.

—Experimental Farms Note.

MILKING THE KICKER AGAINST HER WILL

The question as to how to handle a kicking cow has been brought up in several recent issues of your paper, but none o fthe methods is simple and effective enough. However, as this seems to be a useful point in cow handling, without criticism of any of the other methods, I will tell of a device with the aid of which I successfully milked a kicker and a fighter for several years.

I built a feed box to the wall of the barn and made ti high enough so that the cow's head would be raised just a little while eating. I made this box just a little wider than the cow and ran a one-inch by six-inch board from the box back along the cow's side to two posts, the forward post being just behind the cow's hip, and the other only far enough back to allow a bar to slip between the two posts. When I put feed in the box the cow would readily go into the brake. I would then slip a bar behind her at about the height of her hip and by placing my hand on her hip and gently pushing her over until her weight was on the off leg she would back the near leg, when I would slip a second bar between her legs as high as would be comfortable. Then I would get my stool and take my time. The cow was comfortable, and although she would try to kick several times during each milking I never lost a drop or got off my stool. The brake enabled me to buy a vicious cow for ten dollars because she "couldn't be milked." She never stopped kicking, but did stop trying to hook. E. M. G.

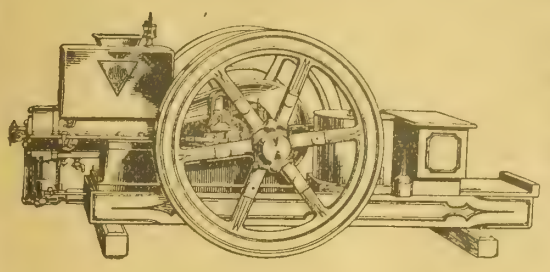
BERNARD FRICTION PULLEY

Nowadays, in this age of progress, life and labor saving devices, the necessity of a friction pulley on a gasoline engine is freely admitted. A friction Pulley is a great factor in saving belts and machines, and more, it is a safeguard to lives of men working with an engine.

Specify "Bernard" Pulley
Made in Canada by

THE A. BERNARD INDUSTRIAL CO.,
FORTIERVILLE, QUE.

"Machines must take the place of men"



Grind Feed
Saw Wood
Pump Water
Run Separator,
Churn or Washing Machine

Let the
"Alpha" Gas Engine
do your work

AN ALPHA Engine is a big help on the farm these days when labor is so hard to get. It's so reliable, too. Always on the job. Never quits. Never gets laid up. Never takes a vacation. You can always depend on an "Alpha."

Thousands of Canadian engine-owners swear by the ALPHA because they have found that it can be depended on at all times and under all conditions. It is sturdily built. It is simple in construction. It is powerful. It runs on either gasoline or kerosene and develops its full published horse power on a minimum amount of either. If you want an engine that you will be thoroughly satisfied with, put your money into an ALPHA.

Ask for catalogue, prices and complete information. Made in twelve sizes, 1½ to 28 H. P. Each furnished in stationary, semi-portable or portable style, and with hopper or tank-cooled cylinder.

THE DE LAVAL COMPANY, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA. Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butterworkers. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

SAVE THE MILK CANS

Dairy farmers have not been in the habit of looking upon tin as an important necessity in their business, but when we stop to think of it we know that in the milk business nothing is more universally in evidence than the tin can.

Now the shortage of tin, which must be imported, is so great that dairymen may have to get along with their present supply of cans. It is probable that there are many cans on the retired list that with small repairs may be brought back into use. Careful handling and thorough drying after washing will make all cans last longer. Cans that are lent never seem to wear so well as privately owned containers.

Shippers of cream can cut down their can requirement and their shipping charges by skimming a richer cream. Ten cans of thirty-five per cent. cream contain as much butterfat as seventeen cans of twenty per cent. cream. The richer the cream the more skim milk is left on the farm.

A RECORD PRICE

G. E. Day, Secretary-Treasurer of the Dominion Shorthorn Breeders' Association, writes:—On October 3rd, a load of Shorthorn yearling steers sold at $19.60 per cwt. on the Chicago market, a record price for that market. The steers averaged 1017 lbs. and were bought for the Nagle Packing Company, New York City.

NEW YORK STANDARD
HONEST GRADING
THREE NO. 1 PRIME SKUNK
Wonderful demand for raw furs. Prices highest on record. Furs are scarce and I am paying very high prices.
TRAPPERS
Many trappers have gone to war, others will have to take their place. Get busy and catch all you can. Big money in trapping.
My prices are net, I deduct no commissions and also pay express and parcel post charges. You will like my good grading and continue to ship to me. Money is sent you same day I receive your shipment. You cannot afford to be without my price list. You want most money. I want your furs. Enlist in my army of satisfied shippers. Write today without fail.
BENJAMIN DORMAN
147 West 24th Street
NEW YORK CITY

LIVE STOCK.

UNFINISHED CARCASSES

The British Ministry of Food states that so long as space for transatlantic cargoes is so very limited as at present it will be unable to accecpt unfinished beef carcasses for transportation to Great Britain or the Allies. Beef of this class includes a considerably larger percentage of bone and waste than does the well-finished article and at the same time is more difficult to handle and less easily preserved. For somewhat similar reasons the Ministry states that it will pay the top price only for bacon which is cut from select hogs weighting between 150 to 250 pounds, live weight. The beef carcass, in order to be favorably considered, should weight at least 500 pounds. It is of the greatest importance, therefore, that our farmers and feeders should make every effort to finish their stock before marketing. If any are in such a position that they cannot finish it themselves they should do their best to place it in the hands of those who can. The situation in Eastern Canada is unquestionably good so far as roughage is concerned and we are just finishing harvesting one of the best crops of grain that we have ever taken off and, while Western Canada has suffered somewhat from drought and frost, conditions have improved immensely since July last. I feel justified, therefore, in asking the farmers throughout this country to make a special effort to market only finished stock within the weights indicated.

Production is exceedingly important but quality, condition, and finish are even more essential if we are to ensure our products reaching the markets of Great Britain and our Allies as is evidenced by the statement in the first paragraph. There is, however, another reason and to our farmers and in fact to all Canadians an almost equally important reason why we should do our utmost to put only meats of the best quality and finish on the export market at the present time and in the immediate future. Practically all our bacon surplus and a very large portion of our surplus beef must find its outlet in Great Britain. It, therefore, we would retain our place on the British market both now and in the future it is apparent that we must maintain the good reputation we already have for our superior article of bacon and improve our present status as a beef producing country and, since the very existence of our bacon industry and in no small measure the continued prosperity of our beef producing interests depend upon our standing in the British market. I make this appeal feeling convinced that the standard set this year may easily determine our reputaation and largely establish our commercial position in these lines for not only the immediate but also for the more distant future.

It seems then that I am not exaggerating when I say that upon our handling of this situation at the present time depends in no small degree the life of our bacon and beef trade and I feel that I am not asking too much when I urge upon every individual farmer and feeder the importanace of each one doing his utmost to ensure only finished animals going to the block.

THE RAISING OF CALVES

(Experimental Farms Note.)

This subject could be very well divided into three ports, viz., (1) Breeding, (2) Feeding, and (3) Housing.

(1) Breeding,—In order to get the most profitable results for feed consumed and labor spent in raising calves it is necessary to see that the breeding of the calves is of the best, that their sires and dams are good individuals of the breed which you are working with, and that they have good records of performance behind them. This applies to beef breeds as well as dairy.

(2) Feeding,—As soon as the calf is dropped it should be separated from its dam and not given any food for twelve hours, when it will have developed a good appetite and be ready to take its first food which should consist of 5 pounds of its mother's milk. This should be duplicated in 12 hours which will make 10 pounds per day, which amount the calf should receive for the first two weeks. At the end of two weeks the calf should be getting 6 pounds twice a day, which should be continued for three weeks, at the end of five weeks commenc efeeding the calf a small quantity of skim-milk mixed with the whole milk, gradually increasing the skim-milk and decreasing the whole milk until at the end of the seventh week the calf would be getting 15 pounds skim-milk per day. This amount should be continued until the calf is six months old. As soon as the calf is getting skim-milk alone, there should be added to the milk a small quantity of equal parts of oil cake and ground oats with hulls taken out. This is a good cream substitute which partly takes the place of the butter fat which is lacking in the skim-milk. An ounce of this mixture, at first, twice a day, is sufficient, but should be gradually increased as the calf develops. When the calf is six or seven weeks old, there should be placed before it some nice, sweet, clover hay and equal parts of ground oats and bran which it will soon learn to eat. It should have as much of this feed as it will eat up readily twice a day. Always be careful that there is no feed left over in mangers and that all pails and boxes in which calves are fed are kept perfectly clean and sweet. They should be fed an accurate quantity at regular times which is very important in keeping the calf's digestive organs in the best condition possible, which is very essential for rapid anad robust development.

(3) Housing—All quarters in which calves are kept should be clean and they should be given all the room possible so as to allow chance for exercise. They should always be well bedded with plenty of light and good ventilation, so that the calf will develop a good strong constitution in order to be a healthy acquisition, when grown, to the farm herd.

SELECTION OF THE BOAR

In these days when pure bred males are plentiful and reasonable in price, there is practically no excuse for using anything but a pure bred boar, even though the sows be merely grades. Always select a lengthy, heavy boned boar. Such a boar will get pigs which grow faster and make cheaper gains than the pig from a small, short bodied boar.

The age at which a young boar may be first used depends largely upon his development. Some boars may be used to a few sows when not more than seven months old without apparent injury.

Probably nothing is more essential to the health and vigor of an animal than exercise. In summer it is usually a comparatively simple matter to provide exercise in a paddock or pasture lot, but in winter it is more difficult. A roomy pen should be provided, with a sheltered outside yard. Sometimes a boar can be fed in a well-littered barnyard, which makes a very good arrangement when practicable.

It requires good judgment to keep a boar in the best possible condition. Extremes are to be avoided. The overfat boar does not make a satisfactory sire, as a rule, and a half-starved boar cannot transmit vigor and constitution to his progeny to the same degree that he would if properly managed. To get the best results the boar should be in fair flesh. A reasonable amount of fat on his bones will do him no harm if he gets sufficient exercise.

An exclusive meal ration will not give good results. Equal parts ground oats and wheat middlings make a first-class meal ration. It gives sufficient bulk, and is nutritious without being heating or too fattening. Ground oats middlings, or bran may be used singly to dilute corn or other heavy meal; in fact, a very great variety of grains may be fed as long as the feeder uses judgment.

But a boar needs something besides grain and meal to be in his best condition. Skim-milk anad butter-milk are excellent, and will give good results with meal even if nothing else is used. In winter, roots of any kind are much relished. They have a cooling, laxative effect, preventing constipation and keeping the animal thrifty and vigorous. If roots are not available, alfalfa hay of fine quality may be used to give bulk to the ration. Some feed the alfalfa hay dry in racks, and others prefer to cut it and soak it with the meal ration or scald it with the boiling water before mixing with the meal.

Summer management is usally simpler than winter. A pasture lot provided with shade is on of the best places to keep a boar. The grass, alfalfa or clover, or whatever the pasture may consist of, will furnish the bulky succulent feed necessary for health, and gathering part of his food from pasture compels the boar to take exercise. If it is not possible to provide the pasture, he should be liberally supplied with green feed in his pen.

FINISH YOUR BEEF

The Hon. T. A. Crerar, Minister of Agriculture, calls upon Canadian farmers to finish their beef animals for market. Too many light weight animals have been slauaghtered.

"It is of the greatest imoprtance," says Mr. Crerar, "that our farmers should make every effort to finish their stock before marketing, so long as space for trans-atlantic cargoes is as limited as at present. The British Ministry of Food will pay the top prices only for bacon which is cut from select hogs, weighing between 150 anad 250 pounds, live weight. The beef carcass, in order to be favorably considered should weigh at least 500 pounds.

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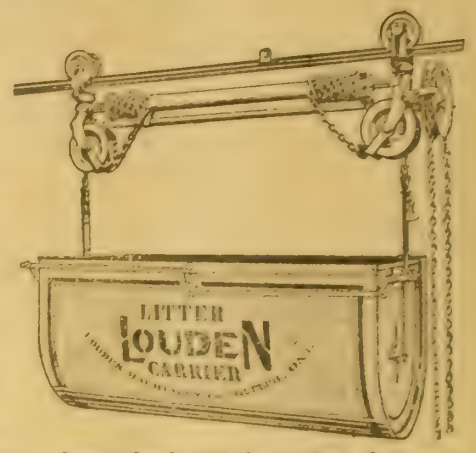

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DOMINION SHORTHORN BREEDERS' ASSOCIATION
W. A. DRYDEN, Pres., Brooklin, Ont. G. E. DAY, Sec., Guelph, Ont. 10

The Problem of Winter Feeding

You are now facing the problem of winter feeding and it is one worthy of great consideration, if you value the health of your stock and hope to keep them in proper condition until the Spring.
Once the animals are tied up for the winter they are immediately deprived of exercise, green grass and various herbs, which they have been accustomed to during the Spring, Summer and Fall while on the free range—and which act as natural tonics to the digestive organs, thus helping the animals to assimilate the food they eat. Stall feeding is entirely different and if not properly carried out will uncondition any stock. Dry or winter feed even of the best, if not mixed with ingredients to promote digestion, soon causes stomach troubles, and your animals cease to thrive, with the result that the Spring finds your herds and your profits in grave danger of being depleted. Don't risk having unfit stock

FEED

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Keeps horses thrifty and healthy with nice glossy coats. If you have a horse that is hide-bound, rough, off its feed, or in a run-down condition, use INTERNATIONAL STOCK FOOD TONIC. The remarkably quick results obtained will be evident in the improved all round condition and appearance of the animal.

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INTERNATIONAL STOCK FOOD TONIC tones up the sluggish digestive organs of your milch cows, assisting them to extract all the milk producing substances from the food. The cows thus give a larger flow of richer milk.

FOR YOUR HOGS

INTERNATIONAL STOCK FOOD TONIC increases your hog profits by giving quick growth and by keeping hogs healthy. It is not what a hog eats but what is digested and assimilated that means rapid growth and profitable feeding.

International Stock Food Tonic is just the thing for young stock. It helps to promote rapid growth and makes all stock more productive. The best recommendation for International Stock Food Tontic is the number of farmers, ranchers and stockmen who use it. From all parts of the country come unsolicited testimonials telling us about the great results that have been accomplished by the use of this tonic.

READ THESE LETTERS

Orangeville, Ont., May 16th.
Some people asked, the other day—in fact, people are asking me every day—what has made my horses' coats so nice and glossy. I think once you feed a horse with INTERNATIONAL STOCK FOOD TONIC, and get him in good shape for the spring work, he will stay fat and have a better coat on after using the INTERNATIONAL STOCK FOOD TONIC.
(Signed) Elgin I. Holmes.

April 13th, Listowel, Ont.
I am a farmer and stock-owner and I must say this: There is no better animal tonic than your INTERNATIONAL STOCK FOOD TONIC to keep stock in good shape. I use it all the time, and if all farmers would do likewise, they would do well.
(Signed) I. J. Bender.

South Melfort, Sask., Dec. 6th.
I have been using your INTERNATIONAL STOCK FOOD TONIC for over seven years, and it is just as good as you say it is.
(Signed) F. Kennedy.

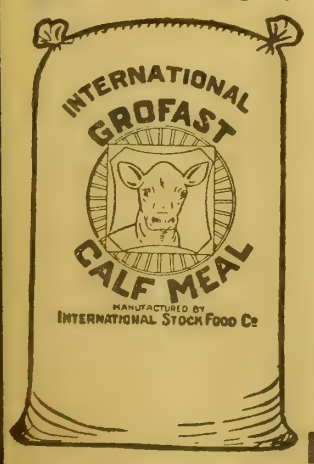
Waterville, Que.
I have always found your STOCK FOOD to be a valuable TONIC on my farm, and I have now used it for the past five years and have not had a sick horse or cow for one single day in that time. My six cows are as fat and healthy now as at any time in the summer and are always ready for their feed, and am certain they are giving more milk than other folks' cows who don't feed INTERNATIONAL STOCK FOOD TONIC, as it keeps the animals healthy and in good shape, whether horses or cows or pigs.
(Signed) Wm. H. Day.

Paisley, Ont., R. R. No. 3
Kindly ship me at once by freight twelve pails of INTERNATIONAL STOCK FOOD TONIC. You will note this is the second twelve-pail order I have bought this season. I have used a lot of INTERNATIONAL STOCK FOOD TONIC, as you will see by your records, and find its use very profitable to me.
(Signed) J. H. Turner.

Calumet Island, Que.
I have been using your INTERNATIONAL STOCK FOOD TONIC on my horses, cattle and hogs all winter; it's certainly a great blood purifier; my stock is in as good condition as they would be in the summer months. I would not want to be without INTERNATIONAL STOCK FOOD TONIC again.
(Signed) W. J. Deroeiur.

Terra Cotta, Ont., October 31st.
I have used your INTERNATIONAL STOCK FOOD TONIC for fifteen years, and am using it to-day, that expresses my opinion better than words what I think of INTERNATIONAL STOCK FOOD TONIC. I think it is the best ionditioner for horsese in the world. And my experience leads me to believe it makes your horses disease proof.
(Signed) Lorne L. Plant.

Aneroid, Sask.
I have used INTERNATIONAL STOCK FOOD TONIC FOR FIVE years now and it is a FINE PREPARATION for all animals, especially for overworked horses to build them up again, besides which, it is reasonabel to purchase.
(Signed, E. Cotterell.



That International Stock Food Tonic is a winner cannot be doubted. The best way however to convince yourself is to try it. For sale by dealers everywhere in convenient sized packages. 60 cents, $1.20, $1.75, or 25 pounds pails for $3.75 each.
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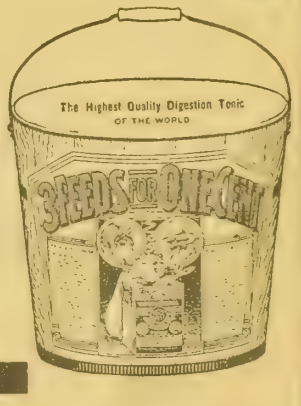

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THE HORSE

ACUTE DIGESTION

This kind of indigestion, with engorgement, may arise from repletion with solid food or from the evolution of gases arising from the fermentation of food. It is often very difficult to determine whether the trouble is confined to the stomach or whether the intestine also is involved. This is not very important, as affections of this nature are concomitant, and require the same treatment as far as treatment by an amateur is concerned. When the trouble is confined to the stomach the modern veterinarian can act directly by the use of the stomach pump.

Causes.—The usual causes are: too much food; food swallowed greedily without proper mastication; feeding immediately after severe and long continued exercise; severe exercise too soon after a hearty meal, especially if the horse has been given something to which he is not accustomed; sudden changes of food; and drinking excessive quantities of water too soon after a hearty meal. It is not uncommon to see a well marked case for which no well marked cause can be given.

One of the most frequent causes is what may be called mistaken kindness on the part of the owner. A horse that has been idle for some weeks and has been given no grain is unexpectedly required to go a journey or do a day's work. In order to fortify him for the usuaual exertion he is given a full feed of grain, hitched and driven or worked. The stomach is charged with grain to which it is not accustomed, and the horse performing physical work to which he is not accustomed. These two conditions in many cases cause "acute indigestion." When horses under the conditions noted are required for service care should be taken to fede very lightly on grain until after the service has been performed. Then, in order to compensate for the extra labor, they should be fed a moderate allowance of grain for a few days.

orses whose digestive organs are either congenitally or temporarily weak, or whose organs have become weakened by disease, also those horses which are weak, anaemic, poorly fed and emaciate danimals, or very young or very old animals and animals recovering from disease, etc., are especially predisposed to digestive trouble.

Among the direct irritating causes are green food, food and drinks that are hot, or that are frosted, unclean or partially decayed foods, mouldy hay or grain, matters undergoing fermentation or decomposition. as decomposing roots, fruit, grass, or germinating grain.

In cases where no well marked cause can be given we must decide that there is some temporary weakness of the digestive organs, which, while producing no visible symptoms, render the horse in that condition in which indigestion is easily produced. At the same time, an attack seldom occurs except in horses congenitally predisposed, that cannot be traced to carelessness or ignorance in feeding or usage.

Symptoms.—The symptoms of many diseases of the digestive organs simulate each other so much that it is often difficult to say, in the early stages, just what the disease is. Hence, the advisaiblity, when convenient, of procuring expert attention, as an attack of a serious nature may be mistaken for a simple ailment, and if not energetically and skillfully treated early may reach that stage in which treatment will be of no avail. There are many cases in which the symptoms are not typical.

The first symptoms usually are uneasiness, dulness, stamping of the feet, lying down, probably rolling, rising again, looking toward the flank, lying down again, etc. The pulse at first increases in force and frequency, but if relief be not given in a few hours loses force while still increasing in frequency.

In many cases these symptoms are preceded by a semi-diarrhoea, the horse voiding semi-liquid faeces frequently, but in small quantities.

There is usually more or less well marked fulness (bloating) noticed, more marked on the right side. In some cases, however, the formation of gases is confined to the stomach, when little fulness of the abdomen is apparent. Eructation of gas is not uncommon, and in rare cases there is actual vomition of small quantities of ingesta. Either of these symptoms indicates a very esrious case. When relief is not given the symptoms increase in intensity.

In some cases death occurs in one or two hours after the first symptoms are noticed, while in others twenty-four to forty-eight hours, or even longer, may elapse before either recovery or death takes place. In cases that do not yield to treatment the violent symptoms are usually succeeded by dullness and stupor. The pulse becomes weak and very frequent, almost or quite imperceptible at the jaw. The patient will either stand, or walk aimlessly around the stall or paddock, breathing shortly and frequently and often perspiring freely, the visible mucous membranes highly injected, the eyesight evidently impaired. This indicates that inflammation of the stomach, and probably also of the bowels, has resulted and the patient will probably remain standing, or wander around until he falls and expires. In the meantime there is usually little or no passage of faeces, and the intestinal murmur is absent or of a metallic sound.

Treatment.—Place in a large, comfortable box-stall or small paddock. Do not force exercise nor prevent him from lying down. Give 2 to 3 oz. of oil of turpentine (according to size of patient) mixed with a pint of raw linseed oil, as a drench. It is good practice to apply to the abdomen cloths wrung out of hot water and give injections of warm soapy water per rectum. If the pain be severe give 1 to 2 oz. of chloral hydrate or 1 to 2 drs. of the solid extract of belladonna, or 1 to 2 oz. of the tincture of belladonna in a pint of water as a drench. Do not give opium in any form, as it checks the action of the bowels, which we want to encourage. Watch him closely and if he becomes stall-cast relieve him. If relief be not obtained in two hours repeat the dose, and it will be wise to get expert attention as soon as possible. If this cannot be done continue treatment, repeating the doses every two hours as required, but after the second dose of turpentine mix it with new milk instead of oil. When bloating is excessive it is good practice to puncture at the most prominent part between the point of the right hip and the last rib, but for this purpose it is necessary to have an instrument called a trocar and canula. It is good practice to administer a purgative of 6 to 9 drs. of aloes and 2 drs. ginger, either moistened, rolled into cylindrical shape an dwrapped in tissue paper and administered as a ball, or mixed with a pint of cold water and given as a drench after the acute symptoms have passed.

The patient should not be exercised until the bowels have regained their normal condition after the administration of the purgative, and he should be very carefully fed and lightly worked for a few days afterwards.—J. Hugo Reed, V. S.

CHRONIC INDIGESTION

This kind of indigestion without engorgement, is caused by improper food, imperfectly masticated food due to the process of dentition, diseases or irregularity of the teeth, voracious feeding, irregularity in feeding, debility or partial inactiviay of the digestive glands.

Symptoms—A capricious appetite, and often a tendency to eat filth; usually increased thirst; the animal becomes hide-bound, has a dry scruffy skin; irregularity of the bowels; general unthriftiness, dulness and more or less marked inability to perform work. Whn caused by imperfectly masticated food, the cause can usually be told by the appearance of the faeces. Colicky pains are sometimes present an hour or so after feeding.

Treatment.—Ascertain and remove the cause if possible. In all cases examine the mouth and teeth. If they require attention and the owner has neither the necessary instrument nor the skill to correct the fault he should take the horse to his veterinarian.

Where the fault is not in the mouth, and the animal be not too weak, give a laxative of 6 to 8 drams of aloes and 1 dram ginger.

(We may here state that in all cases where a laxative or purgative is to be given, and prompt action is not necessary, it is wise to prepare the patient by feeding bran only for 18 to 24 hours. In all cases after the administration, the animal should be given rest, and bran only to eat until purgation commences, which is usually 20 to 24 hours or longer. When the first does fails to act, a second should be given in about 48 hours).

After the bowels have regained their normal condition mix equal quantities of powdered sulphate of iron, gentian, ginger, nux vomica and bicarbonate of soda, and give a tablespoonful three times daily. Give food of good quality in small quantities, and as digestion improves gradually increase the quantity until the desired amount can be fed.

In speaking of the different forms of

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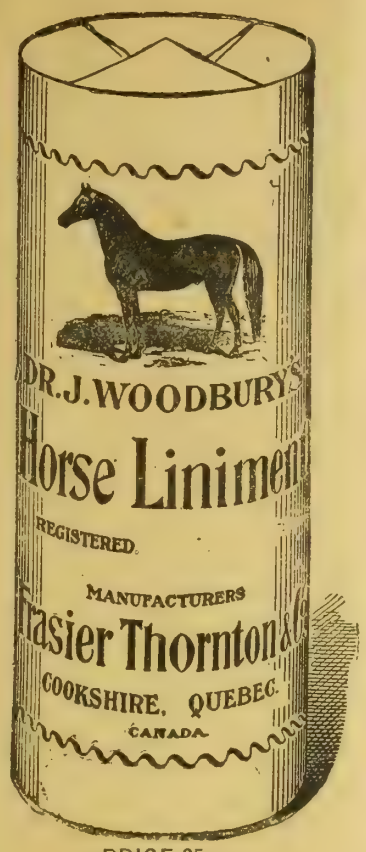

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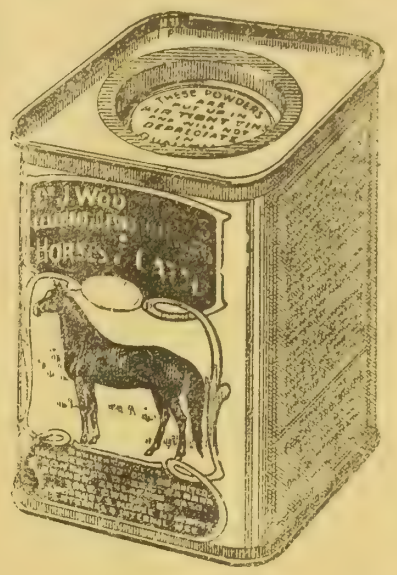

ligestive troubles in horses modern veterinary writers generally speak of hem as different forms of colics. We hall speak of them by their old familiar names, as we think this will be nore readily understood by those who nay study the information given in his bulletin.—J. Hugo Reed, V. S.

CONSTIPATION

A partial or complete inaction of he bowels may be looked on more as a symptom than as a disease of itself.

Causes.—An absence of laxative ood, change from green to dry food, hange from hay to straw, a partial inction of the glands of the intestines, a partial or complete paralysis of the oats or the intestines. The bowels of ome horses appear to be naturally orpid.

Symptoms.—A dulness, impaired appetite, passage of small quantities of ard, dry faeces, and in some cases light colicky pains, an alteration in he nature of the intestinal murmur nd sometimes an absence of sound.

Treatment.—In many cases a change o more laxative food will correct the ault. If colicky pains eb present the dministration of 1 to 1½ oz. each of he tincture of belladonna and sweet pirits of nitre in a pint of cold water, s a drench, will usually be effective. Opium in any form must be avoided as t tends to increase constipation. As in nostly all cases there is partial or omplete paralysis of the muscular oats of the intestines, active purgatives must eb avoided, as they cannot ct while the paralysis continues. The aralysis must be overcome by the dministration of 1½ to 2 drs. powderd nux vomica three times daily and ectal injections of warm soapy water. When the paralysis is overcome, vhich can be told by the passage of aeces, even in small quantities, and return of the normal intestinal murmur, a laxative of 1 to 1½ pints of raw inseed oil should be given and the anmal fed on laxative, easily digested ood.

Note—The intestinal murmur can be etected by holding the ear to the anmal's flank. In order that a person nay be able to detect an abnormal ound, or the absence of sound, he nust, of course, be familiar with the ormal sounds. This familiarity can e gained only by listening to the ounds in the abdomen of a healthy orse.—J. Hugo Reed, V.S.

IMPACTION OF THE COLON

Causes.—Horses over abundantly ed or fed upon food containing large uantities of indigestible or woody bre, as over-ripe hay of any kind, are iable to suffer from an accumulation f such matter in any part of the large ntestine, especially in the large colon. his condition is not uncommon in orses whose ration has been suddenly changed from hay to straw. It may e due to an unexplained weakness of he digestive organs, or partial inactivty of their plands, want of exercise, or ny sudden change of food. It is not ncommon in horses that do not thorughly masticate their food, due to too reedy feeding, irregularities of the eeth, or diseased liver, or, in fact, to ny inaction or partial inactive condiion of the glands of any portion of he digestive tract.

The same causes largely operate in xciting the various diseases of the diestive organs. It may not be considred out of place to repeat that when orses are intelligently fed and exerised digestive diseases seldom occur. are must be taken that the quality of he food is good, that the quantity is in ccordance with the size of the animal nd the amount of work performed, nd any change of diet is made gradally.

It may also be wise to remark that ll horses over five years old, and oftn those even younger, would be better if they had their teeth examined, nd, if necessary, dressed by a cometent man once every year. This tatement will probably be considered by some as extravagant, but it is a fact nevertheless, and the horse owner who attends to this matter regularly is amply repaid for the outlay. His horses can then masticate their food more thoroughly and without irritation to tongue or rheeks, and consequently will thrive better, look better, and be less liable to the rlass of diseases under disrussion. Many will say, "My horses' teeth are all right; the animals eat well and keep in good londition." This may be qhite true, bdt it does not follow that beladse a horse lonsumes his food without apparent difficulty and without quidding, that his teeth are in first-class condition. If examined, there will, in most cases, be seen or felt, sharp points on the inner margin of the lower molars, and the outer margin of the upper ones. These projections, while probably not materially interfering with mastication, cause more or less irritation to the tongue and cheeks, make mastication more or less unpleasant and warrant the expense of having the cause of irritation removed.

Symptoms.—The symptoms of impaction of the colon are not usually alarming. The conditions may be present for some time without any serious symptoms being noticeable. It may be noticed that for a day or two the animal has not voided his normal quantity of faeces, while that voided has been somewhat dry; also that his appetite, spirits and ambition have not been quite normal. He will probably now begin to show more or less well marked colicky pains, become restless, lie down, get up again, etc., and show more or less general uneasiness, but seldom shows violent symptoms. The pulse, in most cases, is slightly increased in force and frequency, and, as the disease advances, it increases in frequency but decreases in force. The mucous membranes are usually injected. A peculiarity of the symptoms usually shown is a desire to sit upon his haunches, or when standing to press his croup against some stationary object. He resists the introduction of the hand, or injections into the rectum, and, if the ear be placed against the abdomen, an absence of the normal intestinal murmur will be detected—there will be either an absence of sound or sounds of a metallic nature. There will be little or no faeces voided, and a fulness of the abdomen, better marked on the right side, will be more or less evident. When relief is not afforded, the symptoms increase in intensity, gases form and increase the fulness of the abdomen, the pulse becomes more frequent, but weaker—often almost, or quite, imperceptible at the jaw—and the patient either walks aimlessly about or throws himself violently down, rolls and struggles. Rupture of the intestine may now take place (especially in cases where the symptoms are violent) which causes death in a few hours, or inflammation of the bowels results, which is equally as fatal, but not often so quickly.

Treatment.—As there is always partial or complete paralysis of the coats of the intestines, the administration of large doses of purgative medicines must be avoided until the paralysis is overcome. It is good practice to administer a laxative, say, 6 drs. of aloes and 2 drs. ginger, or a pint of raw linseed oil to a horse of ordinary size. Follow up with 2 drs. nux vomica every eight hours.

Combat pain by giving 1½ ozs. chloral hydrate, or 2 drs. solid extract o fbelladonna, or 2 oz. of tincture of bella donna and sweet spirits nitre in a pint of water as a drench every two or three hours as the symptoms indicate. Do not give opium in any form, as it increases the constipation.

Remove the contents of the rectum by hand and give injections of warm soapy water per rectum every three or four hours. Some recommend the injection of a solution of aloes into the rectum, aout 1 oz. to a gallon of water, and when the patient will retain the fluid for a considerable time it may give fair results.

If gases form and the patient becomes bloated, give 2 to 3 ozs. of the oil of turpentine in a pint of raw linseed oil. This may be repeated every two hours, but after the first dose it will be wise to mix the turpentine with new milk instead of oil in order to avoid too much purgative medicine.

Note.—In recommending doses we always mention the proper dose for animals of ordinary size. Very small or very large animals should be given doses in accordance with their size.—J. Hugo Reed, V. S.

FLATULENT COLIC

Colic in which there is the formation of gases in the intestines, principally in the large intestine, is known as "flatulent colic." This form may be diagnosed from the spasmodic form by the symptoms being less alarming and violent but of a more persistent character; there are practically no periods of ease. The symptoms of pain are constant, but vary in intensity. Emission of gases per rectum is often noticed, and, particularly if the small intestine be involved, there may be eructations of gases and in reasonably well marked cases a more or less well marked distension of the right side of the abdomen. In such cases treatment should be directed to neutralize the gases or cause their expulsion, and at the same time keep up the heart's action. For this purpose 2 to 3 fluid ozs. each of oil of turpentine and the aromatic spirits of ammonia, in 1½ pts. of raw linseed oil, should be given. If more than one dose be given it is wise to use new milk instead of the oil. Rectal injections as for spasmodic colic should also be given. It is also good practice to force the patient to take walking exercise and to apply friction to the right side of the abdomen. The acute symptoms should be followed by the administration of a saline purgative, as in cases of spasmodic colic, and as the patient already has been given oil the amount of the saline should be less than under other circumstances. In all cases of colic in the ox it is good practice to explore the rectum by hand, remove its contents and follow by injections. —J. Hugo Reed, V.S.

KILLING DOGS IN BRITAIN

It is estimated that there are between four and five million dogs in the United Kingdom and a committee has been considering the question of rationing dogs and of killing off a certain percentage. Many dogs have already been destroyed in order to save food.

Why not appoint an Official Dog Killer here. Let him appoint every other man in Canada a deputy, and let us all get busy.

POULTRY.

CULLING THE LAYING STOCK

The ordinary laying flock is made up at this season of yearling and older hens in about equal numbers. The older hens are mostly two-year-olds, though often there are a few hens three, four, or more years old which have been kept because they are favorites with the owner or he was in error about their age. The usual reason for keeping a hen after her second year is that she is known or supposed t ohave been an extra good layer. In the case of hens of small breeds, which do not tend to fatten easily after they have passed their prime, those considered likely layers may be kept for trial in a third laying season. But in the medium and large breeds the end of the second laying season should be the limit of age in the selection for future egg production. While occasionally a hen of this class is a profitable layer for three, four, or in extreme cases five years, the proportion that are profitable layers after their second laying season is so small that it is not good policy to reserve any after that age unless they are known to be exceptionally good breeders and are kept for that purpose.

All hens over the age limit having been discarded, the problem is to select from the remainder those that may reasonably be expected to produce well for the remainder of this year and through quite a long period after molting. The points to be considered in judging hens for this purpose are:

(1) How well they have laid.
(2) Whether they are laying.
(3) Their general physical condition and its relation to future egg production.

The owner of a small flock, who knows the hens individually and watches them closely, will usually know from daily observation that certain hens are yood layers. It is entirely possible to know all the good layers in a small flock in this way. But as hens are usually kept, only the few good layers that are conspicuous for some other character are known as good layers. To identify the rest some principle of selection based upon appearance or structure must be used. There are several such principles, each of which independently is serviceable for the purpose, though not infallible. If judgments of a hen by these different principles agree as to her probable performance as a layer, their common verdict may be taken as in all probability correct. When they disagree the case becomes doubtful and the relative values of the several conclusions on the different points must be weighed according to circumstances which might affect them.

A hen that at this season has smooth bright plumage and shanks and beak of a deep yellow, or a rosy flesh color, fresh looking black or slate—as the case may be—there certifies that she has not been a profitable layer. Good condition at all these points shows that she has not laid enough to drain her system of the elements that give high color to the skin and a fine surface to the feathers.

A good layer that has been kept on moist grassy land or that has recently done duty hatching and rearing chicks may have the shanks fresh looking, but will have rough plumage. If she has not yet molted her plumage will be very rough. If she has molted early, as some hens do when running with chicks, her feathers though new will still be sort and rough. Such a hen is likely to lay well through the fall and molt at the beginning of winter. It will pay to keep her as long as she laye, but the tendency to premature molt is not a desirable character and she should not be kept longer.

In the farm flock having good range there is usually no difficulty about distinguishing the poor layers by their good looks at this season. When hens have been kept on very dry land or in barn yards the plumage may be rough and dull and the shanks bleaced in the poor layers as wel as in the good ones if not to the same extent, at least as much that judgment on these poits is made more doubtful. The condition and appearance of the comb are of some assistance in that case.

The comb of a healthy laying hen is much larger when she is laying than when she is not. It is bright red in color, suffused with blood, yet soft and flexible. The poor layer that under favorable conditions has nice plumage and skin, usually has comb and wattles of a rther darker red, looking more as if the blood were somewhat congested in them. This is not so characteristic or so marked that muc himportance should be attached to a judgment based on the appearance of the comb alone.

A hen that is very fat at this season is a poor layer without question. One that is very thin and poor now may have laid well through the winter and spring, but unless the poultry keepe is conscious that shortage of feed is to blame for her poor condition, it is safe to conclude that her best laying days are over.

The best way to deal with such hens is to feed them heavily to fit for market. Manay of them will begin to lay when they regain flesh and lay well for a few weeks or months. They should be kept as long as they lay, feeding well all the time, but sold or killed as soon as they stop laying again. They are not the kind to keep over.

The width between the pelvic bones —when considered in connection with other points of structure and condition —is a fairly reliable index of marked differences in the laying capacity of fowls. Good width in this region is generally associated with sufficient breadth and depth of body to give the "double wedge shape," which is often called "the laying type."

To be a good layer a hen must have body capacity for vigorous vital and digestive organs and also for a considerable number of eggs in process of formation. A little careful observation will enable one to judge marked differences in laying capacity, as these affect or are affected by structure of the body quite as well by the form of the bird as apparent to the eye as by actual measurement of the width of the pelvis. The latter, however, is of greater service in determining whether a hen is laying at the time of handling for in the same hen the width is greater when she is laying than when she is not. This is a natural difference, the body being more distended when carrying eggs and the bones of the pelvis separating more when a hen is in that condition to give easy passage when the eggs are extruded.

A poultry keeper who, following the instruction and sugestions given, has culled the poor and unpromising layers from the flock, can get a much better idea of the characteristics of good layers and of their apearances at this season from the hens that remain than from any verbal description or pictorial illustration.

The flock now consists of about half the original number. The hens are all rather shabby in plumage with bleached shanks. They have bright, healthy-looking combs and watties, and bright, clear eyes. They are alert and energetic—out early in the morning foraging and resting in the shade by turns through the long hot summer days, and making the most of the long evenings, rarely going to roost while they can see to eat.

A flock of growing pullets nearly always contains a considerable proportion of birds that are very much under size or in other ways poorly developed. Most poultry keepers are inclined to keep these until the flock is culled at maturity. It is much better to cull them out as soon as they are marked as conspicuously backward. This is the best policy at anay time. In war time, with feed scarce, press of other more important work is the only excuse for letting them remain. They will never make a profit and the sooner they are eaten the less will be the loss on their account. Even where foraging is good it does not pay to keep them. It is much better to let the good thrifty pullets have all the feed.

MOULTING PERIOD A CRITICAL TIME.—PROPER FEEDING HASTENS IT

At this season of the year many of the hens are shedding their feathers, preparory to putting on a new coat for cold weather. Any hen which is not considerably advanced in the process of moulting by the early part of September is more desirable as material for fricassee than is an egg producer during the winter. Early moulting is essential, in fact, it is of prime importance with winter layers. No hen can be expected to lay to any extent unt. she has put on the full coat of feathers. For this reason, we find that eggs are usually scarcer and higher in price with the coming of fall than even during the hot and trying months of summer.

Save Early Moulters for Breedinig

The entire moulting process requires about three months to complete. It should not be prolonged beyond October, or mid-November at the latest. Hens which have had the best of care and possess the right inherent qualities may have about completed the work in September. One will do well to pick out those that moult early and save them for breeders next year. It is not at all certain however, that this quality is an inherited one. The hen may have been delayed in her moulting, which has lowered her vitality. But, however this may be, it is certain that she is not a desirable breeder.

Proper Feeding Important

The moulting process may be materially hastened by proper feed. Bird feathers are composed largely of nitrogeous material and mineral matter.

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Thus, it is obvious that food in which these elements predominate, should be fed. Corn and wheat furnish more carbon (an element which tends to fat), than nitrogen. It is evident, then that green feed should be given in generous quantities. A broad range, where fresh green grass is abndant, is desirable. If the range also supplies bugs, grassmoppers and other insects plentifully it will help the hens wonderfully in getting their new coats. If the birds appear in poor condition and the feather-shedding is delayed, feed them a small quantity of linseed or cottonseed meal and plenty of beef scrap, or better, fresh meat and green cut bone, if available. This feed will help to build up bodily vigor and at the same time furnish material for starting the new feathers. Birds which are poor and skinny will be late in commencing the moulting process.

Some hens seem to shed their feathers all at once, others do it gradually, at any rate, sheltered quarters should be provided. There are cold nights and stormy days which are trying to the almost naked bird. In fact, she may need a warmer place at this time than during the coldest weather, when she is well provided by nature to resist the cold. Colds are often developed during such periods and croup sometimes results.

Hens may continue to lay during the feather-shedding period, or even part of the time while the new feathers are growing, were they in good condition in the beginning, and are kept so.

There is always sure to be a certain period when laying is discontinued. Usually this is at least a month or six weeks in duration, even if the birds have the best of care. With poor care and neglect it may be twice that length, and with the late moulters it may last until spring. Thus it can readily be seen that the moulting period is a critical time with the fowls, and much depends upon the care-taker.

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EGG EATING AND FEATHER PULLING

In the spring of the year two bad habits, egg-eating and feather-pulling, often develop in poultry flocks. There is usually one or more causes for the development of these habits although they develop sometimes without any aparent cause. They both agect profitable returns and consequently should be stamped out as quickly as possible.

Egg-eating is frequently caused by a lack of lime, in the form of oyster shells, or meat food, in the form of beef scraps, green bone and skim milk. Hens which do not get enough exercise sometimes become neavy egg-eaters. Remove the offenders from the pen. Place oyster shells and grit in hoppers or boxes, so that the birds can help themselves a tany time. Add meat food and green food, mangels, turnips or sprouted oats, to the ration, and make sure the hens take plenty of exercise. Always provide dark nests—make them so that the hens enter the nests from the rear.

Feather-pulling usually develops in flocks where there is a deficiency of meat food in the ration, or where the birds do not take sufficient exercise. Remedy the cause. Give meat food in the ration, and give the fowls all the skim milk they want. Feed the whole grains in five or six inches of litter.

GUINEA FOWLS ON EVERY FARM

Every farmer should keep a few guinea fowls, in the opinion of W. A. Lippincott, professor of poultry husbandry in the Kansas State Agricultural College. Not only do they make themselves valuable as watch birds against hawks, but, because of their wild game flavor, they are coming into favor as food.

"Formerly hotels and restaurants served brouse, quail and other wild game birdg but now, on acocunt of the enactment of game laws, they are forced to find a substitute. The guinea fowl makes an acceptable substitute and is being used increasingly because of its simlar taste."

Due to the small size of the guineo egg, the raising of guineas for egg production is not advised by Professor Lippincott. The guinea egg is classed as a second. If the demand for the wild game taste is to be satisfied, however, the production of guineas for the market should become profitable.

Especially is the guinea a source of profit when raised on the farm in small numbers, since the food that it eats in ranging over the farm is just waste feed that probably would not be utilized otherwise. The guinea fowl does not stand confinement well, but on the farm where it can have free range the conditions are nearly ideal for this bird. Guineas can be raised by use of incubators, but the method which proves most satisfactory is too use hens, or, better yet, bantams, for brood mothers. Then the wild nature of the guinea will be moderated, and the birds can be cared for more easily.

FEED BRAN TO HENS AND GET MORE EGGS

Bran is one of the best of the inexpensive poultry feeds, being especially valuable because of the large amount of lime it contains for the composition of egg shells. It is light and bulky, neither heating nor fattening, and therefore ideal for summer feeding to mature fowls. Too much grain in the summer time is liable to make the fowls overfat or clog their digestive organs.

We keep a small box or trough constantly filled with bran in the poultry house, where the fowls can partake of it at any time desired. Self-feeding hoppers are especially good to keep the bran in, if you have them; they prevent waste and contamination of the feed. There is no real danger of the fowls eating too much bran, and when it is kept before them constantly it will not interfere with the regular feeding schedule. If you do not want to feed bran in this way, however, see that the fowls get plenty of it in the mash.

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THE BREEDING COCKEREL

Though it is best to separate the cockerels from the growing pullets as soon as their sex can be determined, considerable harm can be done by herding flocks of young cockerels intended for breeders by themselves away from all female birds. A better plan is to put them with a few mature hens and a cock bird or two to keep them in order. Cockerels reared in this manner are less liable to be sterile, will prove less abusive wehn first mated up with females, and will be less liable to go to pieces after a few weeks of breeding.

SENT TO SIBERIA

The Government Conscripts Cowan's Cocoa—Cheerful News for Our Men

Toronto, Oct.—A plentiful supply of Cowan's delicious and nourishing Cocoa is assured the Canadian troops that are going to Siberia. Tons of this splendid food were recently purchased by the Canadian Government, and are now en route to a certain port on the Pacific Coast.

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WOMEN'S INSTITUTE SECTION

This section of the Maritime Farmer will be devoted to the interests of the Women's Institutes of New Brunswick. We respectfully solicit contributions from all branches, touching upon matters of general interest. We wish the members of all branches of the Women's Institute to feel that the Maritime Farmer wishes to fully assist them. The Maritime Farmer is the official organ of the Women's Institute of New Brunswick. We would suggest that YOUR BRANCH name a press committee, so that news from YOUR BRANCH may reach other branches.

THE HON. W. F. ROBERTS ON MEDICAL INSPECTION

Interesting Address Delivered by Him Before Convention of Women's Institutes—Gave Outline of Provincial Health Organization—New Brunswick Banner Province in Health Legislation

The address by Hon. W. F. Roberts, M. D., M. P. P., of St. John upon the important subject of "Medical Inspection" delivered before the sixth annual convention of the Women's Institutes of New Brunswick is herewith given. The address was listened to with great interest by those in attendance and gave an outline of the organization of the Department of Health recently established by the Provincial Government.

Hon. Dr. Roberts spoke as follows:

Madam Presiding Officer, Ladies of The Provincial Women's Institute in Sixth Annual Convention, and friends.

Having been invited to address you upon a subject in which I am and have been for years much interested, let me assure you I deem it a signal honor and an especial privilege particularly at this time.

Permit me first to congratulate you upon being members of so practical, worthy and representative organization as I understand the Women's Institutes to be, representing as they do almost every piece of inhabited territory within the Province and carrying to its utmost recesses its valuable precepts and teachings.

Important Organization

I feel quite satisfied that, while but six years have passed since its organization, much practical and necessary work has been accomplished, among and for the people with whom the personnel of this Institution has come in contact; and if much has been done during this short period, how much more must lie in wait to be done, particularly from now until after the readjustment of the world and provincial affairs following the close of the Great War.

I am impressed with the fact that it is nothing short of Providential that such an organization as yours should have existed sufficiently long to have its Constitutional machinery working and running so smoothly, and to have become intimately acquainted with the multiple needs of Home and Empire as found within the confines of our fair province. Wtih your numerous societies, scattered as they are throughout the length and breadth of the province, you constitute one of the most important mediums for the disseminating of knowledge and information calculated for the well being of its inhabitants; and if for no other reason, I certainly feel you should have the cooperation and practical support of all well thinking people.

The subject suggested by your Committee who waited upon me, that I might speak to you upon, is "Medical Inspection of Schools and its effect upon future citizenship." This selection in itself is a further indication to me of your wishing to keep abreast of the times, because of your interest in the homes of the Province and its future welfare.

Citizenship

Before entering upon a discussion of the question itself, let us for a moment decide upon an interpretation of the word "Citizenship" which will serve to ring before our minds in a practical way the application of our topic.

We may speak of this term "citizenship" in both a general and a particular sense. First in a general sense with the qualifications of ones domicile either by birth or by settlement and that of a legal age. Then in a particular sense, such as the qualifications necessary to become or be denominated a good citizen, as we so frequently read and hear spoken of an "ideal citizen." These qualifications in addition to birth and age, might be enumerated as being: Law abiding, Loyal, Intelligent, Industrious, Moral, Thrifty, and one which we have heretofore been so inclined to forget and which after all in the laying of the foundation of the superstructure of "Future Citizenship" is the all important pillar,—viz. HEALTH. In fact, in the erection of a successful career, Health and Education are common corner stones, for the man is crippled physically without the one, and mentally when not in possession of the other. How handicapped must be the various callings in life, and how much more could be accomplished by their followers if the amazing fact did not obtain that from 50 to 60 per cent of our men when placed in line for physical examination for Military service, are unable to occupy the "A" class position, in other words are physically incapacitated to that extent. This means more than appears on the surface. It means that many of these deficiencies have advanced so far that but little if anything can be done to restore, and further renders the subject the more susceptible to further ills, and in the majority of instances shortens his days.

Health an Asset

In the one case Health is one of the requirements of Citizenship, is an asset to the Province, to the Dominion, to the Empire; in the other, where it is wanting, that fact is in the majority of cases a liability. If you doubt it visit our hospitals, our tubercular sanitariums, our incurable homes, our municipal homes, our asylums, and (had we one as I hope we may) our home for defective children. Place in a column the figures representing the cost of maintenance of any one, or all of these, and I will place before you a solution of the problem where thousands upon thousands of dollars can be saved, to say nothing of the saving of depleted populations, pain, suffering, and anguish, by the practical application of a Public Health Policy.

Now having defined "Citizenship", and by the way drifted a little,—where do we begin to study the Public Health problems? Where do we begin to study the Educational problem? Why with the children, of course; then so with the topic in hand. Let us continue our attention now to "Medical Inspection of Schools" and before we have finished we will have seen its relationship to "Future Citizenship."

Some one has said, relative to Good Citizenship as the basis of our future liberty, "Whatever ideals it is desirable for the citizens of tomorrow to possess must be instilled into the consciousness of the children of today." If this is true regarding matters pertaining to ideals of mind, they are equally applicable to matters pertaining to physical freedom from incapacitation.

Science of Disease

It was Plato who over 2,000 years ago wrote "Medicine is the Science of Health." Today however, it is properly regarded as the "Science of Disease" and as the authority for the above statement goes on to say, had the truth of Plato's dictum been recognized some Government department of preventive medicine would long ago have been established and we should be in the habit of paying for medical attendance only while we were actually maintained in good health.

The truth of the principle that "prevention is better than cure" is appreciated only in the face of actual and imminent danger such as the outbreak o fcholera or smallpox. In such an emergency nothing is left undone, no expedient is lelt untried. The preventive measures adopted may even savor of extravagance. But the crisis weathered, our enthusiasm soon begins to wane and eventually is at a standstill until some further dread malady is on its way or springs up in our midst.

Public opinion must first be impressed by solid argument based on substantial facts and common sense, then progress is ours. Here consequently is found one reason why public opinion and even in some instances, the medical profession heretofore has withheld judgment upon the necessity for the medical inspection of schools. Had the importance of preventive measures been more thoroughly realized there would have been less delay both in the recognition of the necessity for, and in the institution of medical inspection.

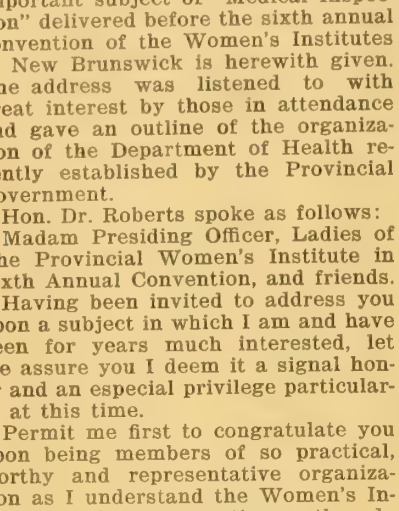
Why the most superficial physical examination at school undoubtedly tends to prevent much actual ill health, owing to the resultant discovery of disease in the early stages, as well as of many simple ailments which might ultimately become serious.

Physical Examination

In speaking of the History of Medical inspection we find as far back as the schools of Hellas at least the aspect of school hygiene, viz., physical examination was recognized as a means of developing the ideal citizen of which we have already spoken. The training of the body was regarded as of equal importance with the training of the mind. But in the Greek world physical education was a reality world physical education was a reality. It did not consist of a systematized code of physical exercises, nor of a course of physical training imposed at set times. It was a natural education of a child's body, directed partly to securing healthy growth and development of good physique, and partly to creating a favorable reaction upon the child's mental and moral activities. As quoted from an article upon this sugject,—"Man was a whole to the Grecians of that day, and one part of him could not be sound if the other parts were not." A national school which trained the minds only and neglected the bodies of the pupils would have been inconceivable to the Grecians of that day.

This was long ago. Suffice it to say that here and there thoughout the world spasmodic efforts have been put forward in the interests of the health of the child at school; but it was not until the last century that anything of a durable or lasting character was accomplished.

We find that apart from physical training Dr. Karl Lorinser was the first medical man to make a thorough study of school hygiene. In 1836 he published a pamphlet in which he attacked the educational system and pointed out that the then long school hours, the subjects taught, and the school management generally, were largely responsible for deterioration of the children's health. This created a great stir in Germany and led to the general admission that school hygiene was a subject for special and thorough study. In 1842 Dr. Seguin published a book re the condition of the feeble minded, which marked a great educational advance in the field of school hygiene. It is the first practical differentiation of educational methods for feeble minded children, and it was soon followed even in England by the



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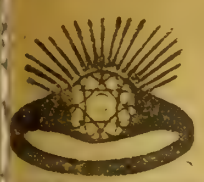

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establishment of a number of institutions fo. rthe education of such children.

In England

In England for the most part these matters were neglected. Children coming from well to do homes were not at that time considered to be in need of health inspection. The only provision was arrangements to make clean the child who came to school dirty. But the Education Act of 1870 changed all of this, bringing as it did every child under the direct attention of the State Educational Laws. But it was 20 years after the institution of compulsory attendance before any medical advice was thought necessary in this particular. During this intervening time, however, many observations were made by men both in England and on this continent, which in some instances formulated the basis of further enquiry. Cohn of Breslau was the first. He was an army surgeon during the Prussian war of 1866, and had observed defective vision among the soldiers, and a little later on published his famous report upon the eyesight of some 10,000 school children. His investigations gave rise to much speculation and as a result medical inspection of schools was advocated by Virchow and discussed in that year at the Scientific Congress. Later Cohn himself drew up a scheme of duties for school physicians which was first considered at the International Congress of Hygiene at Geneva in 1883.

Other Efforts

In 1875 Prof. Bowditch recorded the measurements of height and weight of 25,000 school children in Boston. In 1881 Hertel of Copenhagen began an extensive inquiry into the conditions of school life. One year later, as a member of the Danish Commission, he reported that of 16,000 children examined in both primary and secondary schools, 29 per cent. were unhealthy. In 1884 a Royal Swedish Commission was appointed to investigate health conditions in school, and on their behalf Prof. Axel Key examined 18,000 children in several countries and published a report upon the growth and development of boys and girls at different age periods. The result of this investigation was that he found over 35 per cent of children suffering from chronic physical defects, such as an aemia, headache and short sight.

Dr. Francis Warner of England in 1885 first directed his attention to the examination of school children, with especial reference to their mental status. His pioneer work led to the appointment in 1888 of a Committee of the British Medical Association for the Scientific study of the mental and physical conditions of child life. In 1892 Warner published a full report of the examination of 100,000 school children in some 20 schools. The result of his investigations was to arouse general interest in the whole subject of educational hygiene, and as a result mental deficiency was officially recognized by the appointment of a Royal commission on the Blind, Dumb and Feeble-Minded; and while at this work Dr. Warner drew public attention to many conditions adversely affecting the health of the school child. In fact he laid the foundation of the science of child study and stimulated the interest of many medical men in the large field of school hygiene. In England at this time the authorities were slow to take hold of the matter, while during this period in Germany there was a popular agitation for systematic medical inspection of schools, and had become universal throughout that country.

First Official Step

The first official step in England was the appointment of medical officers to act as advisors on general medical matters in connection with the Elementary education, and especially for the examniation of children suffering from disease necessitating absence from school. No statutory provision for these appointments or for conduct of any medical inspection existed, but progressive school boards, taking a wide view of their general powers, appointed medical advisors as necessary officers under the general powers conferred by certain sections of the Elementary Education Act of 1870.

Then in 1891 a medical officer was appointed by the school board of London, and two years later Dr. James Kerr was appointed at Bradford, ostensibly for the purpose of examining absentees from school who were alleged to be suffering from disease, but who did not furnish a Doctor's certificate and from this small beginning many other duties were required of him and finally Dr. Kerr was recognized as the pioneer of all official routine in connection with medical inspection in the Elementary school of England. He was the first man to enter the schools daily in the role of a school doctor and to study all the problems of school hygiene.

In 1904 we read where Dr. Leslie McKenzie writing states, in England the system has so far spread that already there is a society of medical officers for schools. The larger school boards provide for medical attendance on their teachers and pupil teachers, for the regular visiting of their school for the dove-tailing of medical school inspection with the regular work of the public health organizations, and generally for the discovery of infection among school children, and the prevention of infection by detailed periodic examinations of school premises.

Other countries taking on medical inspection of schools have been Austria Hungary, 1873; in France in 1886 and thoroughly re-organized 1896; Argentine in 1888; Norway began in 1885 and was completed and made obligatory in 1891. Sweden began as far back in 1868, and have been reorganizing and placing on a more up to date basis, 1895-1899. Japan, school doctors appointed for every school in 1898.

Switzerland, 1898 passed legislation insisting on a thorough medical examination of every pupil before entering school for the first time. Germany in 1891, although certain districts were under inspection as far back as 1870.

In U. S. A. separate states are taking up this important question. Some 10 or 12 states already have made same compulsory. Even in Russia, Bulgaria and Roumania quite well organized systems of school inspection have been obtained from 1871 to 1904 respectively. So much for the History of Medical Inspection.

In Canada

In Canada, Ontario was practically the first province to adopt medical inspection. It was first carried out in Toronto and now the remotest portion of the province is under this legislation. Later the Western provinces have fallen into line, and nearly every province, has either separately or in association with the Educational Department, some form of Medical Inspection.

Banner Province

New Brunswick, I might humbly suggest, is the banner province of the Dominion in having an Act calling for a Department of Health, represented upon the Executive the same as the other departments; in other words, placing the question of the health of the people in the foreground where it naturally belongs. This means that medical inspection will be controlled by the state in this Province and the argument for the support of this rests upon the fact,—and it cannot be denied,—that there are present in the schools (town and country alike) children suffering from preventable and remediable diseases, of which both the teachers and the parents are ignorant; besides others suffering from diseases the serious nature and consequences of which no one but medical men can recognize. This assertion scarcely needs the support of figures and statistics, but in passing let us recall the fact that more than 80 per cent of the children are suffering from defective teeth, and 50 per cent are affected with vermin or othr parasitic conditions; 20 per cent with defective vision, and that 10 per cent are retarded in their educational progress by physical defects such as anaemia, general debility and deafness, resulting from adenoidal growths or discharging ears. These figures may not be exact, but the general inference is sufficiently sound and inasmuch as the greater National asset is Men and not Money, it behooves the state to be up and doing, particularly at this, the most unique time in the history of the world regarding the question of the conservation of health and life.

Must Have It

Then a further argument to my mind is that if we have the law of compulsory education, we must of necessity have that of medical inspection. It is hardly fair to insist upon attendance at schools on the part of the child, and at the same time fail to make the environment of such safe for the child to remain in.

Systematic medical inspection benefits the province from an educational standpoint inasmuch as one of the principal pillars supporting education is Efficiency; and one of the important ways in which this can successfully be brought about is quite obvious. The higher the percentage of attendance the more chance there is that the education given will prove beneficial to a greater number of children, so that efficiency indirectly depends upon attendance and most measures that increase attendance make for increased efficiency in education.

Quoting from a portion of an article from D. Cody the New Minister of

Troubled With Kidneys For Over Three Years.

WAS CONFINED TO BED.

Mrs. George Gray, Hopewell Hill, N.B., writes:—"I had kidney trouble for over three years, and was so bad I was confined to my bed. First I contracted a bad cold and it went to my kidneys, and I suffered dreadfully. I got the doctor, but he did me very little good. I tried all kinds of kidney pills, but got very little help. One of my neighbors came in to see me and told me to get Doan's Kidney Pills and give them a good trial. I used five boxes and they have cured me so that I can sleep all night without being disturbed, and I feel better in every way. I cannot say too much in favor of Doan's Kidney Pills."

Doan's Kidney Pills are just what their name implies; a pill for the kidneys and the kidneys only. When you ask for "Doan's" see that you get them put up in an oblong grey box with our trade mark "The Maple Leaf". Price 50c. at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

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I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

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I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
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Education of Ontario, we find him saying that "It will be the business of the oncoming generation to reconstruct the world. Immediate measures will be taken by those who are in active life but for the full expression and character of the new world after the war, we must wait for the efforts of the young and hopeful who, spared the actual horrors through which the present generation has passed, shall take off its coat and reshape the world to the heart's desire. One child therefore becomes all important in the scheme of things. The application of eugenics would guarantee him proper birth,—but if that scheme cannot be statutorily employed, every possible assuagement of existing conditions should be offered. The business of the child now newly born is no less onerous than to remake this planet, and therefore every amelioration should be applied to produce fitness for the task imposed by the circumstances of the war.

Training for Motherhood.

The girl should be trained for motherhood. Motherhood itself should receive a fresh consecration in the general heart and mind and every creature, male and female, who encourage or condone race suicide, should repent in sackcloth and ashes."

Also another quotation from an address delivered by Dr. Cody at Agricultural College in Guelph, as follows: "There is a real need throughout our rural schools particularly for medical and dental xeaminations. I don't think it will ever do to let this rest as merely an optional matter. We are not conserving our children if we do not also try to conserve them in body. I feel that this matter must be taken up and dealt with right speedily. The Women's Institutes are doing excellent work in some parts of the Province in carrying out medical inspection, but at the best it is only spasmodic. The system when introduced in this province must be compulsory and universal.

In conclusion there are many features of this work that time will not permit on this occáson to consider. We have had the History, the arguments for the same illustrations as to the findings of a systematic medical inspection, which by the way is argument enough in itself for the bringing into life such legislation and then applying same.

Provincial Organization

Now as to methods. It is our plan to have a Public Health Bureau, made up of Chief Health Officer, Chief Medical Officer, Chief of Laboratories, and a District Helath Officer for each district. There will be three districts.

Eastern:—Comprising Restigouche, Gloucester, oNrthumberland, Kent and Westmorland.

Southern:—Albert, Queens Kings St. John City and county.

Western—Charlotte, Sunbury, York, Carleton, Victoria and Madawasko.

Each district will be subdivided into sub-districts and each county will constitute a sub-district. The sub-districts will be divided into parishes, each parish will have a medical school inspector who will examine the school at the beginning of each term and be on call from the teacher regarding any special condition that shall arise.

The teachers will receive a certain number of lectures at Normal School re recognition of communicable diseases, so as to be able to request the withdrawal from school of any pupil, who will be required to produce a certificate of family physician that they are eligible physically to return.

The district health officer will have charge of the medical inspection in his own district, and each medical inspector who is an appointee of the sub-district board of health must receive the approval of the Chief Medical Officer before contract is closed. The above refers to rural schools. To city, town and consolidated schools the medical inspector in some instances will be an all time official, in other instances will visit the schools as often as it is thought necessary.

The premises of school buildings are inspected by any medical inspector and district health officer, and recommendations for their betterment from the trustees to act upon, and will be kindly compulsory.

The system of school inspection is good, but rendered much more effcetive by a school nurse whose duty it will be in cities and towns at least to visit the school with the inspector and then to follow up the work a the home of the child to see that such is being attended to.

I have in mind some service of a similar nature for rural districts, but it will take some little time to develop same.

I fear I have already wearied you, but there is so much to be said, it is difficult to know when to stop writing. It is needless at this stage to direct your attention to the fact that the effect of medical inspection on future citizenship will be the robbing of our hospitals, asylums, sanitoriums, etc. of their patients and handing them over as practically healthy units to the state as an all-round asset, and all that that means to the home and the various callings in life.

CHILDREN AT THE TABLE

What a pleasure it is to sit down to a meal at a nicely aranged table, where the children eat without remarking on the food that is placed before them, and the good lady of the house, even though she may look a trifle hot after getting everything ready, seats herself also, and evryone enjoys the perhaps plain, but well-cooked meal. It is a pleasure to be in a home where the older people are allowed to carry on the conversation without any un-

Save Sugar!

Don't use Sugar where Corn Syrup will serve your purpose as well or better. The ships that carry sugar are needed for soldiers and their supplies. Crown Brand and Lily White Corn Syrup are delicious, wholesome and economical alternatives for sugar in pies, puddings and preserves; as a sweet sauce and on cereals.

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Delicious for table use and cooking.

In 2, 5, 10 and 20 lb. tins, at all dealers

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SEVERE HEADACHES.

Headaches are generally caused by some disturbance of the stomach, liver or bowels, and although not a serious complaint, the cause should be removed before they become habitual and make your life miserable.

You will find that Milburn's Laxa-Liver Pills will remove the cause by moving the bowels gently, safely and surely, refreshing and strengthening the stomach, toning up the liver, and thereby banishing the headaches.

Mrs. J. Armstrong, 7 Harris St., St. John, N.B., writes:—"I take pleasure in writing you concerning the good I have received from using Milburn's Laxa-Liver Pills. I had such severe headaches I could not do my work, but after using two vials of your pills, I can now do my work with comfort and pleasure."

Milburn's Laxa-Liver Pills contain purely vegetable matter and do not gripe like harsh mineral purgatives do. Price 25c. a vial at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

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This Real—Gasoline Auto

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Real 5 horse power auto with high class air cooled 4 cylinder gasoline motor, just big enough for any boy or girl. Runs like real autos. Has artillery wheels, solid rubber tires, steering gear and wheels, 2 brakes, tool box, tools, cone clutch. Any boy or girl can run it easily. A real prize for boys and girls.

SOLVE THIS PUZZLE

23	8	5	14	-	7	5	18
13	1	14	25	-	9	19	-
4	5	6	5	1	20	5	4
-	1	14	4	-	14	15	20
-	1	-	13	9	14	21	20
5	-	2	5	6	15	18	5

WHEN WILL THE WAR BE OVER?

CAN you answer this question—When will the war be over? Every boy and girl wants to know. You can, if you are able to read this puzzle. The answer is contained within the 48 squares above. What is this answer? Solve it, and valuable prizes await you.

HOW TO SOLVE IT

The above squares hold the answer. It is in one sentence of nine words, containing forty letters. Each letter is represented by a number, and that number is the position of the letters in the alphabet. For instance, A is represented by the figure 1, as it is first in the alphabet, and so on. Now, to help you get started, we will tell you that the first letter in the puzzle is "W," because W is the 23rd letter in the alphabet. Get to work and figure out the words in the sentence, and try to find the answer to the great question, "When will the war be over?" It is not easy, but it is worth while trying for.

THE PRIZES

PRIZE	VALUE
1st—Five Horse Power Auto -	$150.00
2nd—Dandy Folding Camera -	25.00
3rd—Magnificent Gold Watch and Chain, or Girl's Wrist Watch - -	15.00
4th—Lovely 36-inch Doll, hand-gowned, and beautiful English Doll Carriage -	10.00
5th—Electric Projectoscope. Better than a magic lantern. Will show any picture or post-card photo on screen -	7.50
6th—Full-size Football - -	5.00
7th to 10th—Self-Filler Fountain Pens, each $2.50, - -	10.00
Also 10 Extra Prizes for Boys and Girls, each $1.25, - -	12.50
Total Value of Prizes - -	$235.00

Copy your answer upon a plain white sheet of paper as neatly as you can, because neatness spelling, hand writing, and punctuation count if more than one answer is correct. Put your name and address in the top right hand corner of the paper. If you have to write a letter, or show anything else, put it upon a separate sheet of paper. We will write and tell you your answer is received, and tell you if your solution is correct, and also send you a complete illustrated list of the grand prizes that you can win.

What Others Have Done, You Can Do

Here are the names of only a few of the boys and girls to whom we have recently awarded prizes—

Shetland Pony and Cart, Helen Smith, Dimention.

Shetland Pony, Beatrice Hughes, Hazenmore Sask.

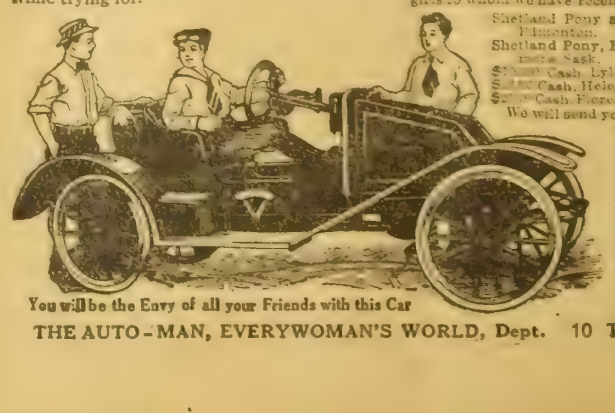
$[illegible] Cash, Lyle Benson, Hamilton, Ont.

$[illegible] Cash, Helen [illegible], [illegible], Alta.

$[illegible] Cash, Florence Nesbitt, Atherton, Ont.

We will send you names of many others too. Only boys and girls under 17 years of age may send answers and each boy or girl will be required to perform a small service for us for which an additional valuable reward or special cash prize will be given. The contest will close on March 31st at 5:00 p.m.

Send your answer this very evening. Address



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DODD'S KIDNEY PILLS CURED HIS CHRONIC SORE BACK

M. J. Morrison Had Suffered for Thirty-Ive Years, But Got Prompt and Permanent Relief.

Tarbot Vale, Victoria Co., N.S.—Nov. 2nd, (Special.)—Those who have not used Dodd's Kidney Pills, and who would like to enquire as to their value as a kidney remedy, can get valuable information from Mr. M. J. Morrison, the postmaster here.

"I had been suffering from sore back for over thirty-five years, but after taking the first box of Dodd's Kidney Pills I have never had a moment's pain in my back," he says.

"Dodd's Kidney Pills are an invaluable remedy for sore back, especially if the kidneys are affected."

It is because his kidneys were affected that the postmaster got such prompt and permanent relief by using Dodd's Kidney Pills. They are a kidney remedy. Acting directly on the kidneys, they put those important organs in condition to do their full work of straining all the impurities, all the seeds of disease out of the blood.

It is because of thus removing the cause of disease that they have given such splendid results in treating rheumatism, dropsy, heart disease, gravel, diabetes and Bright's disease. Ask your neighbors about Dodd's Kidney Pills.

---

timely interruptions from the children seated at the table. And yet how many times have you had a meal at a table packed full of dishes, table cloth none too clean, food splashed on to the plates, children untidy, lady of the house hot, untidy and generally cross. And there you sit trying to shout in a word now anad again to your hostess while she is trying to listen to you and, at the same time keep the children quiet and see that everyone is getting enough to eat. She is generally the kind that criticizes her own cooking saying that this is not just what it should be, that the biscuits are a little heavy, the potatoes aren't quite salty enough, and the hundred and one other little things that help to make the children dissatisfied with what is set before them. Remarks sould never be passed on the food in front of children, and if people would remember this, children would perhaps, never think of "not liking" that or "liking" something else. They would take it for granted that what "mother" makes must be good, and eat it without question.

With few exceptions, children may be taught proper food habits. Children know nothing of foods in the beginning save those which are set before them and have to learn to eat every article of food. If from the first wholesome and suitable foods are served without comment or question, most children will like them, and thus normal dietary habits will be established.

In some cases a child may exhibit a distaste for certain food—such as eggs, for example, which he may not be able to eat but in general he or she can be and should be taught to eat all wholesome foods. A child who insists that he does no like this or that food may not be perfectly well, or his appetite may have been perverted by one cause or another. Others may have had their tastes limited by the objection of the members of the family to certain articles which are consequently limited by the objection of the members of the family to certain articles which are consequently almost excluded from the table. It is also quite possible that a certain child's distaste for certain foods may result from poor cooking, scorching, over-seasoning or other faults of preparation. For example, most children have a wholesome natural objection to pepper and sharp condiments, and will not eat foods in which they are used. It may be sufficient to destroy their relish for such things as soups, vegetables and meats. On the other hand, food may be so negative that it excites no pleasure in eating. It is important to have the ordinary foods appear on the family table so seasoned and flavored as to make them attractive, palatable and capable of exciting a copious flow of the various digestive juices. Flavorless, badly cooked, unattractive, and unappetizing food will be poorly digested. The pleasing appearance of food and an agreeable manner of serving it have much to do with the pleasure of eating it.

After the third year three good meals a day will usually suffice. The habit of lunching or nibbling on candy or cake between meals tends to destroy the natural appetite and to make a child indifferent to his regular meals, and leads to indigestion and malnutrition. If the interval between dinner and supper is very long, a light lunch consisting of milk, or bread and butter, ripe fruit, or other light food may be given halfway between these meals.

Meats should be cut fine, vegetables mased or strained, anad seeds and skin removed from fruits for the youngest children.

From the first the child must be taught to chew his food thoroughly, and must be continually watched to see that he does not fall into the habit of eating too fast and swallowing large mouthfuls without sufficient mastication. To guard against this habit, pleasant conversation and laughter should be encouraged at the family table, anda children should learn from the example of their elders to make the mealtime a happy one.

If a child will not eat he sould not be urged to do so, nor should he be tempted with indigestible or unsuitable foods when he refuses the ordinary articles. The lack of appetite may be due to many cauases, but a child in health should be able to eat simple, well-cooked food of pleasant variety at the three regular meals of the day. Morked or long continued lack of appetite, or freakish desires—as, for example, the longing for vinegar or sour fruit—may indicate illness, and such a child, instead of being scolded or nagged, which alone is sufficient to spoil the appetite, should be examined by a physician. Poor teeth or lack o fteeth may cause enough pain to the child to diminish his appetite. Constipation or any form of illness may have the same effect.

fI there is some wholesome article of food which the child persistently refuses and which seems essential to his well being a small portion of this food perhaps in a new disguise may be given first at the meal and other desired articles withheld until the child has eaten some of it. But taste and appetite are more successfully cultivated when they are noticed least, and the very effort to make a child eat something he does not fancy may serve to establish an even greater distaste.

CURED HIS RUPTURE

I was badly ruptured while lifting a trunk several years ago. Doctors said my only hope of cure was an operation. Trusses did me no good. Finally I got hold of something that quickly and completely cured me. Years have passed and the rupture has never returned, although I am doing hard work as a carpenter. There was no operation, no lost time, no trouble. I have nothing to sell, but will give full information about how you may find a complete cure without operation, if you write to me, Eugene M. Pullen, Carpenter, 5543 Marcellus Avenue, Manasquan, N. J. Better cut out this notice and show it to any others who are ruptured—you may save a life or at least stop the misery of rupture and the worry and danger of an operation.

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8 Big family game consisting of Checkers, Chess, Dominoes. New game of Autheurs, Fox and Geese, Nine Men Morris, The Spanish Prison and the game of Flirtation, all for 10 cts. Best value. 25 Big Silk remnants for fancy work for 10c. 10c

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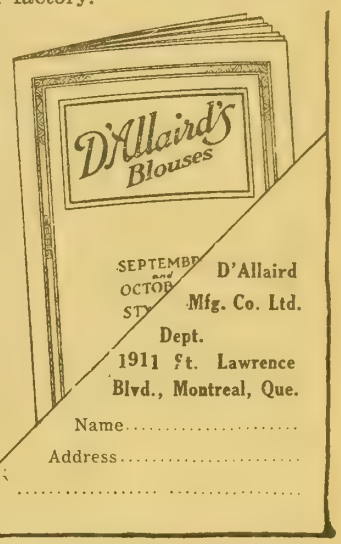

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17A

THE PEAR TREE

"Why, Ellen Riley!" exclaimed Mrs. Walling. "I didn't know you was as wasteful as all this! Look at all those pears lying on the ground! Why in the world don't you pick them up?"

"Because they aren't mine," Ellen answered. "They belong to Amelia Stedman over the fence there. All is, the limb hangs over and the pears fall on my side."

"Well," said Mrs. Walling, "it's your fruit then. The law gives it to you. Ask Tom Cheney and see. If I were you I wouldn't hesitate to use them. You haven't any pears. And these look nice." She stooped and picked up two or three.

Ellen caught her arm. "Put them back on the ground quick!" said Ellen. "She's there behind the curtain watching, and I wouldn't have her think I touched one of those pears for the world."

"Pshaw!" Mrs. Walling deliberately set her teeth in the fruit. "I ain't one mite afraid of Amelia Stedman, and I'll tell her so to her face." She studied the situation a moment. "How does she get the pears on this side of the fence. Does she come over into your yard after 'em?"

"Yes. You see that place where the pickets are off? She comes through there. I don't mind."

"Well, I should mind," said Mrs. Walling emphatically. "I wouldn't have her on my premises. I'd tell her so, or put up a sign. I guess you haven't got any spunk, Ellen."

"Maybe I haven't" signed Ellen. "But I always liked Amelia. We were young together and you know you feel sort of tender toward people you've always known. She is a good woman at heart. The trouble is she lived so long with old Jake Stedman that she has grown to be a little like him."

"Maybe you're right, Ellen," Mrs. Walling said. "Well, since you won't have the pears I picked up I'll take 'em home with me."

Ellen stood a moment looking after the other woman as she moved down the street. Then she cast a look at the pears lying upon her grass. It would be so easy to help herself to some of those pears and vindicate herself by declaring that the law was on her side. She was poor and every scrap of food counted. She had little to eat that was appetizing, and Amelia had so much. By her husband's death a few months before she had been made the possessor of more than most women of her class. The money would never do her or any one else any good, so selfish was she. No one liked Amelia Stedman, while Ellen was a general favorite.

Ellen was a slender little woman, with gray hair, agate-like brown eyes, and a sweet mouth. Life had not provided her with many sweets. But she had made the most of what she had and been content with it. She lived alone in her own house, and no one knew how poor she was, because she never told. When she could get plain sewing to do she fared a little better.

She went into the house and prepared her usual supper of toast and tea. After she had eaten she put everything in the nicest order and sat down to her tatting. She was making a collar for Lottie Cheney, the justice's daughter, who was soon to be married. Ellen put a great deal of love as well as pains into that collar, for she had known Lottie's father and mother in their young days. In fact, if it had not been for Lottie's mother Ellen might have married Tom Cheney. As it was Ellen had been crowded out of happiness. Tom had been a widower now for more than a year, but Ellen felt she was too old for romance. And it was said of Tom that his devotion to his wife was such that he would not marry again.

The room grew dim and Ellen rose to light her lamp and close the door when she heard a strange sound. She ran out on the porch to listen and look, but she could see nothing.

"Did you hear that, Ellen?" called a woman's voice. It was Mrs. Hunt from across the street. "I've been out here listening to it for some time."

"It's a wild goose, isn't it?" Ellen asked.

"Yes, and you hardly ever hear them so close to town. If they fly over they fly high. This one is right down over us. There! It means theres a storm of some kind coming."

Ellen went into the house. She could still hear the wild cries of the fowl, though they were growing fainter and fainter. She wondered to what haven they were hieing. Then her work absorbed her, and she began to think of Lottie Cheney and Tom and Amelia Stedman and old Jake, with his yellow skin and one black eye, who had by his stronger personality warped and disfigured Amelia's nature. "At least I have only myself to answer for," she thought. Presently she fell into a pleasant sleep.

She woke in a flutter. All around her was one great engulfing tumble of thunder. "My goodness!" she said aloud. "Mr.s Hunt was right. Those birds knew. And my bedroom window is wide open."

As she approached the open window a great flash of lightning seemed to jump to meet her. But she said to her-

Spanking Doesn't Cure!

Don't think children can be cured of bed-wetting by spanking them. The trouble is constitutional, the child cannot help it. I will send **FREE** to any mother my successful home treatment, with full instructions. If your children trouble you in this way, send no money, but write me to-day. My treatment is highly recommended to adults troubled with urine difficulties by day or night. Address

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THE LAW OF HEALTH

PURE BLOOD

The Kidneys are the great filters of the blood. If for any reason they become congested and fail to act, uric acid and other impurities are allowed to remain in the system, poisoning the blood stream and causing a chain of afflictions such as Backache, Sciatica, Lumbago, Stones, Gravel, Etc.

Gin Pills FOR THE KIDNEYS

remedy Kidney and Bladder troubles by first restoring the Kidneys to a perfect state of health, and thus allowing them to function properly.

You must keep the blood stream pure—or you suffer. The modern way to prevent suffering and the ravages of Kidney or Bladder afflictions is by using Gin Pills.

Sold everywhere for 50c a box. Sample free if you write to

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500 2 lb. Choice Dairy Butter,	$2.00
500 1 lb. Plain - -	1.20

Parchment marked "Choice Dairy Butter" 250 sheets, 75c; 500 Sheets for $1.45, Postage Paid.

The Maritime Farmer
SUSSEX, N. B.

self:" Pshaw! Lightning's never been known to strike here," and boldly put down the window and lowered the green shade. As she went back she heard the rain falling heavily. "I better put a pan under that leaky spot," she thought. "Then—I'll wait a moment."

She felt a sudden inclination to enter the kitchen with its many attractions for electricity. She reached and turned the light up. At that instant the room seemed to be full of fire; the glare of the lightning seemed to have penetrated the very walls. Simultaneously came a detonation that made the house vibrate like a fiddle string. Ellen dropped into a chair and covered her head with her arms. She was deafened, sickened with the crash and with fear of the thing that caused it. Presently she heard a sound which she took at first to be the frightened thumping of her own heart.

"Ellen! Ellen! Let me in!" wailed the voice.

She sprang up and opened the door. Across the threshold almost fell Amelia Stedman. Her hair was stringy, her eyes wild, her dress wet.

"Ellen!" she gasped, as she gripped Ellen with both hands and hung to her. 'Oh, I'm so scared! The house was struck. I feel as if I'd been stung in a million places. I couldn't see for a moment. As soon as I could I got out. Oh, Ellen! Ellen!"

"There! There!" Ellen patted her. 'You're alive, and that's everything. Sit down here, Amelia. The storm's abating."

She stood beside the cowering woman, soothing her by word and touch till the storm passed into a mere growl, with an occasional flash. The rain kept up heavily.

"I'm going to bed now, Amelia," Ellen said. "You go with me. I'll lend you a nightgown. You musn't go back in that house tonight."

"I wouldn't go back," said Amelia, 'if it burned to the ground."

So she crept in beside Ellen, and after a while she slept.

Daylight came clear and bright. Ellen woke to find Amelia gone. She dressed hurriedly and ran out of doors. Amelia stood in the yard regardless of the wet grass about her feet, and beside her was Tom Cheney.

"If this don't beat all," Tom said. 'Come here, Ellen." Ellen advanced until she stood ebside him and Amelia. 'Look at that pear tree," Tom said.

The pear tree had been struck by lightning. It was stripped naked, and its bare trunk showed up white and clean. Bark was scattered about in every direction, along with fruit and leaves. Tom reached up a long arm and pulled off a pear.

"Cooked on the bough," he said. 'Just notice, Ellen."

"What a strange thing," Ellen murmured.

Amelia said nothing. She seemed dazed. "You see the pear tree deflected the bolt, caught it full and and saved the house," Tom explained. "Else—"

"Else I'd have been dead in there," Amelia shuddered. "As it is, I can never go back in there to live again. Mr. Cheney, I now put it in your hands to sell."

"Well, of course, if you feel that way", Tom said, in his large kindly way.

"I do." Amelia was vehement. "I always hated that house. I've never been a minute's real happiness. But of course I should have stayed on in it if this hadn't have happened. That lightning stroke seemed to untie something that fastened me to the house and Jake and—and all that. I feel free now, like I used to when Ellen and I were girls."

"Well, well," Tom said. He looked at Ellen, who was quite heedless of him in her tender sympathy for Amelia. "If you want me to sell the house, of course I'll do my best for you. In the meantime I suppose you'll stay here with Ellen?"

"No." Amelia spoke quickly. "I wouldn't ask it of her. I've been awful mean to her, Mr. Cheney. It would serve me right if she never forgave me." She began to cry weakly.

Ellen put an arm about Amelia's shoulders. "Of course you're going to stay with me," she said. "There, don't cry, Amelia. Come in and I'll get you some breakfast. Then you'll feel better.

"Will you give me some breakfast, too, Ellen?" Tom asked.

"I'd love too," said Ellen brightly.

After a cozy breakfast Tom said: "After I heard that big thunder-clap last night I got anxious about you, Ellen. For I knew lightning had struck here. So I came over to see. I looked in the window and saw you moving around, so I knew you were all right. But I wasn't just satisfied, so I came over again this morning soon as it was light enough to see anything. When I saw the pear tree I was pretty thankful. But it came close—it came close."

Ellen's heart was flying at the thought of the man she loved watching over her in the darkness and storm. She tried to hold up her head and look at him, but something she saw in his eyes set her trembling and flushing like a girl. A woman knows her happiness when she sees it, and Ellen knew hers. Somehow the pear tree had helped her to a friend and a lover.

Mother is Well Now

Your Noise Does Not Disturb Me Any More—It is a Pleasure to Hear You Romp and Play.

"IT is like a dream now to think of the long, weary months I spent in nervous helplessness. Some days I would be cheered by feeling better, but only to slip back again, and to be more than ever discouraged.

"I had always been very active. Had a wide acquaintance and did much entertaining. In addition to helping in whatever was going on at the church, there was Red Cross work to be done, and all the time I had my little family to look after and could not get help.

"I suppose I tried to do too much, for I got so I could not sleep at nights and always felt tired out in the mornings. Then I would have headaches and did not seem to care for my meals.

"Instead of the usual ambition and energy I found myself putting off the duties of the day. I got behind with the housework, and this worried me.

"I did not think that I was sick, but only tired. However, the time came when I did not get up in the morning. I simply could not. The doctor came and said, "Nervous Prostration." It seems I had kept on the go until the nervous system was wrung dry of all nerve force.

"Then came the long, weary weeks, and weeks dragged into months, without finding much improvement. I was completely discouraged and almost devoid of hope.

"But one day a friend told me of her experience with Dr. Chase's Nerve Food, and she was so sure that this treatment would do me good that I decided to give it a chance.

"I need scarcely say that there were some dark, discouraging days after beginning the use of the Nerve Food, but as my appetite and digestion improved I felt that I was gradually getting back the old-time vigor. Sleep became more natural and refreshing. The dark days passed and I began to take a more cheerful view of the future. Then I began to plan what I would do when I got around again. The house must be decorated and the children brought home, for I had to send them to my sister's on account of the way their noise disturbed me.

"Now I feel that I am entirely well again, and without hesitation give the credit to Dr. Chase's Nerve Food. I cannot tell you the pleasure it gives me to be restored to my husband and children after the long period of helplessness."

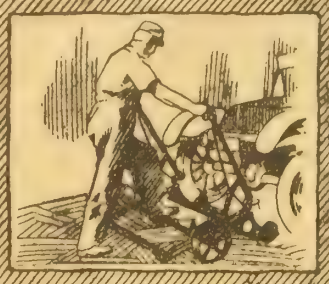
Dr. Chase's Nerve Food, 50 cents a box, 6 for $2.75, all dealers, or Edmanson, Bates & Co., Ltd., Toronto.

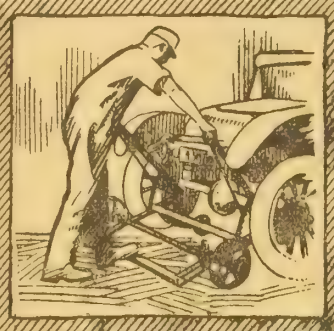
PATCHING WALL PAPER

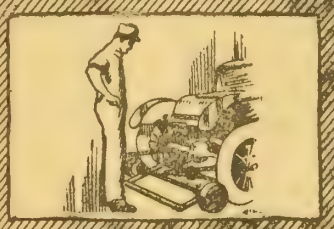
Take a remnant of new paper, pin it up on a flat surface well exposed to the sunlight, and let it fade until it matches the paper on the wall. Then cut it the proper size to cover the torn or spoiled wall-paper, and paste it over, matching the figure.

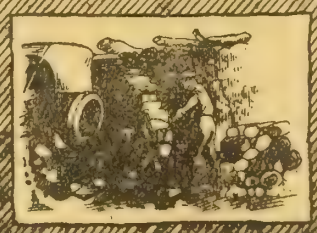
THE MECHANICAL FARM HAND

Something New — And Better — Under the Sun — for the Farmer









Make a hired man of your automobile. Use the wonderful power of its engine—use it to make your farm a bigger, faster profit-maker.

Hitch LAY Porta Power to your car and it will do double work. LAY Porta Power is a *real automobile accessory for the farm.* Weighs only 100 lbs. Stand it on the running board of your car. Drive to the job. Slip LAY Porta Power under the rear wheels of the car. Hitch a belt to the machine to be operated. Start your automobile engine. There you have any speed or power your car can produce.

LAY Porta Power

LAY Porta Power gives you the cheapest power on earth. Runs all kinds of machinery around the farm. Pumps water, runs washing machine, cream separator, churn, corn sheller, ensilage cutter, grain elevator, concrete mixer, wood saw, silo filler—any machine that any gasoline engine up to 10 h.p. will run. And all this power is *cheap* power. LAY Porta Power costs only a fraction of the price of a gasoline engine. It's portable—you take the engine to the job, not the job to the engine And you can't have a more efficient motor than is in your car.

We have fully illustrated and intensely interesting literature. Send to your nearest distributing point for it. Or send your order with $5.00 and a LAY Porta Power will be sent to you—balance of price on delivery.

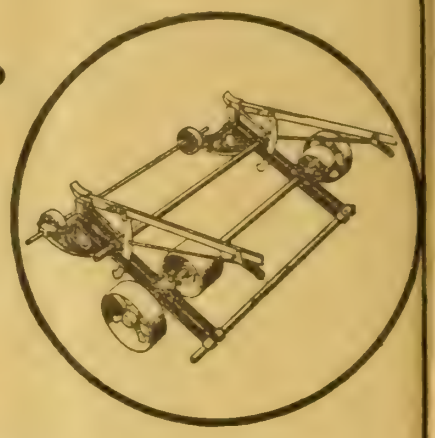
Price $48.00 f.o.b. Toronto

GRACE MOTORS LIMITED, Toronto

Here It Is

LIVE DEALERS

Farmers need LAY Porta Power. There is good profit in selling it to them. If you're a hustler—get in touch with your nearest distributing point. Your territory may still be open.



GRACE MOTORS LIMITED

120 King Street East - - Toronto

MARKETS.

COUNTRY PRODUCE

Montreal, Nov. 1st.—There seems to be a growing feeling amongst the trade that the surplus of storage eggs for export above home requirements will be very much less than was first estimated. The movement into consumption is very free, and some dealers are buying more from original country holders to ensure sufficient for their trade requirements. A sale was reported during the week at an Ontario point of a block of over 5,000 cases, at 50c. f.o.b., straight. Another car was reported bought by a Toronto dealer from a storage in Montreal at 50c f.o.b. This would seem to bear out the opinion that the surplus is less than was at first estimated. The opinion in the Prairie Provinces also bears out this view, and stocks htere, according to report, will all be needed for local consumption.

The ertreme scarcity of real new-laid eggs (specials), has caused a further advance in the price of this class of stock. Dealers stated they had found it necessary to pay from 60c to 62c, delivered. Country shipments in Ontario report sales of curren receipts at 56c to 58c, f.o.b., cases returnable, and circles are in many instances receiving 60c. Reports to hand from many coutry points state there are not sufficient eggs coming to satisfy local consumption. This is particularly the case in Western Canada. On Toronto farmers' market retail prices ranged from 90c to 95c a dozen.

From now on the weather will play an important part in production, variations in temperature affect the growing stock, and a quick change to severe cold would retard the laying of the pullets.

The tone of the local market for eggs remains very firm under a good demand for supplies for immediate consumption, anad the market is fairly active. The receipts tóday were 430 cases, as compared with 423 for the same day last week, and 804 for the corresponding date a year ago.

We quote wholesale jobbing prices as follows:

Strictly new laid eggs	65c to 70c
Fresh selected stock	50c to 54c
Storage selected stock	00c to 53c
Storage No. 1 stock	00c to 49c

The receipts of poultry showed a marked increase, the latter part of the week, but are not excessive, considering the season of the year. The market is firm in all parts of the country and well finished birds are absorbed quickly at full market prices. The receipts show a large proportion of unfinshed stock which is difficult to move except at a discount. Some light chickens are being taken by dealers for crate ceeding. The reserve stock in the freezers is still low and dealers would taake all surplus of good poultry available for this purpose if they could handle it.

We quote prices for dressed poultry as follows:

Turkeys, per lb	36c to 38c
Chickens	28c to 32c
Ducks	28c to 32c
Fowl	27c to 30c

THE BALED HAY MARKET

Montreal, Nov. 1.—There was no further developments in the market for baled hay, prices being firmly maintained, with a good demand for all offerings, which are not sufficient to satisfy the wants of the trade, and the condition of the market is becoming somewhat serious. Sales of car lots of No. 1 timothy hay were made at $26 to $27; No. 1 light clover mixed hay at $26 to $27, No. 2 clover mixed hay at $24 to $25, and No. 3 timothy hay at $23 to $24 per ton, ex track.

The farm is a great factory where one part of the machinery thrown out of kilter can cause worry, loss, perhaps disaster.

The Bridge to the British Market

The Victory Loan is a bridge over which the farmers of Canada drive their hogs, their cattle, their grain and all their surplus crops to the profitable British market.

For, the money raised by the Victory Loan enables Canada to give credit to Great Britain. And only by means of that credit can Great Britain buy the products of Canada's farms.

Therefore, when you come forward at your country's call and loyally lend your money that Canada may continue her vigorous prosecution of the war, you are also benefitting yourself and the whole farming community.

It is the duty of every earnest Canadian not only to invest heavily in Victory Bonds 1918, but to work among his neighbors to make the loan a success.

Before the subscription lists close, every man should realize the sterling character of the investment; the good interest return of 5½%; the undoubted security offered in the Bonds of this wealthy nation; and the vital importance to all classes of people, particularly to the farmers, of the Victory Loan 1918.

Buy Victory Bonds

Issued by Canada's Victory Loan Commitree in co-operation with the Minister of Finance of the Dominion of Canada

COMMON DISEASES OF THE DIGESTIVE ORGANS OF HORSES

(Continued from page 69)

and teaspoons one fluid dram of sixty minims or drops.

In prescribing we shall use the following abbreviations: lb. for pound. oz. for ounce, dr. for dram, gr. for grain, m. for minims or drops, qt. for quarts, and pt. for pint.—J. Hugo Reed, V.S.

In the Horse Department of this and in future issues we will continue Dr. Reed's advice re symptoms and treatment for the most common diseases of the horse. Preserve these copies of the Maritime Farmer for future reference.

IMPORTANCE OF KNOWING THE MILK YIELD OF THE BULL'S DAM

Not much headway can be made in breeding up a dairy herd if the dam of the bull is not a good milker. This is now a well known fact and very high prices have lately been paid for bulls out of heavy producing cows.

At the Cap Rouge Experimental Station a very fine French Canadian bull, which will be called Z, was bought a few years ago, one that would easily have won championship honours at any exhibition in Canada against all comers. Moreover, this bull, according to ordinary standards, was of a conformation which induced one to believe that he was of a heavy milking strain and would produce good heifers. But, unfortunately, such was not the case and he did not leave a single heifer which was worth keeping as a milk producer.

Cow A, to the service of another bull, produced a daughter which later qualified for Record of Performance with 7794 pounds of milk whilst to the service of Z, she gave a heifer which never gave fifteen pounds of milk per day during her first lactation period.

Cow B qualified for Record Performance as a three year old with 5332 pounds of milk, gave 4624 pounds during her first period of lactation and averaged 6117 during her first five years in milk. Her daughter, by Z, only gave 3040 pounds during her first period of lactation.

Cow C was out of a dam which qualified for Record of Performance, with 9747 pounds of milk, but herself failed to qualify though tried two different years. She only gave 3297 pounds during her first period of lactation and her daughter, by Z, only gave 2800 pounds during her first period of lactation.

Cow D qualified for Record of Performance with 8358 pounds of milk and her daughter, by Z, only gave 2776 pounds during her first lactation period.

Cow E qualified for Record of Performance as a two year old with 4547 pounds of milk and as a three year old with 5530 pounds whilst her daughter, by Z, only averaged 2731 pounds during the first two periods of lactation.

Cow F is the dam of a cow which gave 10229 pounds of milk in 365 days an dher daughter, by Z, only gave 2401 pounds during her first lactation period.

Cow G averaged 5271 pounds during four lactation periods, going up to 6224 in one of them and her daughter, by Z, only gave 2947 pounds during her first 365 days in milk.

The cost of barn room, care, feed, has gone up faster than the price of milk, so that every dairy farmer must see that he does not use a bull like Z.

LARGE AREAS OF SWAMP LAND ARE LYING IDLE

In various parts of the country there are swamp lands, varying in size from a few acres to quite large areas. In almost every case where these lands have not been reclaimed, they are covered with wild grass and trees, and in most cases are yielding nothing worth while, either to the owner or the country. These lands could be made very useful in growing certain kinds of crops and should be used for that purpose instead of practically lying a waste as at present.

Marsh lands are usually divided into two or three classes, according to the amount of vegetable and mineral matter which they contain. The terms used t odesignate swamp lands are, peat, which contains from 50 to 95 per cent. of organic matter; muck, which contains from 15 to 50 per cent., and "marsh border soils," which contain from 5 to 15 per cent. The balance of these soils is made up principally of silty or earthly matter varying from 5 to 95 per cent.

The majority of this land is of little use for agricultural purposes until it has undergone certain processes pertaining toward that end.

The first thing to be done toward reclaiming swamp land is drainage. The surplus water must be got rid of before any crop production worth while can take place. This is best accomplished by large open ditches to remove the surface water and sub-surface drainage to remove the soil water to a depth sufficient for cultivation and plant growth. Even for the latter purpose it is not advisable to put tile into fresh swamp land for two or three years, for the reason that land when drained will continue to settle for that length of time, and it is safer to use the open ditches until this is completed, after which tile may be placed therein and covered up.

After drainage has been done the land must be solidified. The action of the tile has already done a good deal in that direction, but cultivation and pressure with a heavy land roller will need to be applied in order to finish the job.

After the land has been brought into a suitable condition physically the efforts should then be directed toward properly balancing the elements required for plant food. Being excessively rich in nitrogen these soils are almost sure to eb deficient in mineral substances such as phosphates and potash. Barnyard manure will supply the deficiency to a certain extent but unless well rotted it will have a tendency to make the soil more loose, a condition just the opposite to that desired; besides under normal conditions these fertilizers can be purchased in a commercial way cheaper than furnishing them in barnyard manure, thus leaving the latter for use on other parts of the farm where it will do more good.

Acidity is also quite a common characteristic of swampy soils. Where the surrounding land, however, happens to be of a limestone formation this difficulty is likely to be overcome by lime carbonate seeping into the marsh in the spring time from the surrounding higher land. In order to overcome this difficulty the best treatment is an application of ground limestone, burnt line, air slaked lime, or lime carbonate should be used.

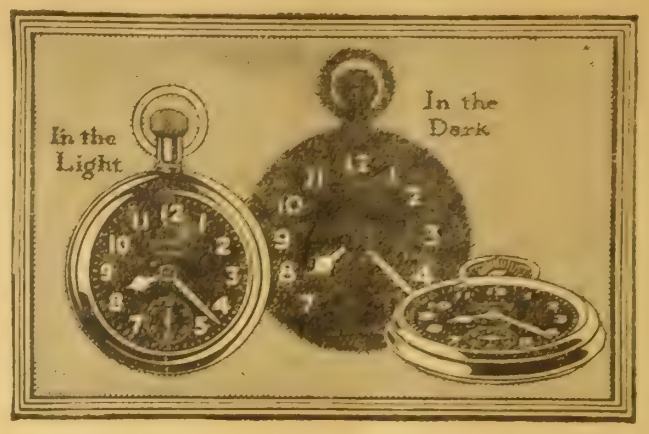
It is important to know definitely whether a soil is acid or not in order to properly treat it for crop production. A neutral soil is usually low in potassium and an acid soil is phosphorus. The drainage water from these soils is coffee colored when the marsh is acid and clear or nearly so when it is neutral. **This gives a very** good general idea of conditions but more definite informations is frequently needed an dtherefore the following simple method of testing a soil is given.

Get five cents worth of blue litmus paper from a druggist and go into the field soon after a rain, while the surface it still moist. With a jacknife cut a clean slit into the soil and insert a piece of the paper and press the soil firmly around it. After five minutes examine the paper carefully and if any red spots appear on the blue surface, it can safely be said that the soil is acid. It is best to make several tests in different parts of the field.

The crops best adapted to marsh lands include corn, potatoes, cabbage, buckwheat, timothy, and alsike clover for hay. After the land has been worked down for two or three years and has been made firm with a heavy roller and other suitable implements, other crops such as wheat and barley may be added to the list and still later oats and rye.

Marsh lands should be seeded early in the spring. On account of the tendency of this land to dry out quickly, the seed must eb sown before dry weather occurs or there will be difficulty in getting it to sprout.

Where a good catch is secured in the spring there will be little danger of



Worth More Than It Costs

THIS watch can be bought at any dealer's for $3.00. It is different from the ordinary watch because it tells time in the dark.

Real Radium in the substance on the hands and figures makes them glow brightly, no matter how dark it is, and this glow lasts for the lifetime of the watch.

You do not need to strike a match to see the hour.

On the farm, in mines, factories, camps, for outdoor work or exercise, you will find a Radiolite much more useful than the ordinary watch. It is indeed worth more than it costs.

More than 50 million Ingersoll watches have been sold during the last 25 years, and Ingersolls can be bought in any town or village just the same as in the big cities—same high quality, same low price. Ask for Ingersoll Radiolites—$3.00—at any dealer's.

Look for the words Ingersoll Radiolite on the dial.

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I KNOW A WOMAN'S SUFFERINGS

I am a woman.

What I have suffered is a far better guide than any MAN'S experience gained second-hand.

I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight aud dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

Read My FREE Offer:

To Mothers of Daughters. I will explain a simple home treatment which speedily and effectually dispels green-sickness (chlorosis), irregularities, headaches and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten day trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatmept suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

MRS. M. SUMMERS, Box 309 • • Windsor, Ontario

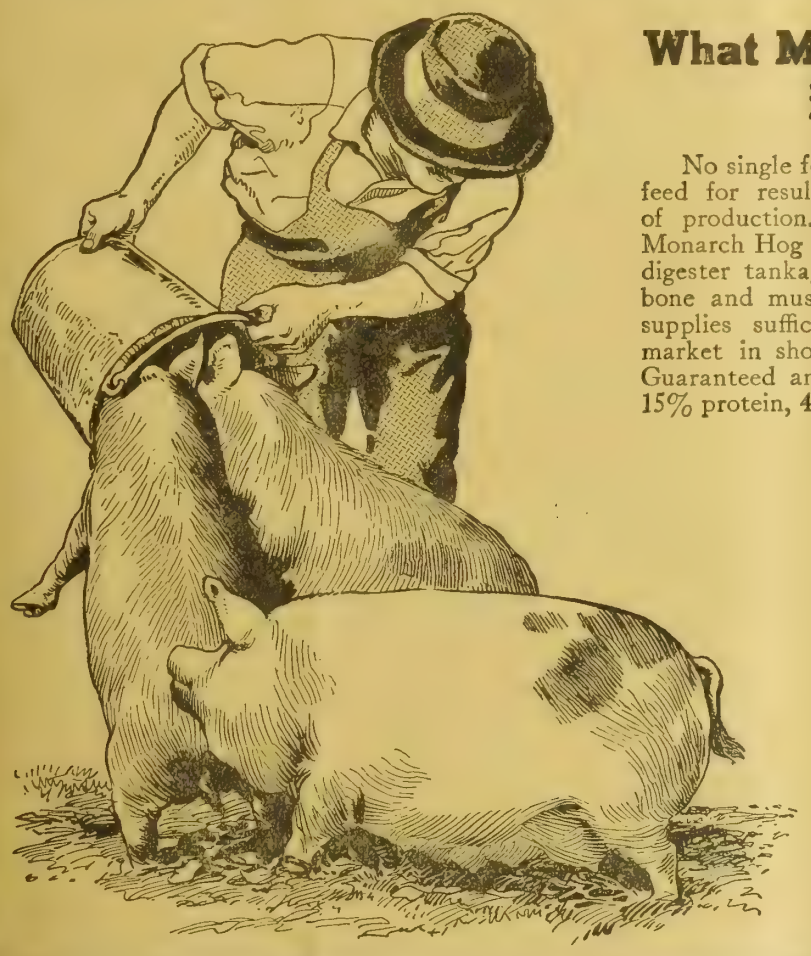
More Pork and More Profit

Heavier, Cheaper Hogs in Less Time

HOW to round your hogs into tip-top shape for an eager market at lowest cost—that is the problem Monarch Hog Feed is solving for farmers every day. Monarch Hog Feed is a properly balanced feed, supplying every requirement for sturdy hogs with stamina, energy, vigor and size; it has exactly the right proportion of protein and fat to finish your hogs in the shortest time.

Monarch Hog Feed

makes more pork and better pork; it shortens the hogs' stay on the farm and reduces cost of production; it gets hogs to market in best condition; in fact it solves the problem of economical feeding in these strenuous times of high-priced feeds—and there's money in good hogs nowadays. Improper feeding is one of the causes of soft bacon, declares Prof. G. E. Day in Ontario Agricultural College Bulletin No. 225. Monarch Hog Feed used along with the proper amount of roughage means good hard bacon that gets the best prices.



What Monarch Hog Feed is made of

No single feed can equal the properly mixed feed for results as to gain per day and cost of production. The principal ingredients of Monarch Hog Feed are shorts, corn products and digester tankage. This combination is rich in bone and muscle forming ingredients, and also supplies sufficient fat to bring your hogs to market in shortest time and in best condition. Guaranteed analysis of Monarch Hog Feed is 15% protein, 4% fat.

Monarch Dairy Feed

has guaranteed analysis of 20% protein and 4% fat. It is a properly mixed combination of Oil Cake Meal and Cotton-seed Meal with the bulky feeds, bran and corn meal. Though very rich, ensuring splendid results, it can be fed alone.

Sampson Feed

This general purposes feed is somewhat similar to Monarch Hog Feed, except that oil cake meal is used instead of digester tankage: it gives results for both cattle and hogs. Guaranteed analysis 10% protein and 4% fat.

Pigs "go for" Monarch just as they are doing in the picture. It is a palatable, easily digested feed. For profitable results it is the most dependable feed—and, remember, you can depend upon getting it, while mill feeds are often unobtainable.

Give it a trial. Order a ton from your dealer and note results. If your dealer does not handle Monarch feeds, send us his name and we will see that you are supplied.

The Campbell Flour Mills Company, Limited

West Toronto • Ontario

10

e crop, as the roots will soon get ng enough to reach the water level elow the drains and the soil will be armed by the sun after the surface ater has been removed so that there ill be little danger of frost.

PROTECTING PUBLIC ROADS

If every one were as careful of the roads as they should be there would not be so many roads needing repair. Excessive loads placed on wagons with narrow tires are bad for any road. Tractors using cleats or lugs on the wheels will do great damage to the roa dsurface and should never be permitted on the public highways. The cleats should first be removed from the tractor wheels. Disc harrows or any other cultivating tool may cut up the roads. More care in the driving of automobiles or other vehicles to keep out of the ruts would help to keep the surface smooth. Every person in the community should be interested enough in the public roads to help keep them in good condition.

Money losses through depredations of rats are only half appreciated. After a full inquiry made a number of years ago, it was found that the average annual loss caused by each rat in England equaled $1.80, in Denmark $1.20 and in France $1.

Success does not so much depend on external help as on self-reliance.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

FOR SALE—A few Sheep, both sex of any popular breeds.—CEPHAS NUNN, Winsloe, P. E. I.

LADIES WANTED to do plain and light sewing at home, whole or spare time, good pay, work sent any distance, charges paid. Send stamp for particulars. NATIONAL MANUFACTURING COMPANY, Montreal.

A RANCHER'S LIFE in Canada and Guide to Rural Industries, fruit growing, poultry keeping, ducks, geese, turkeys, pigeons, hares, goats, bees, flowers, etc. 25c post paid. By C. H. PROVAN Langley Fort, British Columbia.

FOR SALE—Barred Plymouth Rock cockerels, $1.50 each. Silver Spangled Hamburgs, males $2.00, females $1.50. Cash with order. E. L. COLPITTS, Petitcodiac, N. B.

FOR SALE—Ayrshire bull and heifer, registered. Heifer freshens Nov. 6th. Will trade for Shorthorns. White Leghorn Cockerels and yearling hens. EDGAR ASHLY, Lockville.

FOR SALE——Two purebred Durham Bulls, one 15 months, one 17; dark red. The dam of one made 14½ lbs. in 7 days. One Ayrshire pure bred Cow, three years. Just freshened. C. R. DeLONG, New Germany, Lun. Co., N. S.

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PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females, all ages.

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Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

Black Siberian Hares, the most profitable fur bearing animal living, price per pair..$25.00
Silver Siberians, price per pair..... 5.00
Belgians, price per pair 3.00
The above prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each
D. W. Young's stock, as good as money can buy.
White Leghorn 260 egg strain for hatching..... $2.00 per 15
White Leghorn, No. 1 exhibition stock for hatching.....$4.00 per 15

We Guarantee Safe Delivery. Terms Cash with Order

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

W. H. HENRY
Shubenacadie - - - N. S.

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Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T. D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B.

Ayrshire Cattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.
C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE CATTLE

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

EGGS FOR HATCHING !

Breed Standard bred poultry and more of it. Eggs or stock from every popular variety can be had through our Association.

Eggs from all heavy breeds such as Bramahs, Plymouth Rocks, Wyandottes, etc., $2.00 for 15 eggs.

Eggs from the lighter breeds such as Leghorns, Minorcas and Black Spanish, etc., $1.50 for 15 eggs.

Write us your Poultry wants.

Cumberland Co. Poultry & Pet Stock Association
E. F. McKIM, Secretary
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Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

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New Mines - - - N. S.

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World's Record Price for Cattle—
Carnation King Sylvia....$106,000.00
World's Record for Butter, One Year—
Duchess Skylark Ormsby 1506.35 lbs.
World's Record for Milk, One Year—
Lutscke Vale Cornucopia 31246.9 lbs.
World's Record for Butter, Seven Days
Segis Fayne Johanna.....50.68 lbs.
World's Record for Milk, Seven Days—
May Echo Sylvia.....1005.8 lbs.
Canadian Record for Butter, One Year
Lady Pietje Canary's Jewel
1173.66 lbs.
Canadian Record for Milk, One Year—
Zarilda Clothilde 3rd DeKol
30467.0 lbs.

IF YOU CAN'T BUY A HERD, BUY A HEIFER.

Information from the Holstein-Friesian Association.

President, Dr. S. F. Tolmie, Victoria, B. C.
Secretary, M. P., W. A. Clemons, St. George, Ont.

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French Canadian Colts are for sale at very reasonable prices by the Experimental Station, Cape Rouge, Que., from the largest stud in existence today. If you require a wiry, sturdy, tough breed of horses, write

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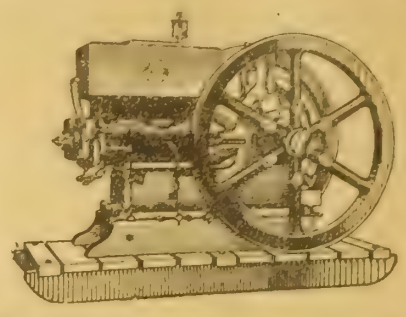

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Two bulls fit for service. Ask about them. Young cows. Do you want any ? A pair of yearling heifers. A chance for someone to start easy. Write if you are interested,

THOMAS J. HAWKINS
"Lone Pine Farm" - - Stewiacke, Col. Co., N. S.

FOR SALE !

In Shorthorns we have to offer a number of roans, reds and whites in both males and females, from young calves up. It would pay those wishing to purchase to come and see our stock before doing otherwise.

Our spring litters of Berkshires are all sold. Are expecting several summer and fall litters. Parties wishing to purchase please get in touch with us.

L. M. ANDERSON, Sackville, N. B.

Milking Shorthorns for Sale

We are offering some choice young Shorthorn bulls of the milking strain, ages 3 months to 15 months.

Also a limited supply of heifers, one and two years of age.

For particulars apply to

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett
Upper Sackville, - - - N. B.

POULTRY FOR SALE

POULTRY FOR SALE—In Utility Barred Rocks, White Wyandottes, R. I. Reds and White Leghorns, I am offering a fine lot of yearling hens, all good layers, and some grand breeding cockerels. Special prices for immediate delivery. A few exhibition Barred Rocks, five pairs of W. C. Black Polish, and one trio of Brown Leghorns left. Satisfaction guaranteed or money refunded. H. M. McMONAGLE, Box 652, Fredericton, N. B.

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,
AMHERST, - - - N. S.

MARKET OLD HENS

The yearling hens carried over from last season have about finished laying now and will be boarders until late winter or early spring. The present prices of feed absolutely prohibit the keeping of these non-producers, and they should be fattened and shipped to market as soon as possible. Even with low-priced grain it is a question if it pays to keep the average hen after she is two years old. Production of the first and second years is usually sufficient to pay a good profit, and though a small profit might be possible during the third laying season it is not great enough to justify the maintenance of three-year-old layers. We must increase production as much as possible this year, and the execution of such a programme calls for pullets anad yearlings in the layers' quarters this fall. Get rid of the old birds and make room for the prolific young sters.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

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Common Diseases of Digestive Organs of Cattle

By J. Hugo Reed, V. S.

(By J. Hugo Reed, V. S.)

In the last issue of the Maritime Farmer we published an article by J. Hugo Reed, V. S., on "The Common Diseases of the Digestive Organs of the Horse." In this issue Dr. Reed deals with diseases of cattle. Preserve these copies of the Maritime Farmer for future reference.

The Ox

When we use the word "ox" we refer to cattle in general, regardless of sex. The stomach of the ox, being such a complex organ, is more liable to digestive derangement than his intestines. In order that the reader may more readily understond and appreciate the different diseases, their causes, symptoms and treatment, it may be wise to describe the anatomy of the oesophagus and stomach.

The œsophagus or gullet, passing from the posterior portion of the pharynx or cavity posterior to the root of the tongue, is a tube composed of mucous membrane surrounded by muscular fibres. These fibres surround the mucous membrane, and, like other muscular fibre are contractile. When a bolus of food is passing down the tube the fibres expand, and immediately contract after the bolus has passed. The œsophagus, after passing through the thorax or lung cavity, pierces the diaphragm (the division between the thoracic and abdominal cavities) then expands and enters the stomach as a somewhat funnel-shaped dilation; the mucous meembrane is plentiful, somewhat folded, and continuous with the mucous membrane of the stomach.

The ox is usually spoken of as having four stomachs, but this is not strictly correct, as there is but one organ; but it is more or less completely divided into four compartments, called for convenience the first, second, third and fourth stomachs.. Technically these are called, the rumen, reticulum, omasum and abomasum. The rumen, paunch or first stomach is a very large compartment, occupying about four-fifths of the abominal cavity, situated principally on the left side, extending well back to the pelvis and having an average capacity of probably about thirty-six gallons. The reticulum or second stomach is situated to the front and right of the rumen. It is a comparatively small compartment and not well divided from the rumen. In fact, the division is so imperfect that it would be difficult to distinguish one from the other if it were not for the arrangement of the mucous membrane; that of the rumen being smooth like that of the œsophagus, while that of the reticulum ssrongly resembles an empty honeycomb with the top of the cells cut off. On this account the compartment is frequently referred to as "the honeycomb." The omasum or third stomach is to the front and right of the reticulum. It is a small organ with a capacity of about 1 and ½ gallons. The mucous membrane of this compartment is formed into leaves of different depths. In fact, when it is empty it appears as a compartment of leaves of mucous membrane, on which account it is often referred to as "the many-plies." These leaves are thickly studded on each side with elevated epithelial cells, which grind food as it passes through. To the right and posterior to this compartment is the abomasum or fourth stomach, which is the true digestive stomach and contains the gastric glands. That is comparatively small, if scapacity probably being between three and four gallons. At the posterior portion is a constricted orifice called the pylorus or pyloric orifice, with which the small intestine is continuous.

Digestion in the ox (with the exception of that which takes place in the small intestine) is supposed to be carried on as follows: He eats large quantities of bulky food, eats it rapidly, hence does not take time to masticate it well. It enters the rumen, the muscular coat of which has both transverse and longitudinal fibres, the contraction of which lessens the calibre of the organ in all directions, and, of course, their relaxation correspondingly enlarges it. During the time the animal is eating this contraction and relaxation is continuous, producing a somewhat churning motion which thoroughly mixes the contents with each other and with the liquids that are present. When the animal has satisfiied his desire for food the process of rumination or chewing the cud commences. This is supposed to be performed somewhat as follows: The muscular fibres mentioned contract firmly, this compresses the contents of the organ and forces it forward, the dilated end of the œsophagus closes and, in closing grasps a portion of the ingesta and by a reurgitative or antiperistaltic action it is returned to the mouth for re-mastication. This process being performed the bolus is swallowed. If there still be any imperfectly masticated portions they are supposed to again enter the rumen, while the finely masticated and the fluid portions pass directly to omasum by what is known as "the œsophageal canal," which consists of two double leaf-like folds of mucous membrane which extend from the œsophagus (hanging downward) to the omasum. When a bolus of re-masticated food is being swallowed the lower edges of the folds approach each other and when they meet a canal is formed which carries the ingesta to the omasum. Then another bolus is regurgitated, re-masticated and swallowed, and this continues until the process of rumination is completed. It will be seen that the cud is simply a portion of the contents of the rumen returned to the mouth for re-mastication, hence the too-common idea that cattle suffer from a disease known as "loss of the cud" is false. In most cases of digestive troubles the process of rumination ceases, but when the disease is cured it will again be performed.

It must not be thought that all the contents of the rumen undergo this process at any time. Only a limited amount is operated upon at once; hence, in health the rumen always contains a large amount of ingesta.

The re-masticated food having entered the omasum it fills the spaces between the leaves, which press upon it, and, having a slight motion, one upon the other, still further grind it and press the fluids in the abomasum. These gradually pass into the abomasum, where true digestion really commences. It will be seen by the above that the functions of the first three compartments are simply to prepare the food for digestion which takes place in the fourth stomach.

When from any cause any of the functions mentioned are checked, suspended, interrupted or materially altered, digestive derangement will be noticed, the causes, symptoms and treatment of which we will discuss.

Tympanitis, Bloating, Hoven or Blown

Causes.—This condition known by many names consists of distension of the rumen with gas. The most fruitful cause is a sudden change from dry food to an unlimited supply of green food of any kind, principally to the different varities of clover, and more particularly when the clover is in flower. It frequently occurs from the voracity with which cattle that have been kept on dry food all winter consyme green fodder. Hence, it is more prevalent in the spring than at any other seasons. It results from feeding too freely on green food of any kind, especially on that upon which dew or rain is present, and more particularly when frosted; hence is not uncommon in the fall when the cattle are allowed to consume clover, rape, turnip tops, etc., when frosted. Any food that readily ferments, if taken in sufficient quantities to temporarily check digestion, will quickly form gases and cause bloating. It is often a complication in cases of choning, the mechanical impediment being the cause by preventing the escape of gas through the gullet. Sudden changes of diet of any kind may cause the trouble, or insufficient sercetion of saliva may have the same effect. While some of the above-mentioned causes usually precede an attack, it is not uncommon to notice a well-marked case for which no well-marked cause can be traced. Such cases are doubtless due to some unsuspected and not well understood temporary derangement of the digestive glands and muscles of the rumen. Any condition that causes torpidity of the rumen may cause bloating, even though no change of food of a dangerous nature has taken place. Torpidity of the rumen occurs in debiliating diseases, in fact in most diseases of the ox, also from the introduction of excessively cold material as frosted fodder, into the organ.

Symptoms.—The patient commences to exhibit signs of uneasiness, lying down and rising frequently, and kicking at the belly. Rumination is suspended and food refused. There is general depression, protusion of the muzzle, projection and congestion of the eyes, increased flow of saliva, and generally moaning during expiration. The back is arched and here and there is more or less marked swelling of the abdomen especially marked on the left side, especially between the point of the left hip and the last rib. If this be pressed with the finger it will yield, but at once regain its former condition pressure is relieved. If tapped with the finger a resonic, tympanic or drum-like sound will be heard, hence the name "tympanitis." Distension of the rumen causes forward pressure upon the diaphragm (the division between the abdominal and lung cavities), hence lessens the degree of bloating. In many cases forcible ejection of fæces per rectum is noticed. In most cases there are eructions of gases of a special odor. The bowels soon cease to act and breathing becomes more difficult as the tympany increases. Teh brain frequently becomes involved to some extent, the patient becoming blind, staggering and falling. Death may occur quickly from rupture of the rumen, rupture of the diaphragm, suffocation, or absorption of gases.

Treatment. — Preventive treatment consists in avoiding sudden changes of food, especially from a dry to a moist or green ration. All changes should be made gradually, When cattle that have been accustomed to dry fodder are to be turned out on grass, especially any variety of clover, it is good practice t ogive a moderate meal in the stable then turn on grass for a few minutes, say twenty to thirty minutes. Next day leave on grass for a longer period, say forty minutes, and continue to gradually increase the period in order that the animals will become less inclined to engorgement and the digestive organs gardually acquire the power to perform their new functions. In a few days it will be reasonably safe to allow the cattle to remain on the pasture. Much greater danger exists at any time in allowing cattle that are not accustomed to green fodder to partake of it when frosted, or damp with either dew or rain. Frosted grass ,rape, turnip tops, etc., are very dangerous under any conditions.

Curative treatment must be directed to remove or neutralize the gases that

(Continued on page 124)

1918 New Brunswick Field Crops Competition

YORK COUNTY	Wheat		Oats		Potatoes		Turnips	
Name and Address	score	awrd	score	awrd	score	awrd	score	awrd
J. W. Inch, Burtt's Corner	94.80	3.38	96.75	2.46	86.85	3.39		
John Inch & Son, Burtt's Corner	92.75	3.30	94.10	2.39	86.80	3.39	82.75	3.57
Wm. Hood, Stanley	92.25	3.29	94.00	2.39				
John Moore, Scotch Lake	91.20	3.25	81.70	2.08	84.00	3.28	85.50	3.69
Herbert Brewer, Millville	90.50	3.22	81.00	2.06				
Hiram Manuel, Hawkshaw	90.50	3.22	80.50	2.05				
Wm. Palmer, Scotch Lake	90.30	3.22	90.05	2.29	87.00	3.40	85.75	3.70
Leslie Sharp, Mouth Keswick	90.25	3.21	86.50	2.19	88.25	3.45	90.20	5.89
Albert Carson, Hawkshaw	90.00	3.20					83.25	3.60
Spafford Manzer, Millville	89.85	3.20	87.50	2.22	85.75	3.35	86.00	3.71
H. O. Heustis, Lr. Southampton	89.85	3.20						
H. A. Slipp, Mouth Keswick	89.75	3.20			84.25	3.29		
Geo. Munroe, Pinder	89.75	3.20					88.00	3.80
Geo. Davidson, Pinder	89.60	3.19	89.25	2.27				
Arthur Illingworth, Kingsclear	89.60	3.19	92.00	2.34			91.50	6.95
J. T. Christie, Burrt's Corner	89.00	3.17	89.00	2.26				
Ed. Jarvis, Stanley	88.50	3.15	89.75	2.28	82.25	3.21	86.50	3.73
Wm. Moore, Scotch Lake	88.50	3.15	86.50	2.19	84.00	3.28		
Wm. Hagerman, Mouth Keswick	87.30	3.11	88.80	2.26	83.70	3.37	80.45	3.47
Moses Parent, Lr. Southampton	84.30	3.00	91.30	2.32	80.80	3.16		
Harvey Duplissea, Mouth Keswick	84.00	2.99	89.50	2.28	83.50	3.26	81.70	3.53
L. D. Gunter, Lr. Southampton	83.25	2.96	87.45	2.22	85.50	3.34		
Harry Morrison, Lr. Southampton			95.25	2.42	85.00	3.32	80.00	3.46
H. A. Slipp, Mouth Keswick			94.00	2.39				
H. H. Brown, Lr. Southampton			93.80	2.39	92.00	6.09		
L. A. Cliff, Mouth Keswick			91.00	2.31				
Woodford Clark, Mouth Keswick			90.10	2.29	92.00	6.09		
Simon Goodine, Lr. Southampton			90.05	2.29	84.05	3.29	84.25	3.64
Hanford Hagerman, Lr. Southampton			88.50	2.25			84.50	3.65
H. McLean, Lr. Southampton			87.85	2.23				
Jas. Wilson, Mouth Keswick			87.80	2.23			88.00	3.80
Gilford Dumphy, Mouth Keswick			87.75	2.23	85.50	3.34	83.00	3.58
Chesley Hallett, Lr. Southampton			86.50	2.19				
Wm. McKean, Burtt's Corner			86.50	2.19	83.75	3.27	88.70	3.83
T. T. Stairs, Pinder			80.40	2.04	80.00	3.13		
Byron McFarlane, Lr. Southampton					87.00	3.40		
Arthur Barton, Scotch Lake							88.80	3.83
Geo. Rosborough, Lr. Southampton							82.75	3.57

An additional $3.00 goes to J. W. Inch, Burtt's Corner; an additional $2.00 goes to John Inch & Son and Harry Morrison, Lr. Southampton, when they exhibit their grain at the Prov. Seed Fair.

KINGS COUNTY	Wheat		Oats		Potatoes		Turnips	
Name and Address	score	awrd	score	awrd	score	awrd	score	awrd
J. Arthur Marr, Newtown	91.75	3.64	80.75	2.32				
Jas. McElroy, Sussex	90.25	3.59	88.75	2.55			90.25	2.98
W. F. Mosher, Sussex	89.75	3.57	90.25	2.60				
W. E. Wallace, Penobsquis	89.00	3.54	95.00	2.73			83.75	2.76
McIntyre Bros., Sussex	88.75	3.52	93.50	2.67			91.34	5.02
Wm. Buchanan, Sussex	88.75	3.52	89.25	2.57				
W. B. Tamlyn, Sussex, R. R. No. 2	88.50	3.52	86.00	2.48				
Jas. Manchester, Apohaqui	87.00	3.46	89.00	2.56				
T. J. Davis, Sussex, R. R. No. 2	86.75	3.45	88.25	2.54				
H. B. Parlee, Sussex	86.00	3.42	92.50	2.66			85.50	2.83
W. H. Venning, Sussex, R. R. No. 2	85.75	3.41	84.25	2.43				
H. S. Secord & Son, Penobsquis	85.25	3.39	91.75	2.64			81.50	2.69
J. E. Hoyt, Hampton	83.50	3.32						
W. J. King, Sussex	81.00	3.23						
E. Roy Raymond, Norton	80.75	3.21	84.50	2.43			90.00	2.97
H. N. Flewwelling, Sussex	80.75	3.21	87.50	2.52			92.00	6.04
J. A. Floyd, Bloomfield Sta			90.00	2.59				
R. H. Rouse, Corn Hill			89.25	2.57				
R. S Parlee, Parleeville			87.75	2.52				
H. V. Dickson, Hammond River			87.25	2.51			90.75	3.00
J. Titus Barnes, Apohaqui			86.75	2.50			82.75	2.73
Kenneth Raymond, Norton R. No. 3			86.50	2.49			80.75	2.67
J. A. Duffy, Nauwigewauk			86.25	2.48				
W. E. McLaughlin, Lr. Millstream			86.00	2.47			83.75	2.76
H. H. Magee, Quispamsis			85.25	2.45				
M. M. Crabbe, Bloomfield Sta			83.75	2.41			88.25	2.91
Geo. O. Dunfield, Corn Hill			81.75	2.35				
Arthur Burnett, Bloomfield Sta			81.00	2.33				
J. Albert Fairweather, Hampton			81.00	2.33				
W. A. Porter, Hammond River			80.00	2.30				
Wm. S. Harding, Hammond River							81.00	2.67
R. E. McAuley, Sussex							90.00	2.97

An additional $3.00 goes to J. A. Marr and W. E. Wallace; an additional $2.00 goes to Jas. McElroy and McIntyre Bros., when they show their grain at Prov. Seed Fair.

VICTORIA COUNTY	Wheat		Oats		Potatoes		Turnips	
Name and Address	score	awrd	score	awrd	score	awrd	score	awrd
Donald Innis, Tobique River	92.75	3.82	90.00	3.62			86.75	5.28
H. G. Irvine, Andover	91.50	3.75	84.75	3.40	83.25	5.62	86.50	3.28
F. E. Henderson, Andover	88.25	3.62	91.50	3.68	81.50	3.55		
Gilbert Cronkite, Cupid	87.25	3.57						
John McB. Ellis, Kincardine	86.00	3.52	91.75	3.69	86.75	6.78		
Benjamin Bull, River de Chute	82.00	3.36	87.50	3.51	80.75	3.51		
Alfred Smith, Kincardine	82.00	3.36	90.75	3.65	81.00	3.53		
Archie Smith, Calwell Brook			85.75	3.45	81.00	3.53		
Jas. Howlett, Bairdsville					80.00	3.48	90.75	6.44

An additional $3.00 goes to Donald Innis and J. McB. Ellis; an additional $2.00 goes to H. G. Irvine and F. E. Henderson, when they show their grain at the Prov. Seed Fair.

KENT COUNTY	Wheat		Oats		Potatoes		Turnips	
Name and Address	score	awrd	score	awrd	score	awrd	score	awrd
Eustazade Arsenault, Bon Secour	90.00	2.49	90.80	3.62	86.50	4.81		
Edward Hannay, Rexton	89.75	2.48						
Francois Richard, Bretagneville	89.50	2.47					84.75	3.38
Henere Berthe, St. Jean Baptiste	89.50	2.47			81.25	4.52		
Dominique Belliveau, St. Paul	89.25	2.46						
Edward O. Collett, Bretagneville	88.50	2.44						
J. D. Irving, Buctouche	88.56	2.44	83.00	3.30			85.00	3.38
John Dixon, Jr., Up. Rexton	87.50	2.42	84.00	3.34	81.00	4.51	89.60	3.57
Wm. C. C. Clark, Up. Rexton	87.50	2.42	90.00	3.58			92.60	5.69
John C. Mundle, Up. Rexton	87.00	2.40	84.50	3.36			94.80	6.78
M. J. Hickey, Up. Rexton	87.50	2.42	83.00	3.30	84.75	4.72	87.90	3.46
Napoleon Babineau, Bretagneville	86.00	2.37	83.00	3.30				
Oneseme Goguen, Goguen	85.05	2.35						
Henri Cormier, Hebert	84.90	2.34	80.00	3.19				
Wm. Jardine, Jardineville	84.50	2.33	80.00	3.19			83.75	3.34
A. B. Carson, Rexton	84.50	2.33	80.00	3.19	89.75	7.99	86.55	3.45
Joe D. Bourque, Notre Dame	83.75	2.31						
Seymour Dixon, Up. Rexton	82.25	2.27	80.70	3.21	80.25	4.46	91.60	3.65
Andrew Dixon, Up. Rexton	82.00	2.26	82.50	3.28	80.75	4.49	83.30	3.32
Jas. Lawson, Mundleville	82.00	2.26	82.75	3.29			86.75	3.46
Cleopa Bariault, St. Ignace	81.50	2.25						
Maxime LeBlanc, White Sett	81.40	2.25						
Jaddus Robichaud, Lr. Goguen	81.20	2.24	89.75	3.57				
Luc Maillet, St. Louis	81.00	2.24					80.75	3.22
D. V. Landry, M.D., Buctouche	81.00	2.24					80.30	3.20
Philippe Cormier, Hebert	80.00	2.21			80.25	4.46		
Joseph Daigle, Bretagneville	80.00	2.21			84.00	4.67		
Placide Petitpas, Cormierville	80.00	2.21						
Abram Breau, Cormierville	80.00	2.21	82.00	3.26				
M. McLaughlin, Buctouche	80.00	2.21						
Fabien Arsenault, Bon Secour			87.15	3.47	85.25	4.74		
Felix Michaud, Buctouche			86.00	3.42				
Alban Dionne, St. Anthony			84.85	3.38				
Hypolite Henri, Sweenyville			82.30	3.28				
Theodore Langis, St. Anthony			81.40	3.24				
Alphie Gray, St. Charles			81.00	3.23				
Thos. C. C. Clark, Up. Rexton					87.25	6.85		
Leon Legere, St. Anthony					84.80	4.72		
Dominique Babineau, St. Louis					84.75	4.71		
Hypolite Daigle, St. Charles					84.35	4.69		
A. W. McBeath, Richibucto					82.75	4.66	85.80	3.42
Alex. Lawson, Mundleville							84.25	3.35
Dominique Boudreau, St. Anne							83.60	3.33

An additional $6.00 goes to Eustazade Arsenault and an additional $2.00 goes to Edward Hannay and Wm. C. C. Clark when they show their grain at Prov. Seed Fair.

NORTHUMBERLAND COUNTY	Wheat		Oats		Potatoes		Turnips	
Name and Address	score	awrd	score	awrd	score	awrd	score	awrd
Hector Gordon, Chatham	97.00	2.67	96.00	2.95	88.00	4.91	80.00	8.11
Wm. N. Sauntry, Millerton	96.00	2.64						
P. S. Bremner & Son, Chatham	95.00	2.62	91.00	2.79			83.50	11.47
Raymond Murphy, Craigville	91.00	2.51						
Jas. Young, Whitney, Box 23	91.00	2.51	90.00	2.76				
Leslie Loggie, Lower Napan	91.00	2.51	80.00	2.45				
Clem Dickson, Centre Napan	91.00	2.51	92.00	2.82	80.00	4.47		
Cloris D. Caissie, Rogersville	90.00	2.48	80.00	2.45				
John A. McNaughton, Black Rv. Bdge	90.00	2.48	89.00	2.73				
Donald McLean, Little Branch	90.00	2.48	95.00	2.92				
Hotel Dieu Farm, Chatham	90.00	2.48	85.00	2.61	80.00	4.47		
Francois Thibodeau, Rogersville	90.00	2.48			80.50	4.51		
Robert Taylor, Lower Derby	89.00	2.45			83.00	4.63		
Fred B. Williston, Bay du Vin	89.00	2.45	94.00	2.89	91.00	7.08		
Fred Traer, Chatham	88.00	2.43						
Wilfrid Gorman, Craigville	88.00	2.43	85.00	2.61				
Willard McDonald, Gilks	86.00	2.37	93.00	2.85	82.00	4.58		
John C. McKnight, Little Branch	86.00	2.37	90.00	2.76				
Ernest Traer, Chatham	86.00	2.37						
Henry White, Chatham	86.00	2.37						
Wordlow E. Gilks, Gilks	85.00	2.34						
Frank Dolan, Nowlanville	85.00	2.34	85.00	2.61	91.50	8.11	83.00	10.42
Geo. W. Loggie, Loggieville	85.00	2.34	85.00	2.61				
Wm. McKnight, Napan	85.00	2.34	85.00	2.61				
Benj. Deroche, Newcastle	81.00	2.23						
Walter C. Ward, Gilks	80.00	2.20			80.00	4.47		
Herbert Fowler, Little Branch	80.00	2.20	82.00	2.51				
Hugh McLean, Little Branch	80.00	2.20	80.00	2.45				
Hugh McDougal, Hexam	80.00	2.20						
R. A. Snowball, Chatham			95.00	2.92	84.50	4.72		
Daniel Baldwin, South Nelson Road			92.00	2.82				
A. G. Dickson, Chatham			91.00	2.79				
Hugh McDonald, Hexam			90.00	2.76				
John T. Sutherland, Blissfield			90.00	2.76	80.50	4.51		
Donald McNaughton, Little Branch			85.00	2.61	85.50	4.77		
Emile LeBlanc, Rogersville			82.00	2.51	83.00	4.63		
Fred McLennan, Douglasfield			80.00	2.45				
Jack McKnight, Black River					83.00	4.63		
Wm. Johnston, Newcastle					80.50	4.51		

An additional $6.00 goes to Hector Gordon and $2.00 to Wm. Sauntry; $1.00 each to Donald McLean and R. A. Snowball, when they show their grain at the Prov. Seed Fair.

1918 New Brunswick Field Crops Competition

WESTMORLAND COUNTY	Wheat		Oats		Potatoes		Turnips	
Name and Address	score	awrd	score	awrd	score	awrd	score	awrd
A. T. Oulton, Little Shemogue	98.10	2.51	94.55	3.04			89.50	3.73
Millidge Allen, Melrose	97.25	2.49	91.75	2.95	83.25	3.05		
Elman Treen, Bayfield	97.05	2.48						
Chesley Burns, Bayfield	96.00	2.46						
Herebrt Turner, Port Elgin	95.75	2.45						
Henry Davis, Melrose	95.50	2.44	93.25	3.00	84.95	3.13	81.00	3.37
James Simpson, Little Shemogue	95.35	2.44						
Job S. Peacock, Bayfield	94.80	2.43	93.15	3.00	90.70	3.32	88.75	3.70
J. C. Allen, Melrose	94.50	2.42	93.50	3.01	86.50	3.17	87.25	3.63
Thos Davis, Melrose	94.25	2.41	89.00	2.86				
J. F. Riley, Melrose	92.95	2.37						
W. E. B. Tait, Dorchester	92.25	2.36	96.00	3.09	92.75	3.40	87.75	3.65
Hallett Allen, Melrose	91.95	2.35	90.25	2.90			92.25	6.84
John M. Simpson, Little Shemogue	91.70	2.35	88.90	2.86				
G. F. Strang, Melrose	91.20	2.34						
W. W. Fawcett, Up. Sackville	90.75	2.32			96.75	6.55	87.70	3.65
Edwin S. Hallett, Melrose	90.50	2.32						
James Barry, Melrose	89.95	2.30	89.85	2.89	90.45	3.32	86.75	3.61
Frank Trueman, Up. Pt. de Bute	89.75	2.30	90.50	2.91			90.25	5.76
W. T. Allen, Port Elgin	89.75	2.30	93.25	3.00	82.50	3.02		
T. Herbert Stack, Melrose	89.20	2.28						
Judson Trenholm, Port Elgin	89.00	2.28	90.00	2.90				
J. C. Hennessy, Malden	89.00	2.28	90.65	2.92				
H. J. Walton, Bayfield	88.20	2.26	81.30	2.62			89.50	3.73
Leslie Rayworth, Upper Cape	88.20	2.26						
C. F. Allen, Melrose	87.75	2.25			82.50	3.02	87.25	3.63
Robt. M. Irvine, Baie Verte	87.40	2.24			87.10	3.19		
Geo. E. Trueman, Jolicure	82.75	2.12	96.75	3.11			88.25	3.68
Oliver W. Allen, Melrose	82.75	2.12	81.25	2.61	85.75	3.14		
William Savage, Melrose	80.85	2.07	92.85	2.99	82.50	3.02	88.00	3.66
Wm. Grant, Port Elgin			93.50	3.01				
Andrew R. Dale, Port Elgin			92.95	2.99				
Frank Fawcett, Up. Sackville			92.00	2.96	91.00	3.33	88.75	3.70
Frank B. Mahoney, Melrose			90.05	2.90	88.10	3.23		
Beverley Irvine, Pt. de Bute			86.75	2.79	89.75	3.29		
Walter H. Colpitts, Pt. de Bute			83.50	2.69				
John Barnes, Mount View					94.55	5.45		
Reynolds Weldon, Mount View					91.75	3.36		
Bedford Wheaton, Mid. Sackville							88.00	3.66

An additional $3.00 goes to A. T. Oulton and Geo. E. Trueman; an additional $2.00 goes to Millidge Allen and W. E. B. Tait, when they exhibit their grain at the Prov. Seed Fair.

CARLETON COUNTY	Wheat		Oats		Potatoes		Turnips	
Name and Address	score	awrd	score	awrd	score	awrd	score	awrd
Basil Kirkpatrick, Florenceville	95.75	4.03	88.50	2.88	91.50	4.07		
Lorne Hume, Florenceville	94.35	3.97	94.60	3.08	90.50	4.03	92.00	6.31
Fred Kirkpatrick, Florenceville	92.75	3.90	92.25	3.01				
Whitfield Ebbitt, Hartland	91.50	3.85	85.25	2.78			82.55	3.87
N. F. Phillips, Pembroke	88.75	3.73	88.00	2.87			89.25	4.18
F. S. Taylor, Florenceville	88.75	3.73	85.50	2.79			96.50	7.52
Otis Shaw, Florenceville	88.30	3.72	85.20	2.78	85.20	3.79		
Jas. McIsaac, Florenceville	87.75	3.69			88.75	3.95		
Thos. Caldwell, Florenceville	87.75	3.69	84.05	2.74	85.25	3.80		
A. H. H. Margison, E. Centreville	86.30	3.63	94.25	3.07	90.00	4.01		
Gilbert Stephenson, Florenceville	82.75	3.48	94.70	3.09				
Geo. Mallory, Jacksonville	82.10	3.45	83.00	2.70	87.50	3.90		
H. M. Estey, Florenceville	81.00	3.41	86.75	2.83			89.25	4.18
Benj. McIsaac, Florenceville	80.00	3.36			92.50	4.11		
Ed. McCain, Florenceville	80.00	3.36	83.25	2.71	84.00	3.74		
Bedford Hart, Jacksontown			82.00	2.67	82.60	3.68		
Harold Gartley, Jacksontown					93.00	7.14		
B. F. Smith, Florenceville					81.50	3.63		
P. R. Semple, Florenceville					92.75	6.13		
H. C. Taylor, Florenceville					90.25	4.02	84.25	3.94

An additional $3.00 goes to Basil Kirkpatrick and Gilbert Stephenson; $4.00 goes to Lorne Hume when they exhibit their grain at the Prov. Seed Fair.

RESTIGOUCHE COUNTY	Wheat		Oats		Potatoes		Turnips	
Name and Address	score	awrd	score	awrd	score	awrd	score	awrd
R. L. Hicks, Dalhousie Jct	87.00	3.66					90.50	5.09
Elysie La Brie, Anderson	87.00	3.66	89.50	3.77				
Jean La Brie, Anderson	87.00	3.66	88.00	3.70				
Solomon Ouillet, Anderson	85.25	3.58						
Narcisse Le Bel, Anderson	84.25	3.54						
D. G. Stewart, Dalhousie	83.50	3.51	80.75	3.41	83.75	4.82	85.00	1.96
Proculus Caron, Anderson	80.50	3.39	83.50	3.52				
Adelarde Demeule, Arsenault			89.75	3.78				
Emile Morissette, Arsenault			89.00	3.75				
Ernest Thibeault, Culligan's P. O.			88.25	3.73				
John Beaudry, Belledune			87.00	3.66	93.00	8.35	86.50	2.00
Emile St. Pierre, Arsenault			85.75	3.61				
Ferdinand Dube, Anderson			85.75	3.61				
John St. John, Anderson			82.25	3.46				
Paul Caron, Anderson					88.25	7.07		
Augustin Violette, Anderson					85.50	4.92		
Pat. Jean, Anderson					84.25	4.84		
John Culligan, Culligan's P. O.							89.00	4.05
W. H. Miller Co. Ltd., Campbellton							82.50	1.90

An additional $1.66 goes to R. L. Hicks, Elysie La Brie and Jean La Brie; an additional $2.00 goes to Adelarde Demeule; an additional $1.00 goes to Elysie La Brie and Emile Morissette, when they show their grain at the Prov. Seed Fair.

MADAWASKA COUNTY	Wheat		Oats		Potatoes		Turnips	
Name and Address	score	awrd	score	awrd	score	awrd	score	awrd
Denis Z. Daigle, Baker Lake	97.00	2.73	89.75	2.27	96.25	2.71	93.50	3.56
Paul Long, Clairs	96.00	2.71	95.75	2.43	93.75	2.64		
Pea Soucier, Caron Brook	95.25	2.68	94.50	2.39	92.25	2.59		
Wilbrod Saindon, Albertine	95.25	2.68	92.75	2.35	94.00	2.64		
Damase Daigle, Michaud	95.00	2.68	96.00	2.43	89.50	2.51	93.25	3.55
Oscar Levasseur, Clair	95.00	2.68	95.75	2.38	96.00	2.70		
Thos. E. Martin, Clair	95.00	2.68	92.25	2.35				
Antoine Ringuette, St. Basile	94.50	2.66	93.00	2.36	96.25	2.70		
Hector A. Daigle, Caron Brook	94.50	2.66	92.00	2.33	95.00	2.67	92.50	3.52
Hubert Michaud, Baker Brook	93.75	2.64	92.75	2.35	92.75	2.61		
Auguste Martin, Caron Brook	93.50	2.63	94.25	2.39	91.75	2.58		
Thos. P. Long, Cair	93.50	2.63	93.50	2.37	93.50	2.63		
Romuald Long, Caron Brook	93.25	2.63	88.00	2.23	80.50	2.26		
Auguste Daigle, Baker Brook	92.75	2.61	92.75	2.35	97.25	5.73	96.75	6.68
Denis O. Martin, St. Basile	92.50	2.61	93.25	2.36	92.25	2.59		
Hilaire Daigle, Caron Brook	92.25	2.60	94.50	2.40	86.50	2.43		
Maxime Daigle, Baker Brook	92.00	2.59	87.75	2.22	93.00	2.61		
Hector R. Daigle, Baker Brook	91.75	2.59			90.00	2.53		
Vitale Marquis, Baker Brook	90.75	2.56	86.75	2.20	91.50	2.57		
Chrisostome Morin, Clair	90.75	2.56	93.25	2.36	93.75	2.64		
Achille Levasseur, Clair	90.50	2.55	93.00	2.36				
Felix Martin, Albertine	89.50	2.52	93.75	2.37	96.25	2.70		
Jos, H, Albert, St. Hilaire	87.00	2.45	92.50	2.34	83.00	2.33	88.25	1.36
Narcise Pelletier, Caron Brook	86.50	2.44	92.00	2.33	89.50	2.51		
Belonie A. Nadeau, Caron Brook	86.50	2.44	89.25	2.26	93.50	2.63		
David Albert, Clair	85.75	2.42	91.50	2.32	87.25	2.45		
Elias Daigle, St. Hilaire	84.00	2.37	81.75	2.07				
Honore Nadeau, Clair			96.00	2.43				
Jos. L. Mercure, St. Basile			93.25	2.36	93.75	2.64		
Maxime Albert, Albertine			92.75	2.35	95.50	2.68	95.50	3.64
Felix Daigle, Michaud			91.00	2.30	96.75	4.72	96.50	5.68

An additional $3.00 goes to Denis Z. Daizle; an additional $1.50 goes to Honore Nadeau and Damase Daigle; an additional $2.00 goes to Paul Long and Felix Daigle when they show their grain at Prov. Seed Fair.

ALBERT COUNTY	Wheat		Oats		Potatoes		Turnips	
Name and Address	score	awrd	score	awrd	score	awrd	score	awrd
T. A. Goggin, Elgin	86.25	5.68	82.75	6.91	95.10	5.22	85.50	2.21
Clifford C. West, Hopewell Hill	83.75	5.52					89.20	2.20
Hanford Geldart, Elgin	82.75	5.45						
David Barbour, Riverside	82.00	5.40						
Wallace Smith, Elgin	81.50	5.37	81.25	6.78				
A. S. Mitton, Riverside	81.50	5.37					87.70	2.25
David B. Smith, Coverdale	81.25	5.35						
Neil Smith, Coverdale	81.00	5.34					91.40	5.35
Howard Stevens, Hopewell Hill	81.00	5.34					85.75	2.21
Albert Wood, Coverdale	80.50	5.31					90.05	2.32
Job Stiles, Albert	80.50	5.31					90.00	2.31
Fred Barchard, Elgin	80.25	5.29	82.25	6.86			91.25	4.35
Corey Stiles, Mapleton	80.00	5.27						
Ezra Barbour, Albert			83.50	6.97				
John H. Colpitts, Mapleton			83.00	6.93				
Wm. Stewart, Elgin			81.75	6.82				
Clyde L. Smith, Elgin			80.25	6.70	93.00	4.17		
Fred Smith, Hopewell Hill			84.25	7.03				
Byron A. Peck, Riverside							89.45	2.33
Geo. M. Russell, Hopewell Hill							86.55	2.22
Roebrt Horsman, Elgin							83.90	2.16

An additional $3.00 goes to T. A. Goggin and Fred Smith; $2.00 goes to Clifford C. West and Ezra Barbour when they show their grain at the Prov. Seed Fair.

SUNBURY COUNTY	Wheat		Oats		Potatoes		Turnips	
Name and Address	score	awrd	score	awrd	score	awrd	score	awrd
F. Atler Burpee, Oromocto	93.80	3.67	90.45	3.50	82.80	3.98		
T. H. Estabrooks, Lincoln	93.40	3.65	91.75	3.55	82.60	3.97		
A. C. Parker, Oromocto	92.50	3.61						
R. W. D. Hubbard, Oromocto	92.20	3.60	93.50	3.62	93.70	7.50		
Geo. Cimball, Oromocto	92.10	3.60						
Chas. H. Gilmor, Oromocto	91.20	3.56						
Chas. G. Bliss, Oromocto	84.75	3.31						
W. A. Cambridge, Oromocto			93.80	3.63	91.90	6.41		
H. P. McCain, Oromocto			92.45	3.58	83.25	4.00		
A. C. Burpee, Oromocto			92.00	3.57				
R. W. Larcelles, Belmont			91.70	3.55				
A. G. Turney, Oromocto					86.15	4.14		

An additional $3.00 goes to F. A. Burpee and W. A. Cambridge; an additional $2.00 goes to T. A. Estabrooks and R. D. W. Hubbard when they show their grain at the Prov. Seed Fair.

CHARLOTTE COUNTY	Wheat		Oats	
Name and Address	score	awrd	score	awrd
Tilley Reed, Leverville	91.5	3.51	90.75	2.63
Nelson Graham, Rollingdam	88.75	3.40	80.00	2.32
Edwell Emerson, Rollingdam	80.5	3.09		
S. J. Wilson, St. Stephen	78.25		90.5	2.61
Fred Hays, St. Stephen	70.00		75.5	
Wm. Doull, Little Ridgeton			84.25	2.44

An additional $6.00 goes to Tilley Reed; an additional $2.00 goes to Nelson Graham and S. J. Wilson, when they exhibit their seed grain at the Provincial Seed Fair.

(See also page 123)

THE MARITIME FARMER.

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NOVEMBER 19, 1918

DATES OF ISSUE.

November 19
December 3-17

ATTEND TO REPAIRS

Now that the live stock is housed for the winter, unless small repairs that tend to the comfort of the animals have been already attended to, it is now an opportune time to do so before the rigors of winter set in. The practical stock man does not need to be told that every little comfort bestowed upon the live stock during the season they are, so to speak, at man's mercy for food and shelter.

Is your stable a dungeon without light or ventilation? If insufficiently lighted why not cut several openings in the proper places for windows and insert a few sashes of glass or frames covered with cotton—the latter will give light and a fair amount of ventilation without drafts. A raid on cobwebs with an old broom, followed by a coating of whitewash will make the stable a place where you will rather delight in spending some extra time in looking after the comforts of your stock, instead of a place from which you wish to escape as soon as possible.

A great many stable floors are made of poles or planking. In either case, after a period of time the softer parts of the wood will wear down, leaving the harder knots protruding, much to the discomfort of the dumb animals that are compelled to lie on them. A few strokes with an adze, axe or chisel will soon cut off these hard knots to the level of the surrounding floor, and we are very sure that your stock, were they able to say so in words, would heartily thank you. There is no excuse for rough, uneven floors in the stables. Such floors should be gone over carefully to remove knots and to drive spikes or nails that may be protruding from the wood.

Can the cold winds blow in under the floors of your stables? If so, why not spend a few hours doing some banking, and stopping up the chinks in the foundation walls. All ti will cost is your own labor, and this will be well repaid by the saving of feed that the added warmth will effect. If the stable walls are not as proof against the admittance of cold as they might he, the farmer's own ingenuity will tell him what may be done to improve conditions.

"The merciful man is merciful to his beast" is an old adage, and one that the well thinking farmer will heed. Nothing can be more cruel than to tie animals in stalls where they famish with cold, when a few hours work effecting repairs at this season would save them unnecessary suffering.

HOUSE THE FARM MACHINERY

Now that operations in the field are about over for the season, look around to see where your farm machinery is housed. Is it possible that mowers, rakes and reapers, as well as cultivators and seed drills are still in the open?

We know some farmers who are very careful of their farm machinery. As soon as a machine is no longer needed in the field, it is put under cover. In fact, careful farmers find it a paying investment to build a shed where machinery is kept under cover except during the hours when it is in actual operation. Farmers of this class find that their machines last many more years than do similar machines in the hands of the careless.

How often a plow, a mowing machine, rake or other implement is left in the fields to rot and rust. We have seen farm machines of every description emebdded in ice out in the fields as we travelled throughout the provinces. It is bad enough to leave the machines in the open, but it is worse to leave them on ground that is flooded and covered with several feet of water and ice during the winter season.

We know farmers who own mowing machines that have been in use for over twenty years and are still in good repair. We know some of the above mentioned afrmers' neighbors who have allowed three or four similar machines to rot and rust in the field during that time. This is a big leak. Stop it. If you have not a proper machine shed, build one as soon as possible, you cannot afford to go without one any longer. In any case oil the parts that are subject to rust and put forth an effort to protect the machinery in some way from the elements.

HOUSE THE LIVE STOCK

Jack Frost is now issuing his daily reminder that the Winter Season is fast approaching. The live stock is, in most cases, housed and must be fed. While the fields remain uncovered many farmers follow the practice of allowing their stock to graze the frozen herbage. We often see live stock in the open while driving, cold, wintry rains are drenching them, as they are striving to gather enough food to eke out an existence. During cold wet or windy weather, we believe the live stock could more profitably be kept in their stables. Nothing is gained by subjecting stock to adverse weather conditions. Frozen grass is not conducive to the accumulation of muscle or fat, and discomfort will very soon cause even the most thrifty animals to rapidly loose flesh.

WERE THE SCIENTIST AND FARMER MEET

Horsemen caution us against allowing the young colt to nurse the mare while she is heated from hard work. Dairy men tell us, if we want wholesome milk, to handle the cows gently. Swinemen caution us to keep the brood sows quiet. But why all these precautions? The answer is—excitement, worry or over-heating the animal has a very detrimental effect on the milk. The inquiring mind is not satisfied with the answer. Just what effect do these various causes have on the milk of the sow or the cow?

Here is where the scientist comes in. The layman has found that certain conditions or causes produce certain effects. We learn by observation and sometimes costly experience what nature does under certain circumstances. We cannot analyze or explain the chemical changes which take place in the milk. And so it is with many things the farmer has learned by experience. He states them for truths and facts.

But the scientist in answer will say—I do not take much stock in it because I have no experimental data which proves it to be so. Or perhaps he may think it a superstition handed down from our forefathers to the "hollow horn" school. He sometimes smiles at our statements. But being a painstaking and hard working fellow, he continues with his test tubes and magnifying glass and after a while announces a discovery. The announcement reads something like this: "Prof. Smith has recently discovered by a series of experiments with the milk from heated and angered animals, that analysis reveals certain acids and poisons present in quantities sufficient to produce rheumatism, colic and various other ailments, often very serious or fatal to the life of the young." It is now our turn to smile and say (if we like) I told you so.

WHERE WE FOUND OUR PROOF

Haven't we been started often enough, on going into the barn to find a fine big colt rolling violently with the colic, to have known about that heated milk long before the scientist worked out his problem? Didn't our grandfather know it wouldn't do to dog the cows? That to allow a sow to be worried by a dog or from any other cause would be very injurious and sometimes fatal to her pigs even after they were six weeks old; that it would be almost sure to cause rheumatism or big joints, or indigestion? But he says navel infection causes the big joints. Sure that does it, too. But we knew that the milk trouble was caused by something in the milk produced by the condition of the animal and we also know what that condition was.

After all, we like the scientist and every day his assistance is ebcoming more helpful and more necessary.

* * *

A soil that is well supplied with phosphorus and lime goes a long way in producing a good crop if it has a fair chance.

* * *

The best breed of poultry is the one you like best.

* * *

Clean stables, clean cows, clean milk utensils and cleanliness in milking is what produces sanitary milk for human consumption. Is your milk clean?

* * *

It is not what the hog eats, but what he digests and assimilates, that brings the profits out of the feed consumed.

* * *

The boy with a pig of his own to-day is the livestock man of to-morrow—provided his father does not beat him out of the money the pig brings.

* * *

Now is the best time to gather up and sell all your old junk in the way of iron and steel, rubber, paper, bones, etc. Prices are not only exceptionally high, but the material is actually needed; and the results in your pocket-book will be much more artistic and satisfactory than the junk piled up in your fence corners or your yards where the stock can run over it and be crippled. Of course, we think you should save your papers for reference. At least, you cannot afford to throw them away or burn them at the present high prices for old paper.

FOUNDATION FACTS OF DAIRY INDUSTRY

An Address by Prof. J. M. Trueman before the Nova Scotia Dairymen's Association

Mr. Chairman, Ladies and Gentleman:

I am glad to have the opportunity of standing before the Dairymen of Nova Scotia. I have had the opportunity of meeting with the Dairymen's Associations in different parts of the country where the Dairymen were, I will not say wider awake than in Nova Scotia, but where dairying was an older business, or where the pushing of the business to build up a big dairy industry, had been going on longer than in Nova Scotia. I do not know that milking cows was as old in some of these states as some of them were wild states when Nova Scotia was making butter. Nevertheless, the big centres and a growing demand for dairy products had forced the dairy business ahead at a faster rate than in Nova Scotia.

You will know that my business at the present time is not connected so closely with the manufacturing as with the producing of milk and the breeding of dairy cattle. Mr. MacKay has asked me if I would not spent a little time emphasizing facts with which you are alrealy well acquainted, and which are perhaps truisms, but which are at the foundation of the business.

You men in the creameries can only be successful if the farmers bring you enough milk to carry on your business. Let us take a few minutes in putting into orderly array our ideas in re milk production.

I take it there are three things necessary for the production of milk. You may be surprised at the one I put first. It is not the cow, it is not the feeding of the cow. It is not the feed which the cow eats; It is not the cow herself, it is the dairyman. Now, it is important to have a man who thinks and a man who has stored away in the cells of his brain knowledge that he has built up by years of work in the proper handling of cows. You may say never mind about the man, give me some great cows like the ones in the barn at the Agricultural College and I will get the milk no matter whether I ever saw a cow before or not. You will not do it; you will ruin her in six months or milk her so that she won't produce half as much as she should produce. It is the man who handles the animal who must have the knowledge and that is where we come back to every time.

One time in Connecticut I was asked to give a speech and told to choose a subject. I said I would talk about the dairyman, and they said that was a very peculiar subject to talk about, the man himself. They knew what they knew and it was no use to talk about them. I might speak about his temperament and his ambitions, but one thing is of vital importance and that is that he should be a lover of animals.

I remember a man whom I once knew who was driving a stage coach. About every other day that man would get mad and give the horses a licking, and would keep them in a nervous condition, so that they were never able to do the work and nobody was ever satisfied. It works the same way with a cow, the man who, every time the cow does not do just as wishes, remonstrates with her with the stool, is not going to make a success.

I used to wonder what the man who drove the staeg coach was good for and used to say he was good for nothing. However, eventually we found a place for him running a gasolene engine. When the engine does not work right, it is no good for him to beat it. He could not make anything by getting mad at the engine so he kept cool and used his brains. So if you have a man who cannot keep his temper, give him a tractor.

We have the man first, the cow second and then the feed to give her. These are the three important things.

Let us consider the cow as to her breeding. You might get a pure bred cow that would sell on the market at from $400.00 to $500.00, but this is not the kind of cow you want to give best results. I have seen many men ambitious to get into the breeding of pure-breds. I would not give this advice. One or two here and there who have had the experience, have the capital and the ambition can make a success of pure-breds to furnish the foundation stock to use with a grade herd. In this Province the greatest improvement in the dairy herds will be made by the use of pure bred sires, and in buying a pure bred sires, and in buying a pure bred sire care should be taken to study up his ancestry. Too many bulls are sold simply because they are pure breds and not on account of their record.

It is the work of the Agricultural College to build up a herd which will provide pure bred sires for the grade herds of the Province. You will never get any sympathy from me if you come to buy pure bred females unless I recognize that the man has the ability to go ahead with the pure-bred business in which case I am glad to do what I can for him. What we can do for Nova Scotia is to get the best females to be found and sell their sons to improve the herds all over the country. This is the work which our best breeders of pure-breds are doing.

These bulls should be taken good care of and be used for a number of years. A man told me today that he had to sell his Ayrshire bull because he was getting cross and he was only three years old. If he was a good bull, he was just throwing him away as far as breeding was concerned.

If you get a good bull and breed to grade cows, the next generation will be more than half as good as their dams. In the second generation you will use the same bull on the 50% heifer. This generation will be 75% pure. The next time you may use another bull just as good, preferably bred along the same lines in an endeavor to get a definite strain of blood introduced into your stock. In this way you will get the progeny 87% pure.

So by buying a bull of the right kind and using him on these grade cows and keeping this up for five generations, which means ten or twelve years work, you have your herd 96 7/8% of the right blood.

In too many instances the breed is shifted. If you have been working on the Holstein and change to the Shorthorn, you break down the work you have been doing. This is the story. I might talk here for a week and give lecture after lecture, but I cannot tell you anything more about breeding. I prove your stock on the plan of "every time a little". Have every generation a little better than before.

One reason you get discouraged is that you do not get a bull good enough. The price is the smallest thing. When you pay $200.00 for a bull you are a great deal more likely to take care of him. The trouble is that we do not buy good enough bulls. We buy poor bulls and after a year or two they are turned over to the butcher. We shift and shift and have not a chance to select as we have to use about all the bulls that are born from decent cows. If you would buy bulls and keep them for ten years, I would have to throw away the bulls that were not up to the highest mark, but as it is we have to scratch around the country to find enough to go around, and we have to use the poor ones.

I do not want you to think that I am opposed to the right man going into the breeding of pure bred cattle, but I will say that the general farmer who is producing milk, is better off with this kind of stock than he is to try to breed pure stock. Even if they do sell a a high price, there is nothing in it in the money way, and you had better leave it for the men who have time, ability, capital and a chance to keep posted on it.

We would soon crowd out the breeder who was not giving us the best of stock if we did not kill the bulls off so much. A man came to me tonight and told me the experience his society had. First they bought a good bull which gave them good results; then they bought a poorer bull and he was not satisfactory, then they bought another and he was not satisfactory. Now they have come to the conclusion that they must go back to a good breeder and put more money into a bull.

I will just take time to very briefly impress upon you some facts in regard to the feeding of cows.

Just to keep a 1,000 lb. cow for one year, just to maintain her so she will do her work, just to pump the blood, just to keep her warm and enable her to move around, would take 255 lbs. of protein and 2892 lbs. of total nutrients. In order to produce 8000 lbs. of 4% milk, she will require 520 lbs. more of protein and 2800 lbs. of nutrient. This will be supplied by 4280 lbs. hay, 5330 lbs. turnips, 428 lbs. of bran, 428 lbs. middlings, 214 lbs. oats, 428 lbs. cotton seed meal and 5 months pasture.

When you give her 775 lbs. of protein and 5692 lbs. of nutrient, you must remember that you have to feed her 225 lbs. protein and 2892 lbs. nutrient to just keep her alive. If you were to figure the cost for feed, it would be as follows:

Hay	25.68
Turnips	13.37
Bran	8.56
Middlings	10.70
Oats	6.42
Cotton Seed Meal	12.84
Pasture	10.00
	87.54

You will have to add for expenses $60.00. Do not think that all it costs to keep a cow is to feed her. We have to add to that the labor which is equal to $40.00 anyway, and then there are the various items, taxes, insurance, veterinary attention, bull service, etc., which will make a total of not less than $60.00. The cost of keeping a cow is, therefore, $150.00. If she gives 320 lbs. butter fat at 40c, the returns are only $128.00. Add to this skimmilk, manure and calf and there will be a small profit. I would call your attention to the fact that it takes as much for the actual maintenance of a cow giving 4000 lbs. as for a cow giving 8000 lbs. This would be a good thing to impress upon your patrons' minds. Make them understand that a cow giving 4000 lbs. of milk costs as much to maintain as a cow giving 8000 lbs. It costs so much to maintain an ordinary cow, that you cannot possibly make anything out of her.

Get a cow that will eat a lot of feed and will make the right use of it and there is no reason why we should not run our average production from 3500 to $4500 or 5000 lbs. As I figure it today, you cannot possibly come out any more than even until you have a cow that will give 6000 and that is a long way from the average of Nova Scotia cows. It is possible to get them and that is why we are keeping cows that will give 12,000 lbs., 15,000 or 16,000 lbs. We keep a bull from a cow that gave 18,000 lbs. Breeding from this kind of stock, if we stick at it, will work up the average eventually and we should, as creamery men, encourage the patrons to buy the best, encourage proper feeding; not extravagant feeding. If we work hard at this we should in a few years have an average of 5000 lbs. for our dairy herds.

When we have done this we will e that much nearer the realization of the goal Mr. MacKay set before us and it will mean a very great thing for the farmers and for the creamery men.

EVERY FARM IS BENEFITTED BY HAVING TOOL EQUIPMENT SUITABLE FOR REPAIR WORK

The location of a workship on the farm is one of the important things about it. It should be centrally located, not only in relation to the other buildings but to the fields as well. If there is a tool shed on the farm, this is an ideal place for the workshop. The tools, then, need not be removed to another building when being repaired. If the farm is located near a town where the services of a competent workman may be had, at short notice, the work in the shop can be easily attended to without much expense and loss of time. But as is the case with the majority of farmers, it would be necessary to go from two to ten miles in order to procure a good mechanic. It, therefore, is necessary for the farmer to be his own mechanic.

Every farm will benefit by having an equipment of tools proper for handling the repair work. The ax is probably the most important and should be of good quality. Then the half hatchet, hammer, draw-knife, crosscut saw No. 8, brace and bits, as well as good chisels, will be found the most serviceable. That is, they are the most needed for repair work in wood. To these should be added a steel square, spirit level, plane, and rule, if very much construction work is to be attempted. A claw bar is almost indispensable on most farms, for the pulling apart of old buildings and extracting of spikes and rusty nails. The steel and iron-working tools are almost as indispensable on the modern farm as are the wood-working tools. A number of sizes of monkey wrenches should be procured. The general-purpose size is a 12-inch. A set of wrenches or an alligator wrench will be fund useful in getting into tight places. I think the next in importance to the wrench are the riveting hammers, cold chisels, and files. If one wishes to do some of his own black-smithing, a small forge and anvil will be found a valuable addition to the farm repair equipment. For working in sheet metals and repairing metal roofings, a soldering iron is needed.

For working in leather, few tools are needed. A leather punch, rivet set, awl, and harness clamp are about all the tools needed. No workshop deserves the name unless it has a serviceable workbench of some sort. This should be fitted with good vise and planing stop, and should stand about 34 inches from the floor. The iron vise may be on the same bench as the wood vise, but it is more convenient to have this on a separate bench that is of more substantial construction than the wood bench.

Good windows are of great inportance in a workshop. Most of the work in the shop will be done on dark and rainy days and it is such work as will require all the light that can be obtained. In a shop 16 by 24 feet, at least 6 windows should be provided, 3 on each side. If the building is erected especially for a shop, a bench should be placed along each wall, one for woodworking and the other for metal. If a blacksmith outfit is to be installed, this can occupy the back third of the shop. This part of the building should have a dirt floor. The rest of the shop should have a plank floor. The door to the front part of the shop should include all of the space between the two benches so that the largest of the farm machinery can be brought into the shop for winter repair work. The blacksmithing part should also have a large door so that horses or machinery can be brought into this part of the shop without interfering with work in the other part of the shop.

Some of the tools necessary for the farm workshop are as follows: Crosscut hand saw, claw hammer, half hatchet, ax, steel square, spirit level, twist drills to fit carpenters' brace in sizes ½, ⅜ and ½, solid centre wood bits, chisels, draw knife, jack plane, bench vise for wood, bench planing stop, saw files, boxwood rule, wrecking bar, saw set, wire pliers, screw driver, etc. A crowbar and an assortment of carriage and machine oblts, wood screws and nuts, a keg of 7 and 20-penny nails, five pounds each of 3, 4, 5 and 6-penny nails, and ten pounds of fence staples, 1 and ½ inch.

HORTICULTURE.

SUSSEX AND STUDHOLM AGRICULTURAL SOCIETY HOLD ANNUAL MEETING

The 1918 annual meeting of the Sussex and Studholm Agricultural Society was held in the Agricultural School, Susser, on Monday, November 11th, at 2.15 p. m. In the absence of the president, J. T. Prescott, J. F. Roach presided. A report of the various lines of activity carried on under the auspices of the Society was given by the Secretary. It was resolved that the Society continue the same lines of activity as during the past season, including the holding of the annual Seed Fair and the co-operative purchase of fertilizer.

The election of officers which took place in open meeting resulted as follows:

President—J. Frank Roach.

Vice-President—A. D. Freeze.

Directors—H. R. McMonagle, W. F. Mosher, Wm. Jamieson, H. B. Parlee, Wm. Venning, J. W. Patterson, Kenneth McLeod, Harry Wallace, R. S. Parlee, F. S. Sharp, Alex Cook, Walter Craig, D. A. Walker.

Representative to N. B. Agricultural Societies United—J. D. McKenna.

Delegates to N. B. Farmers ano and A. D. Freeze, with F. S. Sharp and H. Wallace as substitutes.

M. A. McLeod was re-elected Secretary-Treasurer by the newly elected Board of Directors, which met immediately after the close of the annual meeting.

The Directors decided to start a drive for new members by each Director making a thorough canvass of his district before the end of the first week in December. The membership fee to the Society is $1.25, which includes a year's subscription to the Maritime Farmer.

The Directors will meet at the Secretary's home early in December to compile results of the new membership drive. Each and every farmer in the parishes of Sussex Studholm, Cardwell and Waterford should be a member of the Society.

The fertilizer order book will be kept open until the December meeting of the Directors to give new members an opportunity to place an order for their requirements for the season of 1919.

Are you a member? If not join the Society that represents your calling by handing your name and $1.25 to any one of the foregoing named officers of the Society. .

The war is over. The production or munitions is no longer one of the necessities of our empire. Men will gradually be released from military duties and the prospects are that in the 1919 seeding season labor will be more plentiful than it has been for the past few years.

The farmers part in the war was an important one. They nobly and well played their part in the Empire's second line, of defence on the farms. Their efforts, we are told, must not be abated. Food is urgently needed and will be needed until such a time as the devasted areas of Europe are brought back to a state where their peoples will no longer be absolutely dependent for their food supplies on outside sources. As never before, under the newer conditions that are bound to prevail, it will be necessary for the farmers of each district to co-operate. Begin now by joining the Society.

THE HOME-DRYING OF DAMP WHEAT FOR MILLING PURPOSES

Each year thousands of bushels of damaged wheat are treated and cured in privately owned "hospital elevators" in Canada then shipped to the mills to be gristed, the flour put upon the market, bought and used for bread-making. New Brunswick wants just such flour today. The market is crying for it. We have the mills, and, the damaged wheat, but no "hospital." What can be done for our damaged wheat crop?

The rough and ready home-cure must here be applied and applied with vigor and at once to save the crop from bin-burning, heating, and molds.

Wheat that is allowed to heat becomes fire-fanged or moldy and it cannot then be used for any purpose. But if the excess moisture be driven off before much heating has taken place, it will make good standard flour. Wheat sweats just as hay, potatoes and roots sweat after being harvested. How to get rid of the moisture is the problem in each case.

Sheaves of wheat taken to the barn in a damp condition will sweat in the mow, but will dry off without damage if but slightly damp. In some cases the bands or twine may need to be cut and the straw scattered over the haymows to dry sufficiently to thrash. The sheaves will thresh much easier after the freezing weather sets in, meanwhile the barn doors should be opened widely every fine day to permit a draft.

If wheat sheaves have been threshed when very damp the sweating takes place in the granary bin, or in bags, barrels or puncheons in which the grain is stored. The air does not penetrate these, heat develops, and when cooled the wheat has a musty smell. It is then useless for grinding.

Thousands of bushels of wheat already threshed are stored in hogsheads, in damp granaries and outhouses. This wheat, if held in such storage, will spoil. No "cold storage" plant can preserve its quality. It must be "dry cleaned" at home.

A method of every-day use in western elevators to handle damp wheat is to change the wheat from one bin to another. This method is effective there and will be effective in your case. Empty the hogsheads of wheat into a bin and if necessary shovel it over again into another bin within a week. Keep it moving as soon as heating is indicated. Ventilating shafts such as laths or strips of board shoved down through the heaps of wet grain—or a piece of stove pipe pierced wtih holes and the bottom plugged will keep small bins of wheat from heating, and a barrel of stone lime is useful to absorb the moisture.

If your granary is full and space limited, install a plasterer's stove, or any kind of stove and keep a fire burning, provide for ventilation of the building and the wheat can be brought to milling condition with the approach of freezing weather.

Dirty, damp wheat can be dried and greatly improved if run through a fanning mill with a strong blast of air. Damp, dirty wheat yields damp, dirty flour, for the "scalper" at the mill will not screen out the weed seeds, dirt and broken smutty kernels. Then, before going to the mill, clean your wheat, and as a final "dryer" range the grist around the stove for a day or two.

The drying of damp wheat is not a local problem only—good flour is made every day from damaged wheat. Wheat-saving is imperative today and is the why of the "Victory Loaf." Wheat is scarce.

Try, then, these methods to bring your damaged wheat into milling condition.

O. C. HICKS,
Dept. of Agriculture,
Fredericton, N. B.

FALL PRUNING OF BERRY BUSHES

Raspberries and blackberries are considered by the majority of people to be the best small fruits we have for table use. Even when they are selling for double what they usually do, we see the poor as well as the rich buying them by the crate for preserving purposes. In order to keep all the raspberry and blackberry plants in this state bearing in good shape each year they must be properly pruned. You will hear people say, "What is the use of pruning, my plants bear every year?" That is not what we prune for; we prune to make the plants bear more every year and keep free from disease. It used to be the custom to do all this pruning in the spring, but there is a great rush of work at that season of the year and many times the pruning is only half done or not done at all. Also it is very hard to tell which canes are lod and which are new in the spring of the year. The best and proper time to do the raspberry and blackberry rpuning is during the latter part of August or first of September after all the crop of fruit has been harvested.

Removing the Old Canes

Raspberries and blackberries are fruits which grow wood the first year and then the second year this wood produces berries. So after the second year's growth of the cane is past, it is no good to the plant for fruit production. It should be removed at this time in order to give all the vitality of the plant to the fruit-bearing canes. When the canes are cut from the plants they should be piled in heaps and burned so as to destroy all insects and diseases on them. By doing this every fall you will keep your plot of raspberries or blackberries in a very healthy condition.

Thinning the New Canes

At the same time that the old canes are cut out the young canes and suckers should be thinned. In doing this thin out the weak canes and suckers, leaving the strong healthy ones for the next year's fruit crop. This gives the canes left more sunlight and a better chance to make a strong growth. To get a good crop of very fancy berries it would be best to thin the canes so that they are about six to eight inches apart.

Pruning for a Late Crop

Some people who do not want only enough raspberries for their own use have a system of pruning so as to extend the fruiting season from two to four weeks. It works out quite well on a small patch, but reduces the crop too much to be a profitable proposition for the commercial fruit grower. All the canes are cut back to within about one foot from the ground in the fall to cause the late fruiting the following year. The strength of the plant the following spring goes to the lower buds first and a long shoot is made before the flowers appear on the canes. By this late flowering process you can make your patch of berries bear for a long time during the summer. Prune part of the patch for a late crop and prune the rest as you would ordinarily, and your season of

Fashion Favors These Amherst Styles

With their graceful lines they possess a definite and dignified air of distinction that has won for them an enviable reputation in fashionable circles.

This good name is further enhanced by reason of their unusual wearing qualities.

Your shoeman will be glad to show you the newest Amherst models.

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WHEAT

We will purchase good, dry, clean New Brunswick Wheat at highest market prices, according to grade.

Flour, Feed or Cash in payment.

Write us for full particulars, stating quantity of wheat you have.

FOWLER MILLING CO., Limited,
WEST ST. JOHN, N. B.

fresh raspberries will be several weeks longer than it would be under normal conditions. A. M. PORTER.

HOME-GROWN GARDEN SEED

The Experimental Farms Branch in a circular just sent out, very strongly urge upon every vegetable grower the need for growing his own seed, so long as there is danger of a seed shortage, which is very much the case at present. The experts of the branch suggest that growers mark the best plants of each vegetable grown in the garden and save these for seed rather than to take seed from what remains after the plants have been cropped. The following minimum number of feet, plants or specimens to be saved is suggested as being sufficient to supply enough seed for the home garden in 1919; Beans, 5 ft.; corn, 1 ear; cucumbers, 1; lettuce, 3 plants; melons, 1; peas, 5 ft.; radishes, 3 plants; spinach, 3 plants; squash, 1; tomatoes, 3. Either reserve a few feet of the row of beans, or, better still, mark a few productive plants free from disease.

The seed stalks of lettuce are thrown up after the heads are full grown. The seed ripens rather unevenly and, in order not to lose any of it, each head should be picked over as it shows white, it being necessary to go over the plants every few days. The plants can, however, be pulled and hung up to dry.

If some radishes are left unpulled, after being ready for use, they will soon throw up stalks, and good seed will develop. For best results the plants should be at least six inches apart.

Spinach, if thinned to six inches, will produce an abundance of seed. In saving home-grown seeds, it is important to dry them as soon as possible after they are ripe, then clean them and keep them dry until needed the following spring.

Peas and beans will soon be spoiled for seed if they do not dry rapidly in the pod after being harvested. As corn sometimes has to be pulled before it is quite hard, it is desirable to see that there is a good circulation of air around each ear. A good plan is to husk the ears and then stick each one separately on nails driven into a board and far enough apart so that the ears will not touch.

The seed of tomatoes for home use should be saved from the plant bearing the largest crop of early and best fruit. Where a quantity of seed is saved, the tomatoes may be cut in half and the pulp pressed out into some vessel, adding about one-third its volume of water. Put in a dark room until fermentation sets in, which will be in about two days, when the seed will separate readily from the pulp. Wash out and dry where the sun does not shine on it.

Following are the quantities of seed which one might expect:—Beans, 1 or more ounces per plant; corn, 300 to 600 kernels pe rear; cucumebrs, ⅛ to ½ oz. per specimen; lettuce, ¾ oz. per plant; muskmelon, 1 to 1½ oz. per specimen; onion, ⅛ oz. per plant; pea, 4 oz. per 3 feet or row; pepper, 1/16 to ⅞ oz. per specimen; radish, 1 oz. per plant; spinach, 1¾ oz. per plant; squash, small, seeded, 2½ oz. each; squash, large, seeded, 3 oz. each; tomato, 50 to 300 each; watermelon, 2 to 3 oz. each.

APPLE, KING OF FRUITS—CIDER, QUEEN OF DRINKS

(By Frank B. McMillin, Mount Gilead, Ohio.-

Fruits supply in superior form a number of elements that are absolutely essential to the well being of the human body and brain. But of all our varied and fascinating range of fruits none can hope to ever attain the popularity of the apple. There is no fruit that lend itself to such varied uses and none that can take its place as a food product. Apples lead all fruits in North America for the amount grown and the money value inivolved. Our total agricultural apple crop for one season would make ten piles as large as the Great Pyramid of Ghizeh, or would wrap a band around the earth at the equator a foot thick and seven feet wide. The immensity of the industry is little comprehended by most people. Almost every state in the Union produces apples and in most parts of the United States they are one of the leading staple products of the farm, whereas the larger share of other cultivated fruits rank as luxuries. Apples agree with everyone and are found everywhere. They are at once the poor man's fruit and the rich man's dessert. All ages, conditions and kinds of people relish them, yet the rightful place of the apple in our national diet is all too little appreciated.

As a matter of fact, apples merit a universal use as a medicine as well as a food. Analysis shows that they contain albumin, sugar, gum, malic acid, gallic acid, fibre, water and indisepnsable organic salts such as potassium, phohphorous, calcium, magnesium, silica and sulphur. The age-long veneration for this king of fruits is found to be well justified upon scientific investigation. So marvelously are health-giving properties combined in apples that blood and muscle, bone and nerve all receive peculiarly valuable nourishment and one can readily imagine that the ruddy hue of the apple is in a measure imparted to the complexion of the eater. The preponderance of base-forming elements in apples tend to neutralize the harmful effects of our ordinary American diet of too much meat and denatured cereals. The acids of the apples diminish the excess acidity of the stomach and purifies the blood. Their plentiful use will add to our happiness and length of days by aiding in the elimination of impurities from the system and strengthening the digestive processes.

When we consider that the skin and cores of apples are anything but digestable, we recognize that it is really the juice—some ninety per cent of the whole—that contains the valuable elements for which apples are justly famed. Pressing out the juice does not lessen the value or change the essence but merely alters the form. Therefore whatever food and medicinal properties may be ascribed to apples are likewise contained in pure, sweeet cider. Furthermore, the chemistry of nature takes the raw juice and by the process of fermentation and clarification renders it highly agreeable to the palate and even more effective as a tonic. All the mineral salts of the apple and all its esters and other desirable bodies are carried over into the cider, as will be attested by any chemist who takes the trouble to investigate.

Eminent physicians throughout the civilized world acknowledge the hygenic properties of cider and recommend it for quite a series of diseases such as indigestion, rheumatism, kidney trouble, stone, gravel and gout. As a preventive and cure for various gastric ills, cider is unsurpassed. Its wholesomeness as a beverage and effectiveness as a remedical agent is championed by many of the most distinguished physicians and scientists of Europe and America.

The objection of some that the use of cider may create an appetite for strong drink does not seem to be borne out by facts. Few drinking men care anything for sweet cider; to many of them it is positively distasteful. On the other hand ,nearly everyone who has no appetite for liquor is fond of good cider. This is especially the case with children. Ginger ale, coffee or tobacco are more likely to create an appetite fro liquor than cider, as they are stimulants.

While the juice of the apple is converted first into cider, its usefulness as a food product increases as the cider is made into cider vinegar, apple syrup, boiled cider, cider jelly and, last but not least, apple butter. The pomace, which is rich in pectin, is also used very satisfactorily for jelly stock. In many places it is being used with splendid results as feed forcattle, hogs and sheep.

The market for good cider and cider products is far greater than the supply and the business offers unusual attractions. Wherever apples are grown great quantities of small, unmarketable fruit go to waste anually. hese under-grade apples represent a valuable asset of good food as well as an excellent source of profit to the grower when properly utilized. An average of over four gallons of cider can be easily obtained from each bushel of these waste apples by the use of a modern hydraulic cider press. The invesment required is not large and the upkeep is nominal. The pressing season comes at a time when farm work is usually not urgent. Very little mechanical knowledge is required for successful operating. There is undoubtedly room for a great many more cider mills throughout the apple-growing section of our country.

Especially this year the apple grower who permits fruit to lie on the ground and rot is not only losing good money for himself, but is wasting a much-needed food right at a time when great numbers of the world's population are actually starving. Gather up all your waste and surplus apples, take them to a modern hydraulic cider mill and make available just that much more good food. Besides the enjoyment of delicious apple products for your own household, there is splendid profits to go into your pockets from the ready sale of the surplus. Don't let any cull apples go to waste this year.

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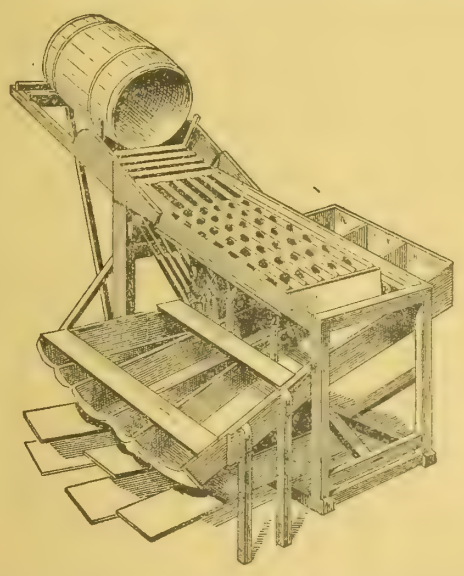

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DAIRYING.

COW CO-PARTNERSHIP

(By Chas. F. Whitley.)

In the science and practice of dairying, it is recognized that several factors contribute to success. At a dairy convention only a few can possibly be considered, so may I offer a remark or two concerning man's finest servant, and how her service may be rendered still more useful through cow testing?

"Finest" was used advisedly, for what domestic animal is more patient, more completely useful than the dairy cow? Some day a poet lauareate will appear to immortalize her, redeeming her from the joke page of a fifth-rate artist's so-called comic paper; she well deserves it, for day in (and night out) she works unceasingly, ungrudgingly, with no expectation of reward. To her we all may look in admiration; on the character of some of us perhaps, she, the symbol of contenment, the perfect embodiment of exquisite unselfishenss may have some reflex action. The extent of her enormous task is not always fully appreciated, the giving of her actual self in the breaking down of tissue, while laboring at the secretion of milk 24 hours per day—a contract indeed to an average farm horse, working less than five hours per day and costing far more than Bossy to feed.

In this age of organization and cooperation essential to include a thorough overhauling of all dairy herds. As these times demand that all lines of endeavor must render service, is it not incumbent on every dairyman to assure himself of the exact measure of each cows participation? It is hardly good business, is it, to keep, blindly, the cow that gives a scant 4,000 lb. milk when from others in the herd a bounteous weight of full six tons may annually be derived.

Every man is interested in the upbuilding of the dairy industry, believing that it makes for the prosperity of our glorious Dominion. It is an old truism that the foundation of good dairying is the cow: but please note, not any common, ordinary old cow, but the cow of distinction, selected on her records as one worthily filling her mission of profitable yields. Obviously due credit should be given to each partner-cow for her contribution to the total wealth of the firm, the point is that we need it down in black and white whether she delivers the goods to the extent of 150 or 350 pounds of fat. On that important point cow testing alone can satisfy your enquiring mind.

To get the best results this co-operation evidently must be genuine, complete, not fragmentary. Are all of our dairy cows today getting a square deal? From the humane standpoint it appeears that some merit better treatment; here and there the milk of human kindness needs to be clarified so as to leave no sediment of ungentleness. Our cow testing records indicate plainly that where the alliance between the herd owner and the cow is one based on honest dealing, there is ready response on both sides; the cow does better as she is treated better, and the owner does better as she, through the milk records, teaches him her needs.

Fellowship, comradeship, gives mutual advantages. The good cow helps the owner climb, the cows improve as the people on the farm are appreciative. Time and again our records have shown how better care, more liberal and more judicious feeding have completely altered the financial situation and helped to build both herd and farm.

A herd in one of our Ontario dairy record centres has a marked instance of the direct results of such treatment, with an increase in yield from 5,460 lb. milk to 9,428 per cow in two years, seventy per cent. more milk from the same cows.

In the table following some remarkable contrasts are to be found.

Comparisons in a Herd

Average Yield 18 cows, 4,915 lb, Milk, 3.4 Test.

Average Yield, 18 cows, 161.6 lb. Fat. Value $56.56.

Average Profit, 10c. per lb. Fat, Feed cost $40.00.

Cow No.	Lb. Milk	Test	Lb. Fat	Value Fat at 35c.	Profit per Lb. Fat
1	3,440	4.0	140	$ 49.00	6c
2	3,550	3.8	137	47.95	6c
3	6,210	3.7	234	81.90	18c
4	3,474	3.5	123	43.05	2½c
5	5,460	3.5	194	77.90	14c
6	4,520	3.2	147	51.45	8c
7	9,750	3.1	307	107.45	22c
8	5,316	2.8	151	52.85	8c

These figures reveal contrasts that occur frequently. In this herd of 18 cows the average yield is 666.6 lb. fat; omitting the ten nearest that average the individual tests are seen to run through the whole scale from 2.8 to 4% of fat. The lowest yield of fat is from a six year old contributing only 123 lb. of fat to the general wealth; on this is made, above the feed cost of $40.00 a profit of barely two and a half cents per pound of fat. The highest yield is from a seven year old giving 307 lb. fat, on which is made a profit of twenty-two cents per pound, more tha neight times as much.

With the eight cows tabulated above, the profit is $22.65 per cow above feed cost: but if the three lowest yields of fat are omitted from the eight, the profit stands at $32.45 each, or almost ten dollars aditional per cow.

This partnership with real cows means almost more than one can dimly outline in a few minutes. If man is known by the company he keeps, some of our records make us wonder if a few dairy cows would like to choose other owners, they might then have needed oportunity to make good. Many others, both cows and men, advertize their own good old home farm, so excellent are they.

In the real community, where pooling and harmony of interest are maintained, good results are apparent. Where all the partners are active, not sleeping; where each is thoroughly interested in the live, going concern; where complete understanding exists; where the working basis is sensible and economical; what a chance there is for abundant productoin! And the selected cow rises to the bait every time.

For where our cow testing work is in operation we find districts averaging 6, 7 and 8,000 lbs. milk, over 240 lbs. fat per cow for as many as 500 cows.

The formalities of partnership are clear enough, the objects well defined; you and the cows deal in certain commodities, acquire certain properties and make certain articles. From whichever angle you view cow testing, ii must be admitted that to Ontario dairymen it is most valuable, it is more, for it is absolutely indespensible to real success.

With due mixture of capital invested in good cows, and intelligent labor in field and stable, one may rely on a good day, a good month and a good year. Profits are not from an accidental hit on a fleeting big pay streak in the live stock gold mine, they result from steady, permanent growth fostered by the enlightenment of cow testing.

You may take in $300 from your 20 cows some one month, but is not the vital point a definite knowledge not only of income from each during the whole year, but the net profit each one earns? If it is only $10 now, you can soon make it $70 profit per cow.

While it may not be possible for every man to own many champion prize winners, yet as the herd can only average up well if each individual member is good, it follows that a study of each one as a separate entity must be made if real development is to follow and if income is to be increased.

Can you by such study improve your present output? Do your 10 cows bring you $350 clear profit, Will any of your cows give two dollars and fifty cents worth of butter in return for one dollar and a quarter's worth of grain? Do you get better results from feeding 1 lb. of grain for every 2½ lbs. of milk produced or for every 5 pounds? Can you get 5% or 20% net prolt on your investment? Does Old Spot give you 9 or 19c prolt on each pound of fat produced? Such questions are answered definitely by cow testing, for its modern business methods rest mainly on attention to the individual in order that resulting totals may be classed A1; not as a dead, inanimate machine, or as machine-made, turned in a lathe to one pattern.

If one should be tempted to ignore the wisdom of linking arithmetic with cows, it may be well to remember that this ancient and exact science if numbers helps tremendously in every phase of modern preparedness. Not a battleship moves, not a gun is fired, not an aircraft soars, but figures are used, checked and rechecked In the dairyman's war against loss he wisely counts, daily he calculates where saving retrenchment can be made, where advances are justified, from the elevation of his superior intelligence he computes values; at every turn he needs arithmetic.

Indeed it may be claimed that the better type of dairyman, the one who would not dream of neglecting his daily weighing of each cow's milk, and balancing her account annually, is a distinguishing mark of modern civilization; for is that not just the outcome of what cow testing recommends system, order and method, as opposed to mere chaotic barbarism? We can hardly picture a barbarian using a Babcock or a feed record; but the mod-

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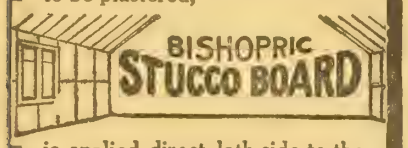

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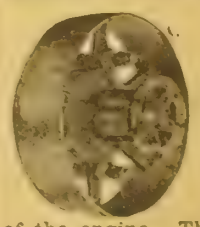

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ern, aiming at perfect manhood, builds up, constructs; he has this positive goal in view, to better himself, his herd, his farm—therefore he figures.

Our dairy cows throughout the Dominion consume probablyl eighty million dollars worth of feed a year. This is a business worth figuring about. Assuming a successful farmer works three thousand hours in a year, how much per hour do your cows make for you?

Whether cows are of correct structural style of architecture befitting their breed, or incline more to the ornamental, they will be subpected to the finding of the scales and test by men who are particular. The precise dairyman, the successful one, wants no trappings and trimmings till the fundamentals are assured, the solid base on which he builds must always be the selected cow, his plans and specifications are records of milk production and feed cost.

The argument for this partnership with cow capitalists may be further clinched. Cow testing educates the herd owner, whether young or old, and necessitating only a nominal first expenditure must appeal to those who seek affluence.

Men induced to commence, though at first sceptical, have frequently become dairy enthusiasts and good local preachers of cow testing because of the education it imparts.

Then from the intensely practical side of increased revenue and profit, it calls with no uncertain voice.

maintained. To omit such aim is to negate our birthright.

So the wisest among our dairymen, our farmers of far sight, clear vision, and big ideals, take up cow testing and reap rich rewards.

Let me give you another definite case; in two years sixty patrons of two creameries who were keeping records made a gain of 71 lb. fat per cow, or 8 per cent. The other patrons who were not cow testing fell off 87 lbs. fat per cow, or 17 per cent. Note what might have been: if all patrons had increased like the sixty did, there would have been an additional make last season of 58,000 lbs. butter. You know what butter is worth.

Fortunately our farmers are not touched alone by this purely monetary consideration. To the call of these awful times for men, they have responded magnificently. You turn now with broadening conceptions of responsibilities towards encouraging conceptions of responsibilities towards encouraging each cow to "do her bit" through true partnership is to be of timely, valuable service to the nation.

FAT TEST OF SWEET AND SOUR CREAM

One frequently hears people discussing how best to handle cream to secure the highest test at the creamery. Unfortunately some of the means suggested for securing a high test are not the best for the quality of the cream or the butter churned from it. E. O. Hanson, of the Minnesota Agricultural College, writing on this matter, says: Many have been led to believe that by holding their cream until it was real sour they would be given a higher test. This would be possible under one condition and that is, if a can of cream was allowed to stand for a long time at a rather high temperature, there would be enough moisture evaporate to increase the per cent of fat slightly, but this would be very slight and in that length of itme the cream would no longer be fit for food. Still this would bring no higher price for the product as the extra per cent of fat would only make up for the amount of moisture which evaporated.

To illustrate: If there were 80 lbs. of sweet cream, testing 30 per cent. fat, in this amount there would be just 24 lbs. of butterfat. Supposing this were allowed to stand until five pounds of moisture has evaporate, this would then leave 75 lbs. of cream testing 32 per cent. fat. It would also yield 24 lbs. of butter-fat and it is needless to say that the butter made from this 75 lbs. of so-called cream would not be fit for human consumption.

On the twenty-second day of May, 1918, the question was again asked in this way, "How do you know cream will not test more when it is sour?" On this same date the writer tested eight different samples sweet, of one pint each, using retested glassware and one of the best cream scales the market has to offer, making these tests in duplicate, and found that they ran as low as 16.5 per cent. up to 38 per cent. They were then kept in air-tight bottles and sealed with paraffin to prevent the escape of any moisture. They were held at approximately 80 deg. F. for ten days. They were then tested again, using the same test bottles to avoid any possible error and again tested in duplicate. The first results were not at hand while the latter were being read. In comparing the two results they were found to be exactly the same. It may be true that in some cases a higher test has been reported when the cream was sour, especially in thin cream. If a can of cream has been allowed to stand for any length of time and becomes sour, the milk solids settle and become very sour and firm, this making it almost impossible to get the can of cream thoroughly mixed. Therefore the sample which is taken will not represent the contents of the can it is taken from, as you realize there would be practically no fat in the milk solids which are left unmixed. Therefore many have been led to believe that cream would really test more when sour. If a higher test is given it is neither fair nor accurate.

Increases in Yields, Listowel, Ont. Dairy Record Centre

Herd	No. of Cows	In Four Years of Cow Testing Last Year's Yield Lbs. Milk	Lbs. Rat	Increases per Cow Lbs. Milk	Lbs. Fat	Per Cent. of Milk Increase
A	9	7,309	260	3,528	132	93
B	17	8,625	275	2,970	90	52
C	5	9,445	300	3,216	108	51
D	9	10,118	339	3,049	100	43
E	10	10,197	333	3,541	114	53
F	16	10,391	360	2,762	114	36

The increase noted in these six herds, samples of many others, afford wonderful encouragement to every dairyman. In four years the average addition to income has been the value of over 3,000 pounds of milk and 109 lbs. fat, that is at least $35.00 per cow. Both small and large herds have gained; the first herd shows actually 93% more milk, many other dairymen are now aiming at notring short of 10,000 lb. milk per cow instead of the old contentment with 6,600.

With no narrow-gauge view of life our best dairymen are truest patriots, for they broad-mindedly seek and absorb the best of other countries. Denmark taught us cow testing, the means to this definite end, on which always the emphasis will be loid, that is, the highest possible yield of milk and fat commensurate with moderate cost, the best possible cow that can be reared, the best possible herd that can be

AN INDIANA BULL STORY

"Buy better bulls" is the admonition of the Indiana Department of Agriculture. The further advice is given, "When you buy, get a good one. He transmits to his calves what he inherits from his ancestors. Look for a good individual with a pedigree showing high production records. If an older bull, he should have high producing daughters. His sire should be a good breeding bull with as many high producing bulls as possible. His dam should be a well-made individual, a good breeder, and have a high production record." The Department strengthens its counsel with the following story: "A few years ago a good dairy bull was purchased for use in one of Indiana's dairy herds. This bull cost $100 as a calf and was used on a herd of cows whose average production was 4,800 lbs. of milk and 260 lbs. of butterfat. The daughters of this bull have now replaced the old cows in the herd. These daughters exceed the production of their dams by 102 lbs. of butterfat and 1,828 lbs. of milk per cow per year. This improvement nets $300 profit each year in a herd of ten cows. It was a "bully" good investment."

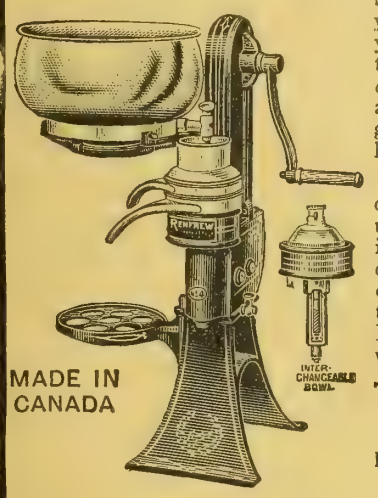
Let the Babcock Test Put You Right

SUPPOSE a tax collector came along and demanded from you a tax of about $4.00 on every thousand pounds of milk skimmed! That is the penalty you are paying by operating an ordinary separator that loses so much butter fat per 1000 lbs. skimmed that you would be astounded could you see it piled up in pound prints. Don't feed costly butter fat to pigs—save that needless tax on profits by getting the Renfrew.

Let the Babcock test put you right. It is an eye-opener for users of ordinary separators. Send a sample of your skimmed milk to one of the Government Dairy Schools. Then compare the result with the Government Dairy Schools' tests of Renfrew skimming on page eleven of our catalogue. How long will it take the saving of butter fat, with *your* output of milk, to pay for a Renfrew? We will tell you.

Renfrew

Send us the result of your independent Babcock test and your total amount of milk skimmed per year. We will, without obligation on your part, tell you how long it will take to pay for a new Renfrew *out of savings*. Is it good business to go along working in the dark? Investigate now—it may eventually mean hundreds of dollars to you!



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LIVE STOCK.

FARM CHEMISTRY TAUGHT THE FARMER BY THE COW, THE HORSE AND THE PIG

The lot of domestictaed animals on the farm is seldom considered from the natural point of view, and it is from this lack of consideration that many fail to get the best results from animal husbandry When these animals were free to roam the prairie from place to place seeking only to sustain and furnish life and sustenance for the reproduction of their kind, the laws which govern their actions met with few obstacles in accomplishing the natural results. But since being domesticated by man they have beeen placed under highly artificial conditions. wrere their capacities are taxed to the utmost. When they had their full liberty they could follow their instincts in selecting the food to manufacture into materials for the various needs of their bodies. How essential it is then, that those who substitute treatment of their own for that which nature prompts, should understand well. everything pertaining to the life, health and vigor of the animals on the farm. It is right here where the correct start is made, and the stockman who can best substitute nature in his methods of feeding and attention is the one who will make animal husbandry a profitable success. There are many conditions to be taken into consideration in regard to the domesticated farm animal. but that of supplying the proper feed in winter time is the one which meantime should be exercising the thought of the farmer. And the three prime necessities in any well selected ration are **succulence, digestibility and palatibility.**

Cows give the largest amount of milk when on good pasture and are generally in the best of health. and though giving large returns in milk, also make rapid amends for the loss of flesh and vitality, on the rough and ready winter keep. Horses gather flesh quickly on summer pastures even when they are in the season that demands their hardet labor. Pigs are "in clover" in a small summer run. and poultry fill the daily egg basket with only half the care and attention they get in the winter time. Can these conditions be extended? To a great extent they can and for this reason the farmer is urged to study his feeding operations from the summer standpoint, and the first call will be for **succulence in feed and its twin brother, plenty of good air.**

One of the greatest questions suggested by a study of the feeding problem is that of keeping the animal comfortable. The more heat required to warm the animal the more fuel or food is wasted. Chemistry teaches that the air in which a cow lives should be comfortably warm as well as pure. It is essential to the life of either the cow, horse or pig that they get an abundant supply of oxygen so that their internal manufacturing processes be fully accomplished. Abundant oxygen simply means lots of fresh air. All other good things in the life of farm animals will not avail if pure air and comfort is denied them.

Succulence

Nature's feed then for the farm animal is grass. and all their organisms are fitted to deal with such succulent feed. Green feed is more easily digested than is dry coarse fooder, such as hay. straw or fodder corn. Less energy is required to digest it, and it tends to keep the body and digestion in better condition, stimulating the appetite. Apples are not specially valuable from the standpoint of nourishment for the human body; their value is due to the fact that they tone up the whole systetm and satisfy the craving for something succulent. In like manner it pays to supply live stock on the farm with something succulent. The whole ration need not be of a succulent material. but that a portion of it should be such is essential for best results. Ensilage is one of the cheapest succulent feeds. The silo is the great canning plant on the farm, the one that carries over the sunshine of summer for winter use. **Ensilage is good feed, handy to deal out and very much relished by stock.**

Roots are another medium for supplying the necessary succulence, and for small herds, where the erecting of a silo would be too expensive, they fill the needful at less expense. An acre or so of roots, planted on rich, well-prepared land and well taken care of, will provide sufficient succulent feed for six cows. A few roots per day will impart vigor to the horse, and put a shine on his coat as nothing else can. That alone is true indication of health and proves the value of succulence in horse feed. They are of equal value in the pig pen and poultry yard, and the inmates will largely waste other more expensive feeds if their digestive systems are not toned up wit hsuccu-lent root.

The timothy hay, straw or corn-fodder prescription for feeding cows, is nothing more than a precarious existence that barely carries an animal over the winter to a summer chance, resulting in a loss of as much in the six months' winter period as it is possible for them to regain in the six months' grass period. The lot of the horse or brood mare ,kept in similar conditions is equally hard. Change the operation of feeding so that some sunshine may come to them all the year. It pays to supply succulence.

Palatability

Palatability is also an important factor in feeding. The chemist can tell which feed, feeds or rations are suitable to produce milk in the dairy cow, beef in the steer or energy in the horse, but the universal solvent is the palate of the animal, and upon that depends the health of all animals. In almost every class of food, anything that adds to its palatability aids digestion. Even though agreeable flavor may add nothing to the energy of a food, yet an animal relishing its food will have a greater flow of digestive juices, and the nutriments of the ration will be better dissolved and assimilated by the body. Even in the bare subsistence ration of hay and straw, there can be material difference in feed value if their palatability is looked after. In this class of food the manner of harvesting rules both digestibility and palatability, and therefore its value.

Completeness of digestion depends largely on the palatability of the food, for woody over-ripened hay, or mouldy badly stored fodder of any variety, however good its chemical analysis may be, loses a large part of its value. Any farmer can, wtih a little variety of added feed suited to stimulate the saliva flow in the mouth, aid the greater digestion of hay that has unfortunately been spoiled by adverse weather conditions on the farm. Damping it with water in which has been dissolved some molasses, the application of some seasoning condiments on the market, or even the judicious use of salt, will help greatly. These do not add nutritive value to the hay or fodder; their efficiency is found in the more complete digestion that is stimultaed by their use.

Digestibility

The measure of a food's value is its digestibility, and to ascertain this quality is the dariyman's or stockman's most important duty. Animals differ very much in respect to digestive ability. It is this observance of the feeder that spells success with live stock. Nearly all ailments of farm animals are produced by disturbances of the digestive organs. Digestibility, as has bee npointed out, depends generally upon the succulence and palatability of foods, and thus it becomes the sum of the two latter.

The stockman's object is to use the cheapest food to make the horsepower. beef, bacon, milk, butter or cheese, and the nutritive element in the foods grown on the farm can be conserved and utilized to good acocunt by one farmer, while it may become unprofitable by the wasteful non-obesrvant operations of another. All depends upon the man who takes these into consideration that farm animals are living things, with organs that respond and act according to the treatment they receive. **In these times of expensive concentrated feeds, winter days give the opportunity to consider what can be found in the feed barn more succulent and more palatable, and the digestive organs on which depends so much of the success desired, will respond with better health to the animal and more profit to the husbandman.**

SUNFLOWERS FOR SILAGE

On several occasions during the past two years reference has been made to the experimentation being done with sunflowers for silage purposes, but nothing definite has been given about Canadian experiments. This year the Saskatchewan agricultural college has been going into the matter, and has made a very good showing. The Manitoba Free Press refers as follows to the work done there:

"The university farm at Saskatoon has entered upon an experiment which may prove of very great value to the Canadian west. namely, the testing of sunflowers as material for filling the silos. Everyone knows that there is an enormous amount of nourishment in the seed of sunflowers, but the use of the whole plant is something new. The experiment has not been carried far enough to warrant the university issuing anything official, but no possible harm can result from telling the story of what has taken place so far.

'|The university of Saskatchewan does not claim that the idea originated with them at all. They are following in the footsteps of the Montana Experimental station at Bozeman, where some four years ago a small patch of sunflowers was grown, cut green and fed to cattle. The result was so satisfactory that the station has since grown large enough quantities to feed both in the green stage and cut up and put in silos. Several investigations led to the belief that dairy cows not only liked the feed in either form, but they produced milk and butter in quite as satisfactory quantities as when fed corn, cut green or as ensilage.

"Proceeding on this data, the university at Saskatoon has grown this year a sufficient quantity of sunflowers (some 36 tons' to test it out along with ensilage made from green oats. The sunflowers were cut when the heads were just forming. The stalks contained a large amount of succulence, about 90% water, and were easily cut with an ordinary cutter as are other crops used for ensilage, such as corn, oats and peas. The stems are solid ,and being very juicy, it is easily packed in the silo.

"The university also fed some of the freshly cut sunflowers to the dairy cows. They ate it up clean what was given them. It has a sweetish, rather oily taste.

"The sunflowers were sown on May 25, at the rate of 20 lbs. to the acre, with an ordinary grain drill, in rows 36 inches apart, by stopping up the inter-drills. The late spring frosts did not injure the plants, and the cutworm left them severely alone, while they totally destroyed the corn and mangels in the same field. The early fall frosts did not harm them either. The average of sunflowers for the four years on the experimental plots was 60,'00 pounds per acre, while the average yield of north-western Dent corn for the same period of years was only 19.700 pounds.

.,As has already been stated, the university is making no claim to a complete experiment, so far they have not had an analysis of the composite product, and, of course, have no definite feeding results, but the experiment will b watched with very keen interest and if it is sucessful ,it wil lsolve one of the big feed problems in the more arid districts of the west.

"The wild sunflower grows everywhere, and where the wild sunflower grows the cultivated sunflower will grow also. The sunflower in the Canadian west attains an enormous height and seems to thrive under any conditions. If it proves to be a good ensilestimate the value of the discovery."

COTTON SEED MEAL OR OIL MEAL

(Hoard's Dairyman.)

The price of cottonseed meal hsa been fixed at $53 f.o.b. mills in Arkansas, Alabama, Mississippi and Georgia. This makes it figure about $63 Boston rate.

According to Henry and Morrison a good grade of oil meal contains about the same amount of digestible protein as good 36 per cent. cottonseed meal. The oil meal contains 140 lbs. per ton more of digestible carbohydrates,

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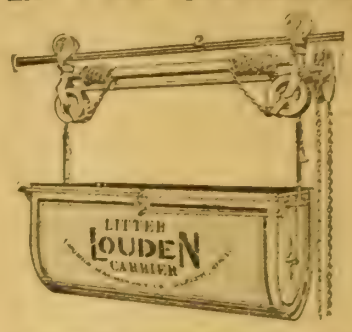

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which is equal in feeding value to the digestible nuterients from three or four bushels of corn.

The present price of oil meal figures out about $60 Boston rate. Therefore, you might say that the oil meal gives at least $6 more feed value for $3 per ton less money.

It looks like cottonseed meal is due for a decline to us to make it more in proportion with other feeds. What do you think about this proposition? What do your readers think of it?

Ohio. D. BROS.

So far as chemical anaylses are concerned, it may be stated that prime cottonseed meal and oil meal have practically the same feeding value. There is a difference, however, in the properties of these feeds, and which is not measured by chemical analysis. It is our belief that a feeder can afford to pay more for oil meal than for cottonseed meal when there are no succulents suc has silage or roots to form aportion of the cow's ration. When there is silage it does not make very much difference whether the feeder uses cottonseed meal or oil meal, but we would prefer oil meal if we could obtain it at the same price, even to use with sucuclent feeds. Where there is nothing but dry feeds, we would pay several dollars more per ton for oil meal than cottonseed meal, because oil meal has a laxative effect upon the animal's digestion.

We are satisfied that feeding experiments rave not yet determined all the qualities of oil meal, but we do know from parctical experience that is is a most excellent feed for dairy cows. If an animal is run down, out of condition, so to speak and given a little oil meal regularly it will usually show its effect in a very short time.

Neither oil meal nor cottonseed meal should be fed in large quantities, that is, not more than two pounds per day to obtain the best results.

Whether the price of cottonseed meal will be any lower than at present we are unable to say. We must bear in mind that there is a shoratge of feed and it is quite possible that cottonseed meal will be picked up at the price stated in this letter, even though oil meal can be purchased a little cheaper at the present time. The chances are that the price of oil meal will advance to be on an equal basis with cottonseed meal. It is our opinion that our readers would prefer oil meal to cottonseed meal at the same price and many of them would pay a little more for it.

NO PROFITABLE COWS FROM ILL-FED CALVES

The ordinary calf will consume two gallons of whole milk a day. In six months this would amount to about 112 pounds of butterfat. It really takes no figuring to see that butterfat is too expensive to feed to calves.

The new born calf must receive the first milk or colostrum of the mother for the the first few days. The calf should be fed new milk for at least two weeks, and if the calf is not robust it is safer to continue the whole milk three weeks before beginning to substitute skim milk. The change should be made gradually taking about two weeks to complete it. The amount of feed depends upon the size, strength and appetite of the calf. But don't guess at the amount of milk—have a graduated quart measure and then always measure. Overfeeding starts the calf wrong more often than any other cause. When you guess a large feed today and a small one tomorrow the calf does not thrive well. Just because milk is plentiful is no reason why the calf should be overfed, and it is never advisable to feed more than six quarts at a time, no matter how old the calf. The great difficulty in feeding calves is to prevent indigestion ,commonly known as scours. Many seem to think there is no danger of overfeeding on separator milk, as the butterfat has been removed. But this is a great mistake, as the protein has not been removed.

If a calf's bowels become too loose give, instead of the regular feed, a little more than a pint of wholemilk in which a raw egg has been beaten. Give this two or three times and then go back to half the regular feed and gradually increase if calf is in normal condition. The calf that is no in normal condition should never ge given a full feed of milk.

Observe the following simple rules: Never overfeed. Measure the milk each time. Feed immediately after separating, while the milk is still warm. Milk should be fed at the same temperature every day. Feeding cold milk one day and hot another will ruin a calf's digestion. Hot milk is never good for the calf's stomach. If necessary to warm the milk use a ther mometer and feed as near 100 degrees F. as possible. Feeding sour milk one day and sweet another will make a calf sick. Feed regularly and feed individually. If fed together some will get too much. Keep calf pails clean. This will make you extra work, but the healthy calf pays.

Do not feed grain mixed with milk, as it is gulped down without being chewed. Linseed meal and oats make a good ration.

The calf needs bulk for a healthy digestion, and will learn to eat a little fooder or hay when quite young.

SHEEP NEED WATER

Sheep, although not heavy drinkers, require their regular daily supply of water, and the caretaker should see that the spring or creek where they acquire it is kept open and easily accessible during cold winter weather. Some farmers say that sheep do not need water, an dwill live without it. They proved their words by their acts, and their flocks did not have water for weeks and months at a time during winter, unless a thaw set in.

The sheep ate snow, but that did not supply the needed water to quench the thirst. They lived, but how did they look? They were poor and half-starved looking, although well fed with both hay and grain. All that was needed t omake fine, sleek sheep of them was a box of salt, where it could always be accesible, and all the water they wnted. A less amount of grain and some water would have given better results. The body of the sheep requires the water to keep bowels and kidneys in active circulation, and when water is withheld those organs cannot perform their proper functions. Water helps to eliminate disease and promotes digestio;n without it the body suffers, the apetite flags, and a poor, straggling creature is the result.

Oh, yes, they live, but they are not a proft-maker, for their progeny is not sufficiently nourished before birth, and arrive weak and ailing. Some complain that salt gives the sheep the scours, but it will not if kept in goodly quantity before them all the time. Then they will not be so hungry for it ,and overeat. It increases the appetite and keeps them in prime condition when water is plentiful.—A. A. Drew.

Someone must stay at home to do the work of daughter, sister, maid.

To keep home sweet and clean, wouldn't you say she needs all the time-saving help that Gold Dust will surely give. These four *helps* particularly.

No. 1—Greaseless

Some articles collect more grease than others. For instance, roasting and frying pans, tops of stoves, dish towels. Busy housekeepers find that a tablespoonful of Gold Dust to half a pail of hot water makes the water soft for hands and wonderfully dissolving for grease.

No. 2—Gritless

There are many articles which require a *smooth* cleaner with no grittiness to mar glossy or polished surfaces. Such things as: silverware, windows, mirrors, wash bowls and all enamelled surfaces. Gold Dust is a smooth, gentle cleansing agent without grit. Remember—a tablespoonful to half a pail of hot w..ter.

No. 3—Rubless

Soap rubbed on a cloth cannot clean such things as: baby bottles, milk bottles, cruets, funnels, food choppers and all utensils with spouts. But Gold Dust dissolved in hot water makes a solution which dissolves every bit of oil or grease without the need for rubbing. Yes! A tablespoonful of Gold Dust to a gallon of hot water.

No. 4—Tasteless

Not even a trace of soap must be left behind when you clean the following:
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MILK FROM UDDER THAT IS DISEASED

Milk from the udders of cows suffering from mastitis (comonly called caked bag, garget, etc.) should not be used for human food as some very troublesome diseases may arise from doing so, especially in children. Milk from udders or portions of udders so affected nearly always contain harmful bacteria which multiply with great rapidity when the milk is drawn, and these organisms may be responsible for nausea, vomiting and even diarrhoea in th consumer. Epedemics of septic sore throat in many instances have been traced to the milk supply having been contaminated by one or more cows in a herd which were suffering from mastitis. The pus present in milk from a mastitis udder may impart to the milk an unpleasant taste and the mlik may curdle and putrefy within a few hours after being drawn. If only one quarter of an udder is affected and a small top milking pail is used the milk from the healthy portions may be used. The diseased portion should then be milked into a separate vessel and boiled before being disposed of.—Wm. H. Feldman.

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THE LAWRENCE-WILLIAMS COMPANY, Toronto, Ont.

THE HORSE

SPASMODIC COLIC

Probably the most common form of indiestion in horses is that form commonly known as "Spasmodic Colic." Some horses are particularly predisposed to it. It consists in a spasmodic contraction of a portion, or portions, of the muscular coat of the intestines, usually of the small intestine. It is not uncommon for the muscular fibres of the neckof the bladder to be involved.

Causes.—The disease is usually due to the nature of the food, or improper feeding, sudden changes of diet, exhaustion from overwork, particularly if associated with long fasting. A drink of cold water may cause it, especially if the horse be exhausted by a long journey or several hours hard work. Some horses are particularly predisposed, such as those in which there are concretions of different kinds in the intestines, abscesses in the mesentery, parasites in the intestines, ulcers in the stomach, canker or chronic thickening of the intestinal walls, also those with congenital or acquired weakness of the digestive powers or disease of the digestive glands.

While simple spasmodic colic is a comparatively unimportant disease, which readily yields to treatment in most cases, fatal cases have occurred, the patient dying from exhaustion, and a post mortem revealing no lesions or chronic disease of the digestive tract, the only abnormal conditions being a rigid contraction of small portions of the small intestine. Repeated attacks of colicky pains occurring in a horse without apparent cause, indicate some structural change in the digestive organs, in many cases the presence of concretions or tumors in the intestine. If such be present, and are movable, we are justified in assuming that they occasionally, by change of position, occlude the canal, and thereby check the backward passage of faecal matter, check peristaltic movement, and cause pain. In such cases the violent movements of the animal are liable to dislodge the obstruction, reopen the canal and consequently relieve pain. In other cases the obstruction does not become dislodged, the case does not yield to treatment, and after several hours, inflammation of the bowels results and causes death. A post mortem reveals the presence of a calculus or tumor.

A horse that is predisposed to colic from any cause will probably, sooner or later, suffer from an attack that will cause death. Some horses suffer from colic if allowed water shortly after a meal, others if given even a light change of food, others if fed certain foods, etc. When such is the case the attacks can usually be prevented by exercising care not to subject the animal to the conditions that cause the attacks.

Symptoms.—These usually appear suddenly and are very violent and alarming. The patient suddenly expresses pain by pawing, kicking at the abdomen, throwing himself down violently, rolling an dstruggling, jumping suddenly to his feet, probably repeating these actions, and, in other cases, shaking himself, then becoming quiet and commencing to eat as though nothing were wrong. After a variable interval of ease the pains recur, sometimes in an aggravated and sometimes in a modified form. During the attacks the pulse is full and frequent, but during the intervals of ease it is normal. The attacks may occur again and again, the periods of pain and of ease being of various duration, until the patient is relieved by treatment or spontaneous cure or the disease becomes complicated by inflammatory action, which complication usually terminates fatally. At the commencement of the attack faeces are often voided frequently and in small quantities and may be either soft or hard, while frequent voiding of small quantities of urine is often noticed. In other cases frequent but ineffectual attempts to urinate are noticed.

These symptoms indicate that the neck of the bladder is involved in the spasms, and as a consequence urine cannot be voided. This leads the uninitated to conclude that the horse is suffering from disease of the urinary organs. This idea is very common. The owner or driver decides that there is an obstruction in the urinary passage, and proceeds to remove it by giving a dose of sweet spirits of nitre. This is usually followed by relief but it does not act as it is generally supposed to. It will not remove obstructions, but it tends to relieve the spasm of the neck of the bladder, hence allows escape of urine, after which the horse iwll probably show no more pain. We often hear a man telling that his horse was very sick from "stoppage of his water," that he gave him a dose of sweet nitre, after which the animal urinated and then got all right. The fact is, the nitre relieved the spasm of the neck of the bladder, the horse became "all right"—and then urinated. If there be an occlusion of the urinary passage from other causes than that mentioned, the treatment named would make matters worse, because the drug, as well as being an anti-spasmodic, increases the activity of the kidneys, but does not remove obstruction; hence it causes an increased flow of urine into the bladder, but does not remove the obstruction that prevents its escape from the organ.

During the paroxysms of colic the pulse becomes altered, as stated, the respirations are also accelerated, and in some cases perspiration is profuse. During the intervals of ease these functions become normal. The symptoms, while usually short, are generally more violent and alarming than those of more serious intestinal diseases.

Treatment—In many cases a spontaneous cure takes place without treatment in from a few minutes to an hour or two, but it is wise to administer an anti-spasmodic in all cases. The following is a favorite and effective colic drench: 1½ fluid ozs. each of laudanum, tincture of belladonna, and sweet spirits of nitre, in a pint of cold water. This giving the dose for an ordinary sized horse, young, small, or very large animals require less or more according to size. Instead of this we may give 1 or 2 ozs. of chloral hydrate or 2 to 3 fluid drs. of chloroform in a pint of water. The patient should be placed in a roomy, comfortable box-stall or paddock, and carefully watched to prevent him from hurting himself or becoming fast. It is good practice to give a rectal injection of soapy, warm water. If relief be not apparent in an hour the dose should be repeated. If the first mentioned drench be used the laudanum must be omitted.

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as it tends to constipation. After this the dose may be repeated every two hours as indicated by the symptoms. If relief be not noticed in at most four hours we may suspect a more serious condition than ordinary spasmodic colic, or that the disease has become complicated. When practicable, the services of a veterinarian should then be procured. If professional assistance is not available, the owner should repeat the doses as noted. If bloating occurs, the patient should be treated as for flatulent colic, a discussion of which will follow.

It is good practice to administer a laxative of 5 to 7 drs. of aloes and 2 drs. ginger or 1 to 1½ pts. of raw linseed oil after the acute symptoms have passed.—J. Hugo Reed, V. S.

FLATULENT COLIC

A disease commonly called "Flatulent Colic" is quite common in horses. It is a form of indigestion, and in the early stages the symptoms strongly simulate those in acute indigestion.

Causes.—This condition is much more serious than spasmodic colic although the causes are much the same, viz., changes of food or water, overfeeding (especially after a long fast or when overheated), food of poor quality, severe exercise too soon after a hearty meal, a weakness, or partial inactivity, of the digestive glands, etc., food that ferments readily, as green clover, turnip tops, etc., especially if wet or frosted is a fertile cause. It sometimes occurs during the progress of other diseases, indicating a very grave condition. This, and in fact, mostly all intestinal diseases, occasionally appear without recognizable cause, due, no doubt, to a non-active state of the digestive glands.

Symptoms.—The symptoms do not generally appear so suddenly, nor yet are they so violent and alarming to teh ordinary observer, as those of spasmodic colic. The animal becomes dull, uneasy, stamps his feet, probably kicks at his abdomen, looks around at his flanks, paws, lies down carefully, may roll, rise again and continue to show uneasiness. The pulse is increased ni both force and frequency and respiration is often more or less labored. The symptoms of pain are practically constant, but vary in intensity. In a short time after the first symptoms are shown there will be noticed a more or less well-marked fulness of the abdomen (bloating) more marked on the right side just in front of the point of the hip. The visible mucous membranes become injected, the pulse continues to increase in frequency, but usually gradually loses force, and the respiration will be labored in proportion to the degree of distention of the abdomen with gas. The extremities are usually cold, and there is often a twitching of the muscles. If relief be not effected, the symptoms continue to increase in severity, bloating becomes excessive, and death takes place from rupture of the intestine, suffocation or absorption of gases into the circulation.

Treatment.—Place in a roomy boxstall or a paddock. Agents which combine with, or neutralize, the gases are indicated. For this purpose there is probably nothing that can be safely given by the stomach that acts as well as oil of turpentine (commonly called spirits of turpentine) and raw linseed oil, 1 to 3 fluid ozs. of the former in one-half to one pint of the latter (according to the size of the patient). If necessary, the dose may be repeated in an hour, but if given the third time new milk should be substituted for the oil. When this medicine is not quickly obtainable 2 to 3 ozs. of bi-carbonate of soda (baking soda) dissolved in water should be given. The patient should be well bedded and kept as comfortable as possible. A couple of gallons of warm soapy water should be injected into the rectum occasionally. If the pain be severe it should be combatted by the administration of 1 to 2 ozs. of chloral hydrate dissolved in a little water, or 1½ fluid ozs. each of tincture of belladonna and sweet spirits of nitre in a pint of cold water as a drench. This anodyne may be repeated about every two hours as needed. If bloating becomes excessive, care should be taken to prevent the patient from throwing himself down violently, as there is danger of this causing rupture of the distended intestine. If the bloating becomes so marked that there is imminent danger of suffocation or rupture, the patient should be punctured on the right side at the most prominent part between the point of the hip and the last rib to allow the immediate escape of gas. This operation, if skilfully performed with a trocar and canula (an instrument especially designed for the purpose), has proved successful in most cases, but the use of knives and other crude instruments has not usually been followed by satisfactory results.

In a case of this nature when the administration of the drugs mentioned does not give relief in at most two hours, it is better, where possible, to secure the services of a veterinarian, but where this cannot be done the attendant can only follow the above treatment to the best of his ability.—J. Hugo Reed, V. S.

INTUSSUSCEPTION

Intussusception is a name given to a form of indigestion which is caused by a portion of the intestine (either small or large) slipping into the portion immediately behind it, like the drawing of a finger of a glove into itself. As a result of this, the normal course of the intestine is interrupted. In consequence nothing can pass through, the action in the bowel is checked and the circulation of the blood through the bowel involved is also checked. While this practically an incurable condition, it may be wise to draw attention to its occurrence and symptoms. Recovery of cases where this condition has been suspected has occurred, the imprisoned portion (if the condition really existed) having been released during the struggles of the animal, while other cases have recovered by a rapid sloughing of the imprisoned portion, and union taking place between the several ends, the sloughed portion passing off with the faeces.

Treatment, other than an operation, has no action in rectifying the trouble, and the veterinarian does not operate in such cases, as it is practically impossible to make a correct diagnosis or to exactly locate the lesion, and, though such were possible he cannot provide surroundings where antiseptic measures can be observed to a sufficient degree to afford probable favorable results.

Symptoms cannot be said to be diagnostic, but are a combination of those observed in other diseases of the di-

(Continued on page 124)

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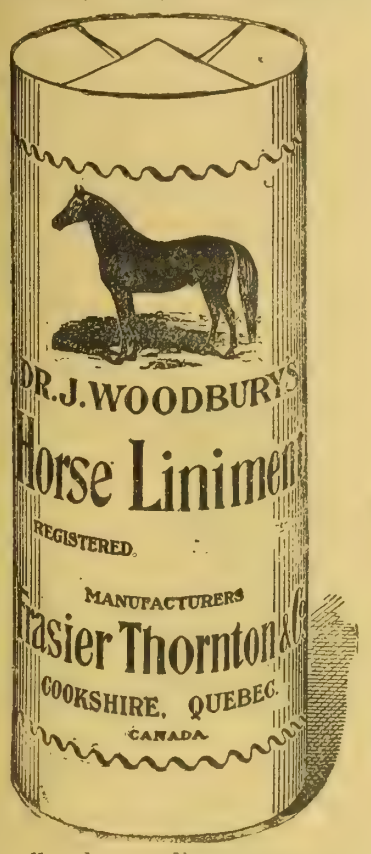

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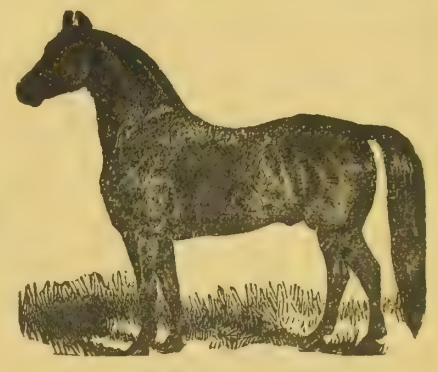

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POULTRY.

CEMENT AND WOODEN HEN HOUSE FLOORS

Poutry-house floors are usually made of either earth, wood, or cement. Where the soil is light and well drained the use of earth floors give economy in construction and investment, and a more comfortable house. Where the drainage is not good, and on heavy soils, especially those containing much clay, floors of wood or cement are generally preferred.

Each kind of floor has its advantages and disadvantages, consideration of which will often lead a poultry keeper to use a different kind of floor from that most generally constructed in his locality.

Earth Floors

A floor of earth needs to be renewed at least once a year. If the droppings that fall upon the floor are carefully removed at frequent, regular intervals, much of the earth is removed with them. If the regular cleaning of the floor is superficial, the earth of the floor to a depth of several inches becomes so mixed with droppings that its condition is very insanitary.

When the poultry keeper has a garden, the manure obtained by removing the earth floor of the poultry house will compensate for the labor of renewing the floor, and the new earth required can be taken from a convenient spot on his own land. When the poultry keeper must pay some one else to take away the old earth and bring in new, the cost will in a few years exceed the cost of a cement floor.

Cement Floors

The principal fault of a cement floor is that it is likely to be cold and damp. These conditions may be corrected by covering the floor to a depth of an inch or two with dry earth or sand, using over this scratching litter of straw or wood shavings. Floors so treated require as much routine work to keep them in good order as earth floors, but the supply of clean earth required is much less and the work of annual renovation is eliminated.

Floors of wood are not now much used in poultry houses except when the space under the floor is high enough to be occupied by poultry. A wooden floor close to the ground soon rots, while any space under a floor not high enough to be used for poultry makes a harbor for rats and other vermin.

The wooden floor of a poultry house should have a light coating of dry earth, sand, chaff, or similar material to prevent the droppings of the birds from sticking to and saturating the boards.

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FOOD AND FEEDING

More food is needed by hens in wet weather than in dry, and in cold than in hot. In wet and cold weather combined more still is required. Give plenty, but not too much.

When food is left lying about it gets dirtied and entices sparrows, mice and other vermin.

If the hens are in good condition for laying, they will thrive much better if compelled to come off the roost in the morning and scratch for their breakfast than if they walk up to a feed trough and fill their crops.

Excessive feeding of middlings is apt to produce small-sized eggs. This, no doubt, si caused by the fact that middlings generally increases egg production.

The feeding question is one which each individual poultry raiser must largely decide for himself.

Until the fowls get used to it, new corn should be fed sparingly. Too much will prove disastrous.

Feed at regular hours. Irregular feeding frequently causes derangement of the digestive organs, resulting in impaired health and fewer eggs.

Very little barley is fed to poultry in this country, although it is a splendid food, and should be more largely used in making up a balanced ration.

Eggs are made from the food consumed by the hens, and unless they are supplied with foods containing the elements that enter into the formation of the eggs, the supply will be very limited. The food must be clean, sound and wholesome, and the water pure, and fresh.

Vigorous exercise is quite as important as proper food.

A liberal amount of wheat bran should always be used in the mash for bulk, and gradually decreased with a larger amount of cornmeal as the time for marketing approaches.

Barley, either whole or ground, is very good. It has rather too much hull, but otherwise it is a satisfactory food. It is considered by many to be next to wheat in point of value.

ROUP IN TURKEY

Roup is one of the most fatal diseases pertaining to fowls. When this disease is found, the affected birds should be killed at once and burned or the well ones taken away to other quarters, otherwise the entire flock is in danger.

The symptoms, at first, are like those of severe catarrh, but the discharge from the nostrils is thick, opaque, and of a peculiar and offensive odor. Froth appears at the inner corners of the eyes, the lids swell, and often the eyes are entirely closed; the sides of the face become much swollen, and the bird rapidly loses strength and dies.

The fowls must have warm, dry quarters, and soft, stimulating food. As soon as possible give a small fowl a teaspoonful, or a large one a tablespoonful, of castor oil. The nostrils should be syringed, by inserting a small syringe in the slit of the roof of the mouth, with one part of chloride of soda to two parts of water. Three or four hours after the oil has been given, having divided the following into thirty doses, give one, two or three times a day:

One-half ounce balsam copaiba.
One-quarter ounce liquorice powder.
One-half drachm piperine.

Enclose each dose in a little gelatine, and administer as directed. If the fowl continues to get worse, kill at once and burn the carcass.

SALT FOR POULTRY

No dairyman would think of letting his cattle go without a regular supply of salt, but few poultry breeders give their flocks any salt, let alone a regular supply. If salt is needed by cattle it will help hens.

For fowls the finer grades of salt such as table or dairy salt sold for large animals is likely to give some individul bird too much. When moist mash is fed the salt may be mixed with it. about a tablespoonful to each large bucket—fourteen quarts—of mash. When dry mash is fed the salt may be mixed with the meal. using a heaping cup of mash. In adding the salt, sprinkle it evenly over the meal and then mix thoroughly. It is, of course, necessary to use judgment as to the quantity of salt needed. as a great deal depends upon the strength of the salt and what other feeds are fed; some beef scrap, for instance, is very salty, thus less salt would be required in the mash.

Fowls. unlike cattle. cannot be allowed a salt supply to eat at will. as they will invariably eat such quantities as to cause salt poisoning and death.

WHITE DIARRHOEA AMONG POULTRY

I have lost quite a number of hens. they sit around and won't eat, then die. Their excrements are white and green. H. W.

There is no known method of treat-

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ing poultry affected with white diarrhoea. To keep the disease out of the flock one should never set eggs from hens that had white diarrhoea when they were chicks. Eggs for setting should not be sold fro ma flock where this disease has been present during the former season. Several remedies have been recommended but cases of guaranteed cures have not been reported. Care should be taken to isolate the sickly looking birds from the healthier ones and eliminate the possibility of infection.

The use of sour milk has beeen found very beneficial. Clean all the coops, feeding troughs and youltry house fittings, and then thoroughly spray with chloride of lime dissolved in water.

REMEDY FOR FEATHER PULLING

Temptation to start feather pulling is frequently furnished by some few hens or chicks, who, not having feathered up so quickly as the others, expose numerous juicy quills that attract the idle ones. If the flock is closely watched at such times, and means are taken to stop the habit at its beginning, little trouble need result. Any fowls that show signs of having had feathers plucked should be caught and the surfaces of exposed quills greased with lard mixed with extract of aloes in the proportion of one teaspoonful of extract of aloes to a cup of lard. Birds picking at surfaces thus treated do not find the taste to their liking and rarely try it more than once.

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TEST YOUR THERMOMETER

It is not an uncommon occurrence for a nentire setting of eggs to be ruined because of a faulty thermometer. While fairly accurate the average incubator thermometer is not a high-grade instrument and is very apt to register incorrectly after a season or so of service. To test the instrument it is necessary to procure a good thermometer for comparative readings.

Fill some small vessel with luke warm water and immerse both instruments in it, moving them slowly about all the time. Remove from the water in about a minute's time and compare readings. If there is a difference of not more than half a degree the error can be noted and the thermometer returned to the incubator. If the variation is greater the best plan will be to purchase a new instrument. Both old and new thermometers should be tested before the incubators are started.

LIVER TROUBLLE OR TUBECULOSIS

"Would like to know what is the matter with my young fowl. When I kill one I find yellow spots on the liver. Are they good to eat? They look fine and their combs seem to be in good condition. I bought eggs from different stock for hatching last spring and sold off all my old hens thinking that perhaps I would get rid of these troubles in that way, but the young ones have the same trouble. Please tell me what to do about it."

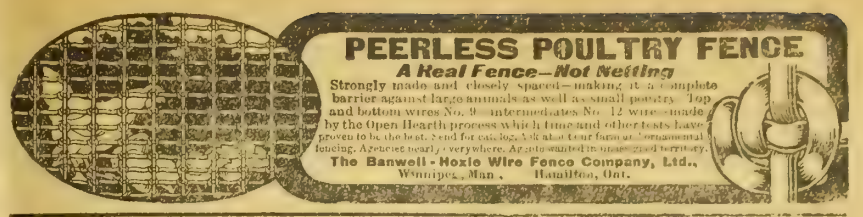
The yellow spots which you find on the livers of your chickens may indicate simply liver trouble, or if the spots extend into the liver forming hard, yellowish bunches, it is likely to indicate tuberculosis. If it is tuberculosis, merely killing the hens last spring and allowing the chickens to run on the disinfected ground would not be much protection against the disease. If it is tuberculosis the chickens are not fit to eat, but if it is simply liver thouble there will be no danger in eating them, though we would not want to eat the liver, and it would not be advisable to sell any on the market. Tuberculosis reduces the flesh of the fowls sooner or later and that may be taken as the proof in this case. Your best plan is to get rid of the whole flock. Plow the poultry yard, clean and disinfect all houses, coops, roosts and feeding troughs, then lime wash and start anew in the spring time with hatchings taken from assured flocks free from liver cr tubercular diseases.

BUMBLE FOOT AMONG POULTRY

What will cure bumble foot that has appeared amongst my hens? Are they fit to eat?

Mumble foot is another name for abscess of the foot and it can be cured as a local abscess anywhere would be cured, that is by freely opening it with a clean blade and allowing it to drain and heal. Not all cases of bumble foot need treatment, as they seem to give the fowl little inconvenience, and the others may be so deeply seated as to require more surgical interference and subsequent care than the fowl is worth. If the fowl is in good health otherwise, ther eis no reason why it sould not be eaten.

I know of nothing to do for the case of "leg weakness" except to place the affected fowl in comfortable quarters and feeed her lightly until recovery or it is seen that she probably will not recover. While the cause of this condition is obscure, it will be perfectly rational treatment to administer a physic and repeat once or twice if you care to repeat the trouble with the bird. A half-grain tablet of calomel, followed in an hour or two by a teaspoonful or more of castor oil will be good "on general principles."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HENS WITH BLACK COMBS ARE DYING

Some of my hens stand around, are dull for a few days then die. Their combs get black. What is the cause and give a cure.

Enlarged liver due to overfeeding of rich food and lack of green food, is probably what your fowls are suffering from. The best thing for you to do is to remove the causes, that is, give them an entire change of feed, plenty of freedom, fresh air, dry quarters, grit, pure water, skimmilk, plenty of green feed, and change your mash and grain feed. There is no medicine that will help.

October and November are the months of great egg scarcity. This is because the layers need all their vital energy to complete the moult and are resting from egg production then. Pullets are just beginning to lay if well matured. At this season eggs should command the highest market price. Our advice is to feed liberally during the moulting crisis and provide everything needed for the comfort and health of the flock.

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WOMEN'S INSTITUTE SECTION

This section of the Maritime Farmer will be devoted to the interests of the Women's Institutes of New Brunswick. We respectfully solicit contributions from all branches, touching upon matters of general interest. We wish the members of all branches of the Women's Institute to feel that the Maritime Farmer wishes to fully assist them. The Maritime Farmer is the official organ of the Women's Institute of New Brunswick. We would suggest that YOUR BRANCH name a press committee, so that news from YOUR BRANCH may reach other branches.

It was only a glad "Good Morning"
As she passed along the way,
But it spread the morning's glory
Over the livelong day.

SADIE GOES TO HEAVEN

(By Diana Burnet)

I take it that heaven is a necessary hypothesis of all religions. I have heard of religions that could do without hell, but never one that could afford to give up heaven. Exactly what kind of a heaven was prescribed for little Sadie Bernowitz I am not sure. I suspect that it was quite different from my own type of heaven, and am rather sorry for that. I think that we would all do well to share the same heaven, inasmuch as we are compelled to share the same world. But I dare say the idea is too conservative to appeal to most human beings.

Sadie Bernowitz is a friend of mine; this despite a certain discrepancy in our ages—and our hereafters. I met her in West Brodaway one Sunday afternoon in October. She was sliding down a highly polished door-step, and as I passed along the sidewalk she struck me fairly in the chest. There were mutual apologies and explanations and we became acquainted.

"I have six teeth and a lame dog," said Sadie, by way of introductory conversation. I replied that I had nothing but an old silver quarter, which for the life of me I could not get spent. So we adjourned to a dejected looking drug store, where Sadie consumed a pale pink something that I trust was ice-cream. The lame dog whose name was George Washington Square, sat near by and trembled ecstatically at every mouthful that Sadie took. I have seldom seen such disinterested affection. Nor was Sadie lacking in reciprocal devotion. Instead of devouring to the last crumb the shrinking small cake that accompanied her order, she deliberately broke it in two and gave half to George Washington Suarqe, who was like to die of happiness.

"Do they have dogs in heaven?" asked Sadie with a fond glance at her chance treasure.

I replied that it was a delicate question, which had not yet been fully decided.

"You can bring 'em in a drug-store," observed Sadie hopefully.

"Quite true," I replied. "But heaven may be somewhat more restricted.

"I'd like to go to heaven," said Sadie, in the enthralled tone of the prospective traveller. "But I wouldn't go unless I could bring George Washington Square."

From the contemplation of such high ethical issues we turned to matters more temporal. I learned that Sadie was the eldest of five children whom fate had visited on Herman Bernowitz, a merchant peddler of the neighborhood, and his wife Rebecca. It was not particularly an intelligent distribution of infant life, for the Bernowitz home consisted of only two rooms and a fire-escape. But since the question of human birth is clearly the Almighty's business, we will not dwell too long upon it here. Only the Almighty (and possibly Mrs. Bernowitz) knows how many times seven goes into two.

Mrs. Bernowitz was a large billowing woman who scrubbed floors from five to eight every morning, and from five to seven every evening. The rest of the day she spent in solving the problem of seven into two. Consequently there was little time for that esthetic practice known as "beautifying the home." One of the great disadvantages of poverty is that it produces ugliness, which is another name for hell. But if we go a step further we perceive that poverty may also produce an interest in heaven. Sadie Bernowitz, for instance, was passionately interested in heaven. She wanted to go there, in precisely the same way that an artist wants to go to Spain. It was this desire that led her into the adventure of the eleemosynary hamper.

In order to explain the hamper it will be necessary to point out that West Broadway is, in a sense, the continuation of Fifth Avenue. This coincidence, which is more ethical than geographical, had impressed itself deeply upo nthe social consciousness of a certain great lady whose name I shall not mention. The mere fact that she possessed a social consciousness is sufficient to denote her high station. Only the most fashionable ladies can afford to have a social consciousness.

The great lady in question had felt the responsibility of West Broadway very keenly. She had entered into an arrangement with the local Rescue Mission whereby the poor of that vicinity should be provided with the discarded raiment of Fifth Avenue. It was a very beautiful arrangement.

Regularly, then, from week to week, there appeared at the Mission a large hamper whose advent was the chief excitement of the neighborhood. Crowds gathered to see it unloaded from the great lady's motor, and to cheer the two men in purple who carried it into the Mission. The two men in purple were exquisite in their parts. They bore the hamper with solemn groans, and just the right amount of disdain in their eyes. It is hard to say whether West Broadway was more interested in the Hamper per se, or as a sort of spectacle. Especially enjoyable to the onlookers was the exquisite disdain of the two men in purple.

To Sadie Bernowitz the event thus described was but proof positive of the existence of a diviner universe. She had made up her mind long since that the hamper came from heaven, which belief she had confided to George Washington Square. "Those men are angels," she had said, pointing to the dignitaries in purple, "and that"—indicating the motor—"is God's delivery wagon."

It was on a morning late in October that little Sadie met the hamper, so to speak, in confidential circumstances. The huge wicker receptacle was standing empty in the narrow, dark hall of the Mission, awaiting the two men in purple, its lock unfastened, its straps hanging loosely at its sides. Immediately Sadie felt herself to be confronted by unusual oportunity. Her heart began to beat very fast. She darted into the little hall, dragging George Washington Square after her.

There she hesitated, half expecting the hamper to give forth some hollow alarm. But no sound issued from the sacred trunk. Sadie crept forward, grasped the lid, opened it. Five seconds later a very frightened, but determined girl and a very astonished but trustful lame dog were seated side by side in the hamper, with the top pulled down over their heads and the world quite shut away.

Scarcely had they arranged themselves with comfort when the honk of a motor-car was heard just outside the Mission door.

"It's the angels," thought Sadie, and hugged George Washinkton Square the more tightly . Through a chink in the wicker she saw two pairs of purple trouser-legs enter the hall. Then she heard masculine voices fraught with disdain.

"Take 'old, Enry," said the lrst angel "an' we'll 'eave the ole barsket into the car."

"Take 'old yourself," retorted the second angel. "D'y' think I'm a bloomin' hexpressman?"

There was a brief pause, devoted, upon the part of the angels, to divers preparatory groans; then Sadie felt herself lifted bodily into midair.

"Seems 'eavier than usual," remarked the first angel.

"Wot is it is?" replied the second. "Wot if it is? Oo are we to know 'eavy from light? Get the bloomin' barsket 'ome, that's what I s'y!"

Followed more angelic groans, and finally a definite conclusive bump as the Hamper was tossed into the car. Shortly thereafter the motor began to whir, and the celestial chariot moved forward toward its exalted destination.

"We're goin' to heaven, George Washington Square," cried Sadie as she crouched upon the floor of the hamper. "That's where we're goin'." George Washington Square gave a short bark of pleasure and licked his mistress's face in token of eternal fealty.

The journey was not a long one—was far shorter, indeed, than the ordinary human would have supposed. The car stopped; the angels seized upon the hmper, bore it off with further gruntings, nd deposited it at last in a Place of Darkness.

Sadie waited until she was quite sure that they had gone and then cautiously raised the cover of the hamper. There was a sort of twilight all about her. Peering out, she found that she was in a cavernous chamber of receding walls and crawling pipes that led to an upright cylindrical contrivance of sinister aspect. This contrivanace, terrible to relate, was aglow with red-hot coals, and gave off a noticeable heat. Moreover one could see through the open mouth of it sulfurous flames leaping fantastic. For one awful instant little Sadie thought that she had gone to the wrong place, that all was lost. But suddenly, at the far end of the room she perceived a flight of stairs lifting hopefully upward, and her optimism returned.

"I always knew there would be stairs!" said Sadie, and taking George Washington Square in her arms, she made for the celestial ascent.

At the top, very naturally, was a door, which she opened. A narrow passageway confronted her. She crept through it on tiptoe, until she came to another door flanked by a remarkable flowered screen—

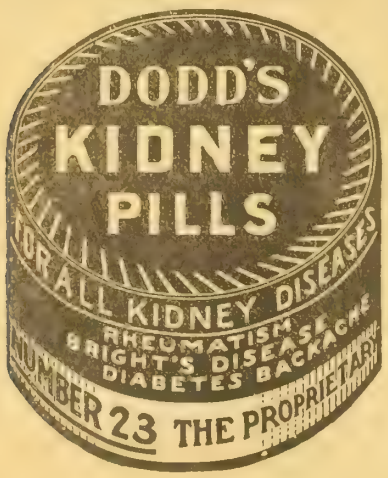
"Oh!" exclaimed Sadie. "Oh! oh; We're here!"

A room more vast than any earthly room need possibly have been, lay before her. From its ceiling depended a gigantic cluster of—could they have been icicles?—and upon its walls were hung wonderous draperies, with strange pictures woven into their hearts. The Bernowitz apartment, even including the fire-escape, would have fitted into this one room thric over. But who are we to draw comparisons between heaven and earth?

In the centre of the room stood a lustrous table, and upon the table was a silver dish, filled to overflowing with beautiful fruits: red apples, yellow bananas, golden oranges, huge bunches of purple grapes. Sadie walked slowly forward and selected an apple from the dish. Then she looked at George Washington Square, who wagged his tail encouragingly. So Sadie began to eat the apple.

It was not until she had reached the last few mouthfuls that she perceived the embarrassment of her choice. What should she do with the core? Obviously she could not put it back into the dish, and one of the disadvantages of heaven seemed to be a total lack of rubbish heaps.

At this critical moment the sound of



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footsteps fell upon her ears. She glanced despairingly about the immaculate room and then popped the apple core into the faithful jaws of George Washington Square.

"You've et oilcloth and baseballs," whispered Sadie apoletically, and turned to see a gorgeous man-creature regarding her from the opposite end of the chamber.

He was very evidently an angel, and rather a high type of angel, too. One saw at a glance that he outranked the two men in purple. He had on the tallest white collar that ever persecuted saintly chin. His coat, moreover, was of awesome pattern. It began with a single button high up on his bellying chest, and ended in a long backward sweep that reached almost to his heels.

Suddenly the stout angel opened its mouth and looking straight at Sadie, said: "How do I know you're real? It might be the brandy I took for breakfast!"

He shut his eyes very tight, opened them very wide, and then thrusting his head forward like a turtle, stared at the small intruder.

"Who are you?" asked the angel. "And where do you come from?"

"I'm Sadie Bernowitz," replied the child, "and I come from Washington Square South. Do you allow dogs?"

"Dogs" said the other, loosening his collar with a fat finger. "Dogs! Lord bless you, yes! Nothing but dogs!"

"Then I'll stay forever and ever," declared Sadie, firmly.

The stout angel passed his hand acros his brow. "I'd better be calling one o' the maids," he muttered. "'Tis no matter for a man to trifle with."

He disappeared, mumbling imprecations against the brandy. Sadie stood gazing anxiously after him. Suppose they took dogs exclusively, and did not take people? She decided to say that she had been invited.

A female angel dressed all in white, came abruptly into the room, saw Sadie and George Washington Square and stopped short.

"The Saints preserve us!" said she. "What are ye doin' here, little girl?"

"I've come to stay," replied Sadie, and added boldly, "I was asked!"

The white angel seemed nonplused. Then a faint light glimmered upon her not too intelligent countenance.

"Sure, ye must be one of the ma'am's fancies," she said. "Come into the reception room, Miss, and I'll call the housekeeper."

So Sadie followed the white angel into another great chamber, and she sat upon a couch that felt as soft as clouds, while George Washington Square rolled joyously upon the thick rug at her feet.

Soon a third angel appeared, a very grand silken angel who rustled as she walked, and who look appraisingly at Sadie through a pair of gold rimmed eye glasses.

"You will need a bath," she said decisively. "And some new clothes. I really should have been told that you were coming. Good gracious! What animal is that?"

Her horrified glance had fallen upon George Washington Square, who yawned to conceal his embarrassment. Sadie rose to her pet's defense.

"He isn't an animal," said Sadie he's a dog."

"Indeed!"

"He's allowed here, too," continued Sadie, who was determined to stand upon her rights.

"Dear, dear," said the silken angel, "I really should have been told."

Then the silken angel summoned the stout man angel and gave him a number of instructions to which he responded by swaying bacward and forward in a sort of stiff unjointed bow. The man angel could not bend at the waist because if his stomach, which was distinctly in theway; nor could he nod his head because of the high collar. So he bowed all over, as it were, and waddled ponderously away.

After which the silken angel and Sadie and George Washington Square went through a wilderness of rooms until they came to a door in the wall. This door the angel opened, disclosing a large cupboard fitted with plush seats and two full-length mirors. Into the cupboard they got, all three, and the angel pushed a button, whereupon the cupboard began slowly to ascend. Sadie held her breath and clutched George Washington Square's ears for moral support. Were there heavens upon heavens?

They had risen but a short distance, however, when the angel pushed another button; the cupboard stopped, the door slid back, and they emerged upon a new plane of adventure.

"I suppose that I had better give you the pink room," said the silken angel, in her brisk way. "This way, child."

It was inevitable, perhaps, that heaven sould contain a pink room, but it was no less miraculous for that. Little Sadie stood entranced up the threshold.

"Oh," she cried, "isn't it beautiful!"

"It ought to be," said the angel briskly, it was done by Baumgarten."

Ten minutes later Sadie was sitting in a dazzling white bathtub. She thought it a wonderful sensation. Never before had she looked upon ablutionary exercise as a pleasure. Now, however, it seemed a positive delight. The idea of devoting an entire room to one's personal cleanliness was so extravagant as to appeal to her feminine nature. She decided, wisely enough, that heaven was simply a place where on e found happiness in old experience.

When she had been scrubbed from head to toe, and sprayed with an ineffable warm spray, and dried with a voluminous soft towel, the silken angel wrapped her in a snow-white sheet and put her to bed.

"I've ordered some new clothes for you," said the angel. "Of course you can't wear the old ones. They're hardly sanitary."

"Yes, ma'am," said Sadie, who hardly dared breath lest she be whirled out of this amazing realm of illusion.

The silken angel rustled away, and Sadie sat very stiff and straight among her pillows, awaiting fresh wonders. She had not waited long when the white angel appeared with a small trayful of steaming and savory dishes. At the same time a divine aroma permeated the pink room, so that George Washington Square became tremulous with emotion, and performed his one trick, which was to lie down and roll over as furiously as possible.

"Is this all mine?" asked Sadie, gazing wide-eyed at the tray, which the white anagel had deposited at her bedside.

"Yes, Miss. But ye can leave what ye don't want."

"Oh," said Sadie hastily, "I won't leave anything."

With which heroic announcement she advanced to the attack, ably seconded by George Washington Square, who stood upon his hind legs and begged for titbits. And if he so far forgot himself as to snatch a morsel or two from the tray, what then? A dog that has been accustomed to dine on baseballs can not be expected to retain his manners in the presence of such heavenly delicacies.

When the last crumb had disappeared, little Sadie lay back in her pillows with a contented sigh. She felt warm, and comfortable and deliciously drowsy. So she closed her eyes, just for a moment.

She was awakened by the sound of a brisk, firm voice, and looking up, saw the silken anagel bending over her. Upon a chair nearby reposed a bewildering heap of packages.

"Your clothes have come," said the angel.

"Oh," exclaimed Sadie, and flinging aside the covers, leaped out of bed.

The angel smiled and began to untie the packages, and in a short time Sadie was transformed from a small tatterdemalion of the slums to something approaching divinity. So complete was the change, indeed, that George Washington Square grew apprehensive, and crawled under the bed to ruminate upon the alterations.

"We'll go dow nnow," said the silken angel.

Taking Sadie's hand, she led the child down a broad stairway of highly polished wood, and into one of those tremendous rooms of which heaven seemed to be composed. At the far end of this room sat a woman, drinking tea. Beside her the stout man angel bent at great risk above a silver kettle, and upon three cushions at her feet sat three dogs, of a diminutive fluffy white breed. It was apparent that she was a very great personage—probably the queen of heaven.

"Whatever you do," whispered the silken angel, as she and Sadie entered the reception chamber, "don't forget to admire the dogs!"

Then the silken angel dropped Sadie's hand, and hurrying forward, spoke a few words to the queen of heaven. The latter raised her imperial head, and frowned impatiently.

"But, my dear Higgins," she said, "I have taken no child from the slums."

The poor practical angel fell back a step and pressed her hands to her bosom.

"Could there be a mistake?" she gasped.

"I think it quite likely," replied the queen, in a weary voice, and tossed a tea cake to one of the dogs.

"I'm very sorry," stammered the angel. "I will send the child home at once."

"Wait," said the queen. "She seems to be rather a pretty child. I had no idea the poor dressed their children so nicely. Come here, little girl."

Sadie approached with diffident steps yet sustained by the thought of her pink sash and shiing slippers.

"What is your name?" asked the queen.

"Sadie Berrowitz," was the faint reply.

WAS WEAK
ALL RUN DOWN
FROM HEART and NERVES.

Mrs. Percy G. McLaughlin, Lawrence Station, N.B., writes:—"I am writing to tell you that I have used Milburn's Heart and Nerve Pills, and find since I commenced to use them that I feel altogether a different woman. I was weak and run down from my heart and nerves, and was recommended to try your pills by Mr. James H. Scott who has taken them, and says if it were not for them he could not live. When I finish the box I am now taking I will be completely cured. I wish to thank you for putting up such a wonderful medicine, and I will gladly recommend it to one and all."

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LET a woman ease your suffering. I want you to write, and let me tell you of my simple method of home treatment, send you ten days' free trial, postpaid, and put you in touch with women in Canada who will gladly tell what my method has done for them.

A MESSAGE TO WOMEN!!

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me to-day. Address:
Mrs. M. Summers, Box 309 Windsor, Ont.

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Mrs. James Mack, Trenton, Ont., writes:—"I suffered for several months with a bad cold. Some friends told me about Dr. Wood's Norway Pine Syrup, and of the benefit it was to them. Before I had used two bottles I could get some rest, which I could not do before. I had tried everything, but "Dr. Wood's" was the only thing that gave me any relief.

My husband suffered terribly from bronchitis, and did not know whether he was going to recover or not. At my druggist's, Mr. J. H. Dickey, I was advised to try your syrup, which I did, and am so thankful that I cannot recommend it highly enough."

Many people on the first sign of the slight cold or cough neglect it, thinking, perhaps, it will disappear in a day or two, but the longer it is let run the worse it gets until it settles on the lungs and serious results ensue.

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This sterling remedy has been on the market for the past 30 years, and stands head and shoulders over all other cough remedies.

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"That is very dreadful," observed the queen. "But doubtless it can be changed. How did you get here?"

"I came in the hamper," said Sadie simply.

"The hamper!" exclaimed the queen and the angel in person.

Sadie nodded; and then feeling that it was high time to change the subject, remarked that she was very fond of dogs.

Immediately the queen sat upright in her chair. A gracious smile overspread he rfeatures. She looked brightly at the silken angel.

"Really," she said, "it might not be a bad idea to have her stay? What do you think?"

"I think that it would be very kind of you to keep her," replied the angel."

"Yes," said the queen, "and she would be such good company for the Poms. I have often thought that the poor dears needed a young person about the house—"

Suddenly she broke off, uttered a piercing shriek.

"Mercy on us!" cried the queen. "What is that?"

Sadie and the silken angel turned. The three Poms began to bark furiously. The stout man angel, who had been all this time bending over the kettle, straightened up so abruptly that he burst the button off his coat.

Through the door of the tea room of heaven came a yellow dog that limped as he walked. His tail was wagging in a pathetic attempt at friendliness. His whole attitude was one of humble apology. When he perceived the furore that his entrance had caused, he stopped and performed his one trick. After which he arose and looked at Sadie Bernowitz with an expression of love agonized by doubt.

"Oh, George Washington Square," cried Sadie. "I'd forgotten all about you." And catching the impossible canine up in her arms, she hugged him to her breast, regardless of the beautiful new dress.

The queen meanwhile had succeeded in quieting the Poms, who, one by one, turned their backs upon the plebian intruder.

"Hodgson!" said the queen.

The angel man stepped forward.

"Yes, Madam."

"Take that hideous little beast out of my sight! Have it removed at once from the house!"

"Very good, Madam."

But Sadie took a fresh grip on George Washington Square, and faced the advancing angel with flashing eyes.

"I won't let you touch him!" she cried. "I won't, I won't."

At this point the silken angel attempted to intervene. "Perhaps if I could talk to her—"she began, but the queen made a commanding gesture.

"Stop!" she said. "We will let the child decide. Little girl," she went on, turning to Sadie, "you may stay here if you wish to—but only on condition that you give up that dreadful dog!"

For a moment Sadie hesitated. A vision of the pink room passed her eyes. She thought of the bath and the luncheon and the new clithes. And then she thought of George Washington Square, lying warm and trustful in her arms, and the hot blood surged into her cheeks. She took three steps forward and looked boldly into the queen's eyes.

"I wouldn't give up George Washington Square," she said, in a low quiverin gvoice, "for all the heavens that ever was!"

There was a brief, tense silence. Then the queen spoke, in a tone of unfathomable ennui.

"Hodgson!"

"Yes, Madam."

"Order the motor at once, and have this child taken home."

"Very good, Madam."

The stout man angel bowed his peculiar bow, and departed. The queen sakn back into her chair. A weary sigh escaped her delicate lips.

"The ingratitude of the poor," she said, "is really too discouraging. I don't know what the world is coming to."

A few days later I met Sadie in her native habitat. She was sliding pensively down the doorstep railing, with George Washingto nSquare tucked under her arm.

"I have been to heaven," she said, as soon as we had exchanged greetings. "It wasn't so much. I would rather have an ice-cream soda."

She paused and looked down at George Washington Square.

"You can bring all kinds of dogs in a drug store," she said softly.

Hours afterwards I found myself still cogitating Sadie's bit of philosophy; and the more I cogitated the more I perceived that it was nothing but ridiculius sentimentalism. That is the great trouble with the poor. They are sentimental. They permit themselves to be enslaved by their emotions.

The rich are wiser. They do not have emotions.

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Note: Orders for Delano's Rheumatic Conqueror will be filled from their Canadian Laboratories without duty.

THE PROPER CARE DUE THE CHILD ATTENDING SCHOOL

The work in the fields and in the farm home has gone on during the summer in regular routine. The children have helped at every turn, for there are tasks on every farm to suit boys and girls of all ages.

But when the children are in school they must be released from a greater part of their work. It is the parents duty to send them off to school as comfortable and hapy as possible.

The garments must be kept ready for use, also handkerchiefs, overshoes, storm coats and umbrellas. Wet feet and damp clothing bring aches and colds, and the latter may be passed to every child in school. The mothers should be sure that the school room has been properly cleaned and disinfected. Send cloths along with the children and insist on their washing and drying their desks frequently. A small case containing a comb and one holding a drinking cup should be supplied every child in school. The cup should be brought home so it may be washed and scalded each day.

The school lunch is an important matter. It should always be packed in a besket or well ventilated box or bucket. Oiled paper is cheap and it keeps the food in good condition. Plain white paper napkins should be used, and after the lunch they can be used in place of a towel for drying the face and hands. Paper towels may be used or the small linen towels, sending a fresh one each day. Small custard cups ,glass jars with screw tops, and tart dishes aid greatly in putting up the school lunch.

The mother must not feel that just anything left over from breakfast will do for the lunch. Neither will a piece of soggy pie do that is left over from the day before. In th ecountry where institute members meet, mothers find much help in the exchange of ideas about such matters as preparing school lunches. It is surprising to some mothers how many new and attractive combniations may be used with materials always at hand without adding any cost and little effort.

Every mother knows the energy required to get the children off to school on time an in proper order. The ordeal is often accomplished only after much talking, perhaps scolding, and when it is over the mother is tired out completely. In order to eliminate all this confusion, one mother hung up a blackboard with the morning program outlined on it. It began with:

Arise promptly when the alarm clock rings.

Throw bed clothing over the foot of the bed.

Hang night clothes up to air.

Wash, brush teeth and dress.

Breakfast at 6.30.

Brush teeth again.

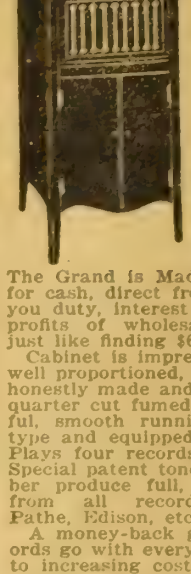
Brief work, play or study time.

Be ready to start at 8.00 o'clock.

If any special work was to be done in the morning by the childrei, a note was made on the blackboard the night before. The children then attended to this work while the mother prepared the lunches. With this sort of progam there need be no rush or confusion in the morning and each child learns to attend to his own personal needs.

When the children are ready to start, go with them to the door, just as you would were a guest leaving your home. Give them a cheerful goodbye and tell them you wish them a pleasant day. Then ,be ready to greet them when they return in the evening. Listen to their little problems. Enjoy hearing about their lessons. Be a good friend to your children and also to their teachers.

FACTORY TO HOME



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Each instrument well packed at factory and shipped as desired, F. O. B., Toronto. Remit by money order, postal note or cheque. Do not send money in envelope unless registered.

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KEEPING CLOTHES AT THEIR BEST

The young woman who lives in the country often envies her friend who lives in the town or city, the chic spick and span appearance of her garments. Perhaps the rural dweller attributes the fact that her own garments are often lacking in freshness or appearance to her having to ride several miles before reaching the place where she is to shop or call.

Weak, Emaciated Nervous and Pale
MRS. FRANK BERRY SAYS SHE FOUND A CURE IN DODD'S KIDNEY PILLS
New Brunswick Woman Tells How She Got Relief From Ills That Sprung From Sick Kidneys.

New Jersey, Northumberland Co., N. B., Nov. 10th. (Special.)—Mrs. Berry, a well-known resident of this place, is just one more added to the host of New Brunswick women who are singing the praises of Dodd's Kidney Pills.

"Dodd's Kidney Pills have cured me," Mrs. Berry says. "I was weak emaciated and nervous. I would start in my sleep, and had bad dreams and nightmare. I was unable to do my work, my eyes were dull and heavy and I was troubled with billiousness headaches and constipation. My hands and feet were always cold, my skin was dry and harsh, and my face was marked with pimples.

"I was always tired and weak and I knew I had bad kidneys. I took just three boxes of Dodd's Kidney Pills and they have done me a world of good. They have cured me."

Mrs. Berry went right to the root of her trouble and treated her kidneys by using Dodd's Kidney Pills. She got results. If you have any of Mrs. Berry's symptoms, and have not tried Dodd's Kidney Pills, ask your neighbors about them.

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ained from a suit that is kept in
ct condition by this simple atten-
Sometimes it is money well
t at the beginning of the season to
a garment to a professional clean-
When it comes home notice just
the work has been done and
where the creases in sleeves and sides are placed.

If a garment becomes damp through being out in the rain it should never be hung carelessly, but placed upon a hanger to dry, and if necessary pressed before being worn. The young woman who would be dainty at all times does not hang her clothing in the closet at once as soon as she takes it off, but puts it in a current of air to dry and thus to be freed from all odor of perspiration. Any small repairs necessary should be made before a piece of clothing is put away that it may be ready for instant use when needed.

This is really the secret of being well dressed with a few properly chosen clothes. In truth, it is much better judgment to have just enough and not a garment too much. Our war time economies will teach us that we do not need an extensive wardrobe to appear at our best at all times. In selecting clothink we will no longer buy what appeals to us wholly, but rather the coats, suits, waists, skirts, shoes, etc. which supplement what we have so that we can dress appropriately for street, church, an afternoon or evening function, or appear well at home. Sometimes people fail to round out their wardrobe carefully and so find that they have three or four articles suitable for dressy affairs and not a single street costume complete from head to foot.

True economy consists in making the best use of what we have. Proper care in the way of cleaning, pressing, laundering and prompt repair work will double the life and service of any garment. It is surprising what a lot of money may be hung in the form of out-of-style clothes if one is not careful. It is vastly more satisfactory to have sufficient to dress in the mode and thus to save waste and remodeling. A new collar, a slight alteration of the sleeves, or attention to length of the skirt will often bring a suit up to the moment and do away with the necessity of buying something new. The thoroughly attractive woman is the one who is never overdressed but always neatly and suitably attired, and who is gracious in her manner.

Aprons are great aids to a neat appearance and fancy or serviceable ones should be on hand at all taimes to saves one's dresses about the house. There are few people who can wear the same clothes about their work or about th ehouse which they wear upon the street and look neat, so the vogue of the house dress is a sensible one and a first aid to economy as well.

GENERAL RULES IN WASHING SILK

In order to lengthen the life of a garment we must keep it in good repair, and carefully cleaned and pressed.

Too much dependence has been placed on dry cleaning establishments in recent years. Much of this work can be done at home with little or no extra expense.

Silk must be considered a delicate fabric, because it is an animal fibre and like all animal fibres, is sensitive to heat ,friction and akalis. If rubbed hard the fibre is broken, and the shiny effect lost. It sould never be boiled. These three facts give us our general rules to be kept in mind in washing all silks.

1. Strong soaps destroy gloss and turn silk yellow.
2. Heat yellows silk.
3. Friction breaks fibres and so weakens the fabrics.
4. Squeezing should take the place of rubbing and wringing.
5. Too hot an iron yellows, stiffens and cracks silk. It is safer to cover the silk with cheesecloth when pressing.

In order to carry out the above rules we must wash our silk carefully in warm soapy water. Add enough soap solution to make a good suds.

Soap solution may be as follows: Shave two cakes of a mild white soap into two quarts of water. Bring this slowly to the boil, to dissolve the soap, and add some of the solution to the wash water.

Wash the garment by a squeezing motion, using clean water of the same temperature as fast as the water becomes soiled.

To remove persistent spots of soil, rub some soap solution directly on the spot with the palm of the hand.

Rinse in several warm waters, place between dry towels and put them through a loosely adjusted wringer or else squeeze the water out carefully.

When nearly dry, iron with a moderately hot iron until perfectly dry. If the iron is too hot, the silk will be stiff and will crack readily.

If silk is colored, it will be better to try a sample, and set the color first by adding salt or vinegar to the water until the color no longer runs.

Colored silks are best washed with soap bark in place of soap.

Recipe for Soap Bark

1 cup soap bark, 1 quart of water. Cook together twenty minutes. Strain and use like soap solution.

A new appearance, and yet not a stiffness may be given by the use of gum arabic in the last water before pressing. This often prevents a thin silk from looking washed.

THE EYES

Take as good care of your eyes as you would of your watch. You can buy a new watch, but you can't buy new eyes.

To Keep Your Eyes in Good Condition

Wear glasses if the doctor advises you to do so.

Don't use your eyes in a poor or flickering light.

Have the light shine on your work or book—not in your eyes.

Hold your work or book 14 or 15 inches from your eyes.

Don't rub your eyes with dirty hands.

Don't use other people's towels, wash cloths, handkerchiefs, etc.

Have sore eyes and granulated lids treated promptly, and as long as the doctor thinks necessary.

If you suspect eye trouble, see a doctor at once.

RED HIS RUPTURE

was badly ruptured while lifting a
several years ago. Doctors said
nly hope of cure was an operation.
ses did me no good. Finally I got
of something that quickly and
letely cured me. Years have pass-
d the rupture has never returned,
ugh I am doing hard work as a
nter. There was no operation, no
time, no trouble. I have nothing
ll, but will give full information
t how you may find a complete
without operation, if you write to
Eugene M. Pullen, Carpenter, 5543
ellus Avenue, Manasquan, N. J.
r cut out this notice and show it
y others who are ruptured—you
save a life or at least stop the
y of rupture and the worry and
r of an operation.

ig family game consisting
Checkers, Chess, Dom-
oes. New game of Au-
eurs, Fox and Geese, Nine
len Morris, The Spanish
rison and the game of Flir-
ation, all for 10 cts. Best
alue. 25 Big Silk remnants
r fancy work for 10c.
EN NOUVEAUTIE, St. Zacharie, Que
10c

FREE PRIZE PUZZLE
$4,500.00

In Cash has been Given Away FREE
also hundreds of Merchandise Prizes
$200.00 more IN CASH will be Given Away as follows

1st Prize, $50.00 in Cash. 2nd Prize, $40.00 in Cash
3rd Prize, $35.00 in Cash. 4th Prize, $25.00 in Cash
5th to 9th Prizes—Each $10.00 in Cash.
TOGETHER WITH MANY MERCHANDISE PRIZES

Herewith will be found the picture of an Aviator who has just dropped a bomb on a pile of Shells. At first glance the Airoplane and the Explosion appear to be all there is in the picture, but by careful study the faces of several soldiers will be found. There are 7 of them in all. Can you find them? It is no easy task but by patience and endurance can be accomplished.

You may win a cash prize by doing so. Many have done this as will be shown by the names and addresses which we will send you. If you find the faces mark each one with an X, cut out the picture and send it to us, together with a slip of paper on which you have written the words "I have found all the faces and marked them." Write these nine words plainly and neatly, as in case of ties, both writing and neatness are considered factors in this contest.

This may take up a little of your time but as TWO HUNDRED DOLLARS in cash and many merchandise prizes are given away, it is worth your time to take a little trouble over this matter. Remember all you have to do is to mark the faces, cut out the picture and write on a separate piece of paper the words, "I have found all the faces and marked them."

WE DO NOT ASK YOU TO SPEND ONE CENT OF YOUR MONEY IN ORDER TO ENTER THIS CONTEST

Send your answer at once; we will reply by Return Mail telling you whether your answer is correct or not, and we will send you a complete Prize List, together with the names and addresses of persons who have recently received over Four Thousand Five Hundred Dollars in Cash Prizes from us, and full particulars of a simple condition that must be fulfilled. (This condition does not involve the spending of any of your money.)

Winners of cash prizes in our late competitions will not be allowed to enter this Contest.

This Competition will be judged by two well known business men of undoubted integrity, who have no connection with this Company, whose decisions must be accepted as final.

Upon receipt of your reply we will send a complete list of the names and addresses of persons who have won $4,500.00 in Cash Prizes in recent contests held by the publishers of this advertisement. Although these persons are entirely unknown to us, they are our references. An enquiry from any one of them will bring the information that our contests are carried out with the utmost fairness and integrity. Your opportunity to win a good round sum is equally as good as that of anyone else, as all previous winners of cash prizes are debarred from entering this contest.

Send Your Reply Direct to
GOOD HOPE MANUFACTURING COMPANY
46 ST. ALEXANDER STREET, MONTREAL, CAN.

The Strain of Overwork

Your work is heavy, and sore, tired muscles are a common occurrence. Each time your back aches you blame it on your work, and just there the danger lies—for that pain in the back may not be from strain, as you suppose, but the forewarner of Kidney or Bladder trouble.

For your own interest, it is best to be particular and sure, as Kidney troubles inevitably pull you down and destroy your earning power.

Take note of these symptoms. Do you get dizzy and have repeated headaches, painful urination, brick dust deposits, or feel drowsy and, generally, good for nothing? If so, it is your kidneys that are bothering you—not work—and Gin Pills are necessary.

No person can work properly when they feel sick, tired and dizzy all the time. The more they try, the more energy they use up; and this only tends to aggravate their condition, as the kidneys are already tired out with their endeavors to relieve their congested state and perform their function properly.

The kidneys are d licate and vital organs; once they become affected through any cause—you suffer until the congestion is relieved and the cause remedied.

Don't let your system become run down. A box or two of Gin Pills will relieve those kidney complaints and restore your old-time health and strength.

Your health is priceless. Don't risk losing it. Keep your kidneys in order always by taking Gin Pills.

Sold everywhere for 50c a box Write for free sample to The National Drug & Chemical Co., of Canada, Limited, Toronto, Ont. 172

ARE YOU FORGETTING

Are you falling down in your overseas letter writing? Of course you are not forgetting the brother or the son, and you write to them regularly. But how about the boy who was only a friend of the family, the boy from your own home town, to whom you promised to write often and give him all the home news? Perhaps he didn't belong to anyone in particular, maybe he hasn't had any real home for years; then, again, perhaps his home was in the Old Country or down east or in the States, and he had just drifted and your home had become his home in late years. You were seized with a sort of enthusiasm for the work during the first days. There was plenty to say. But after a few months the novelty of writing wore off and now you write seldom—or never.

When the boy has first left his home town he needs all the letters he can get to ease the first heartaches, to relieve the first touches of home-sickness. But in the early days, too, he has new interests, new surroundings, new sights, all of which command his attention and help him to become contented with his new envirinment. After the first months have gone and he has entered the long period of routine and grind that must continue until the end, his longing to be back home is just as strong, and there is no new interest to dispel his melancholy. What could be more disheartening to a boy under the daily grind of modern warfare than to come, time after time, to the mail delvery and be told "Nothing for you." The boys need the letters more now than they ever did, and perhaps after reading the following extract from an Old Country paper, written by Vernon Bartlett, on "How the Letters Come," you will realize just what letters go through before they finally get to their destination, and just how eagerly the boys wait for your letters. Don't forget to write:

"Letters are great travelers For 3 cents you can send them all around the world—through the hot, glaring bazaars of Tangier or up the fever-haunted Congo River; along the Trans-Siberian Railway or into the frozen stillness of Alaska. They can go everywhere—even if they do sometimes loiter for 25 years or so on a journey of a hundred miles.

"But no letters 'see life' as do the letters that go to the front. If they escape the submarines they are heaped into filthy trucks; if they survive the jolting an drattling of the motor-lorry that takes them from the rail-head to divisional headquarters, they are thrown down in some field or farm yard in the gentle care of the Quarter-master; if they are not crumpled and sodden beyond repair after the long miles in the pouring rain from the regimental transport to the nearest point that horses go to the firing line, they are left by the roadside with the company's rations until a carrying party looms up in the darkness to take them up to the trenches half a mile away.

"It is then that the journey becomes exciting. The slightest rain turns the earth into two inches of mud, and the Post Corporal slides and staggers under the weight of the letter bag that bumps from side to side of the narrow winding communication trench.

Sometimes the Corporal may strike across country. As each Verey light shoots up in the sky, he crouches down in the mud, and bullets swish by or go 'pht' into the earth close at hand. Someone near the tail of the party is hit, and his two neighbors hand their loads over to others and carry the wounded man back to the dressing station on his waterproof sheet.

"When the ration party at length files into the front trench the Post Corporal dumps down his letter-bag in the most open place he can find, for even the strictest discipline could not prevent a crowd when the post arrives. Someone brings up a little electric torch, and one by one the love-letters and bills and papers from home are handed out to the eager men of the company.

"Then the crowd dwindles away to read its letters by the light of the brazier fire, and the Post Corporal brings the few envelopes that have no owner to the Captain's dug-out. They are re-adressed 'killed' or 'wounded,' as the case may be, and go oc down the line again to teh person who wrote them or to some bandaged 'Tommy' in hospital.

"And the Post Corporal curls up in a dug-out, too muddy and sleepy to be thankful that Fritz, probably busy with his own letters from Gretchen, did not shell the comunication trench."

RELIEF AT LAST

I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
Address

MRS. M. SUMMERS, Box 309
Windsor, Ont.

CORRECTION

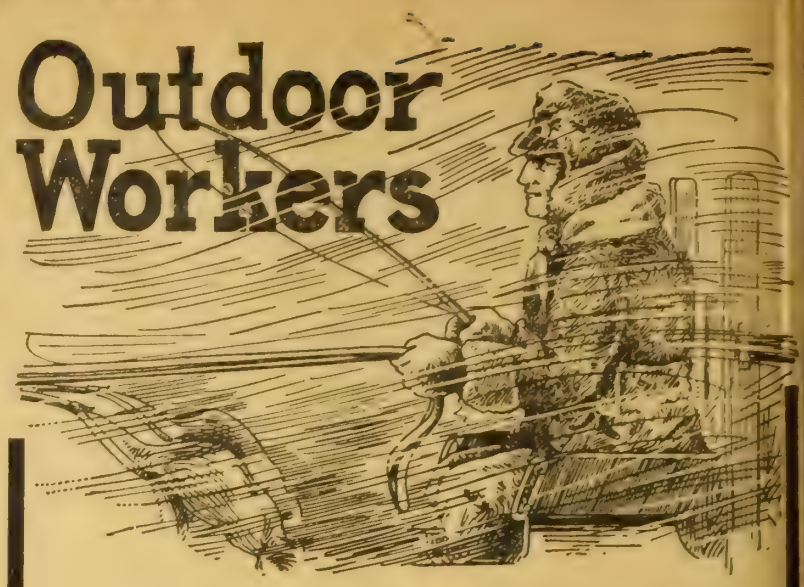
nIn the report if the Women's Institutes Convention recently held in Fredericton an error inadvertedly appeared.

It was Mrs. Helen Hutchings of the Quispamsis Institute who presided at the Tuesday evening session, not Miss Helen Hutching of Rothesay. Rothesay is one of the localities in which a branch of the Women's Institute does not exist, but which we trust ere long will come in line with the organized movement "For Home and Country."

RECOMPENSE CHILD FOR WORK

A great many people expect their children to work without recompense. This is a grave mistake. We, ourselves, expect gain at the end of each day. We labor in the expectation of reward. If our pay were taken from us most of us would cease to labor. Then is it not true thta some of us are doing this very thing in dealing with our children? We, too often, expect them to work for us without pay.

Let's consider the child's side of the mtater. Perhaps he has a long cherished plan which he cannot execute without the necessary means, and knows if he asks his father for it will be refused, for father and mother sometimes think it a waste of money to buy things that are absolutely unnecessary to one's comfort. This makes him feel dejected, for he does not look at the istuation in the same way. He looks ta it from his own point of view, and thinks himself much-injured boy and grows dissatisfied with everything in general and does not care whether or not his chores are done perfectly and spends his time in grieving over his hard position.



Outdoor Workers

need the warmth and health protection that they get in the fine, big, heavy

ATLANTIC UNDERWEAR

Farmers, Lumbermen, Fishermen, Sailors, Miners, Teamsters, Steel Workers—know about the warmth, the health protection, the easy comfort, the sturdy service of Atlantic Underwear.

Ask your dealer to show it to you. This Trade Mark is on every garment to guarantee long wear.

ATLANTIC UNDERWEAR LIMITED
MONCTON, N.B.

ATLANTIC UNDERWEAR

13

SYRUP

Are YOU saving Sugar by using

CROWN BRAND CORN SYRUP

Corn starch converted into its "sugar" form, with pure cane syrup added.

LILY WHITE CORN SYRUP

The Canada Food Board recommends Corn Syrup (White) for preserving and cooking. Also delicious for all table purposes.

In 2, 5, 10 and 20 lb. tins, at all dealers.

CANADA STARCH CO. LIMITED - - MONTREAL

162

Each little one who has asked re-
tedly for pennies and been repeat-
y refused has been asked over and
r again to fill the woodbox, to bring
sh water from the spring, to hunt
eggs and numerous other things
ich are easy for little hands to per-
m. If we older ones had to do all
he things we ask our children, over
h day without a single hint of re-
rd, we would be like the discontent-
child who wonders why he never
s any pay.

Ve need not pay children for every-
ng they do do for us, for there are
ne things which they should be
ght to do for us without expecting
ard. But we should allow them
ney to call their very own once in
while at least. They do their work
h greater zeal and they feel free to
nd the money, because they earned
honestly by helping father and
ther. In this way they learn the
ue of money and how to spend it
ely. They will make mistakes at
t, but these very mistakes will
rd them against making greater
s in the future. Children must be
ght the true value of money and
v not to waste it.

Now is a good time to teach chil-
n economy. The war has taught
or is teaching all rather, to con-
ve all food, and economize very
sely. This is of the greatest im-
tance if we can win the war.

POISE

The majority of people lack poise.
is this lack which makes so many
ple tiresome and unrestful, the
son why they get on one's nerves.
ack of poise is both physical and
ntal. There is the man whose
nds, arms, legs body, each or all,
seldom still. He tires everybody.
ere is the other man whose mind
ggles, whose thoughts do not stay
l. He gives only partial attention
the subject, jumps to another and
k again, never quite finishes what
is talking about. He, too, is a
ariness.

Nor is unrest of mind and body con-
ed to men. Women also are guilty.
e present world-wide unrest may
somewhat responsible for the no-
eable lack of personal poise in most
ple, for the "urge" which seems to
impelling the individual more than
merly away from poise and repose
manner.

f you are guilty in this respect, cul-
aet poise. Don't you see it in the
cessful men you know, is it not
aracteristic of those you most ad-
e. Poise adds to personality.

t is not easy to gain poise if it is
natural to you, but it is worth the
ort. Poise is good for the health,
valuable in business and in men or
men women is an attribute which
full of charm.

NSE OF HUMOR A BLESSED GIFT

At a dinner recently the guests were
cussing what gift they would choose
he "good fairy" should be ladling
m out. Riches, good looks, fascin-
on—the whole gamut was run, until
young matron's turn. With a
gh, she said: "If I could have but
gift, what would I take? A sense
humor."

That woman knew the secret of com-
table living. There is no situation
trying, no lot so hard that it cannot
lightened by the power to see the
in it. The humor sense is some
es called dangerous and the sober-
es even deem it frivolous. There is
greater safety valve, however, and
happy possessor should deem him-
f blessed of the gods.

Some claim that few women have
eal sense of humor. This si as false
most of the theorizings about the
. A woman may not be able to see
in the same things as does a man,
too many women are facing dis-
ssing conditions and actually get
g amusement out of them to deny
sixth and most blesse dsense.

Lots of women think they have a sense of humor when they have only a doggged sort of "grin-and-bear-it" take life cheerfully, and keep on fighting than to "chuck the job" but that is not the saving sense.

If you really have it, this sense of humor, and do not have to force a scmile, you chuckle because you cannot help it. While doing the most impossible things, your thoughts will be bubbling over with the funny side of it.

Some women think they possess this sense because they can see a well-sharpened point to a joke—that is only perception, a uqick wit. The real sense of humor enjoys a joke just as much as its owner's expense as at her neighbors.

MISINFORMATION ABOUT "CATCHING" COLDS

At this season of the year health magazines, and even some public health publications are regarding common colds. Overheating, lack of exercise, fresh air and sleep, and a hundred other indiscretions of ordinary living are recited as definite cause of colds, while as a matter of fact all acute colds are due to the contraction of an infection. You can "catch" cold only from a person wha has a cold. Soiled handkerchiefs, dirty hands, common drinking cups and eating utensils are generally the vehicles by which the infection is transferred from the sick to the well. Overeating, lack of eyercise and all other causes in the encyclopedia of misinformation may be predisposing factors by which resistance is lowered, providing a fertile field for the infection.

The Dreaded Message

IT is the women that have suffered most in this terrible war—

"For men must work
And women must weep."

Theirs has been the worry and anxiety. The watching and waiting in constant dread of what might happen.

Because mental suffering is far more distressing and debilitating than physical pain and discomforts women have had the greatest burden to bear.

The strain has been both severe and long, and the result is an alarming increase in diseases of the nerves. Nervous headaches, neuralgic pains, nervous prostration and exhaustion, restlessness, irritability and melancholy.

These are some of the indications of nervous breakdown.

The building up of an exhausted nervous system is oftentimes a somewhat tedious process, but with the persistent use of Dr. Chase's Nerve Food you can be sure that restoration is both natural and lasting.

Get out into the fresh air as much as possible. Seek the companionship of healthy, cheerful people, and depend on this food cure to enrich the blood and supply to the depleted nerve cells the nourishment essential for their restoration.

Mrs. S. N. Hurst, Barrie, Ont., writes:

"About thirteen years ago, owing to a shock I had received, my nerves simply got the better of me. I could not sleep at night nor work in the day time. I suffered from a trembling sensation in my stomach, which kept up continually. I doctored for about a year and a half without getting any benefit. Then someone advised me to try Dr. Chase's Nerve Food. I did so, and at first was nearly discouraged, but as I was finishing the first box I found I was getting a little better. I then continued the treatment until I had taken six boxes, and during this time seemed to be getting stronger and better as time went on. The trembling in my stomach ceased, and I was able to eat and sleep without any difficulty. I am very grateful for having been advised to use Dr. Chase's Nerve Food, as I had about given up hopes of ever getting any relief. I therefore gladly recommend the use of this treatment to any one suffering from nervous trouble of any kind."

In order to be sure of getting the genuine Dr. Chase's Nerve Food it is only necessary to see the portrait and signature of A. W. Chase, M.D., the famous Receipt Book author, on the box you buy. 50c a box, 6 for $2.75, all dealers, or Edmanson, Bates & Co., Ltd., Toronto.

MARKETS.

CHARLOTTETOWN

Beef—Ox—16c to 18c. Cow—14c to 16c. Carcass.
Veal, Carcass, 14c to 16c.
Hogs, Carcass, 21½c for selects.
Lamb, carcass, 20c to 22c.
Mutton, carcass, 16c to 18c
Beef Hides, 17c lb.
Sheep Skins, $3.00 to $3.50 each.
Calf Skins, 30c lb.
Potatoes, 50c to 65c per bushel.
Carrots, $1.25 per 100 lbs.
Turnips, 20c per bushel of 50 lbs.
Parsnips, $1.75 to $2.00 per 100 lbs.
Oats, 80c to 85c per bushel.
Cornmeal, $4.10 to $4.25 per bag.
Bran, $2.20 to $2.25 per bag.
Oatmeal, $6.50 per bag.
Middlings, $2.40 to $2.60 per bag.
Oil Cake, $4.00 to $4.25 per bag.
Ontario Flour, Blended, $12.25 to $12.50 per barrel.
Manitoba Flour, $12.40 to $12.60 per barrel.
Chickens, 24c to 30c per lb.
Fowl, 18c to 22c per lb.
Butter, Creamery, 48½c to 50c per lb.
Butter, Dairy, 40c to 42c per lb.
Cheese, board price, 24¼c; wholesale price, 25c to 25½c; Twins ½c higher.
Eggs, 49c to 50c per do en.
Hay, 90c to $1.00 per 100 lbs.
Straw, 60c to 70c per 100 lbs.

MILLFEEDS ARE SCARCE

Flour Mills Are Only Offering 100 Bags of Bran or Shorts to Car. Oats Have Stiffened in Price

Mill feeds are still scarce. The flour mills are unable to fill the orders pouring in on them. They are offering 100 to 150 bags of feed to the car. And they are unable to do more. It takes 76 per cent. of the whole wheat to make flour and the amount of offal is almost negligible. The outlook for future supplies in 1919 is not bright. The food controllers of the Allied forces have declared their intention of feeding the enemy population, who are starving. This means an even greater demand for food stuffs and it may be months before normal conditions in feeds are established. The Maritime Farmer has been able to supply many cars of standard feeds, at cost, to farm organizations and is still in a position to do so. If you want feeds, we suggest that you get your agriclutural society together and make up an order. Feed is very scarce. Transportation difficulties will be taxed to their utmost this winter and there will be delays in deliveries. Re-cleaned feed oats are quoted, Nov. 15th delivered, at $1.06 per bushel. P. E. I. oats are quoted at $1.05 per bushel. These are for car lots. The Maritime Farmer will buy for you if you organize. Get busy and co-operate.

MONTREAL

COUNTRY PRODUCE

Montreal, Nov. 16.—There were no new developments in the local egg situation today, except that supplies of strictly new laid and fancy eggs are very scarce owing to the exceedingly light receipts from the country and in consequence the dealers find it difficult to meet the requirements of the trade. There was no change in prices to day, but the prospects are that as soon as the weather becomes colder values will for these grades be still higher. The trade in cold storage eggs continues active in a wholesale jobbing way, and prices are firmly maintained. The receipts today were 336 cases, as compared with 1,358 for the same day last week and 1,271 for the corresponding date a year ago.

We quote wholesale jobbing prices as follows:

Strictly new laid eggs.....65c to 70c
Fresh selected stock.....50c to 54c
Storage selected stock.....00c to 53c
Storage No. 1 stock.....00c to 49c

There continues to be an active demand for all lines of poultry and as supplies of live birds are coming forward freely for the season of the year a large trade was done, and the tone of the market remains firm with no change in prices to note. The demand for dressed poultry is also good, of which the offerings are not large as yet on acocunt of the mild weather prevailing, but all supplies coming forward met with a ready sale at firm prices.

We quote prices for dressed poultry as follows:

Turkeys, per lb.....36c to 38c
Chickens .....28c to 32c
Ducks .....28c to 30c
Fowl .....27c to 30c

The condition of the market for potatoes was unchanged today, prices being steady with a good demand for supplies in a wholesale jobbing way, and a fairly active trade was done with sales of Green Mountains at $2, Quebec white at $1.75 and other Quebec varieties at $1.60 per bags of 90 lbs., ex-store, while car lots of Green Mountains were quoted at $1.75, and Quebec white at $1.50 per bag of 90 lbs., ex-track. The trade in Quebec turnips was fairly active and prices rule firm at $1.25 per bag of 70 lbs., and winter red onions sold freely at $1.75 per bag of 70 lbs., ex-store.

Chicago, November 13.—Eggs higher. Receipts, 5,205 cases. Firsts, irregular. Receipts, 11,866 cases. Fresh gathered, 70c; fresh gathered, regular packed, extra firsts, 67c to 69c; do. firsts, 64c to 66c; State Pennsylvania and nearby western hennery, whites, fine to fancy, 92c to 96c; State Pennsylvania and nearby hennery, browns, 70c to 75c; do. gathered browns and mixed colors, 60c to 70c.

New York, November 13.—Hops firm. State, medium to choice, 1918, 25c to 31c; 1917, 18c to 20c. Pacific Coast, 1918, 29c to 30c; 1917, 18c to 20c.

THE PROVISION MARKET

Montreal ,Nov. 16th.—There was no further developments in the condition of the market for live hogs today, but the feeling was very firm at all the leading centres owing to the continued good demand from packers for supplies and prices in the Toronto market yesterday were firmer with sales at $18.25 per 100 lbs, fed and watered, while selected lots at Winnipeg sold at $17.50 per 100 lbs. weighed off cars, and in this market today a fairly active trade was done in selected stock at $18 t o$18.25, and mixed lots sold at $17.50 per 100 lbs., weighed off cars. A feature of the trade was the demand from Ontario packers for supplies in this market and shipments of 6 car loads were made t oToronto. The domestic trade in dressed hogs was fair and prices were unchanged. Sales of abattoir fresh-killed stock in a wholesale jobbing way were made at $22.50 to $23 per 100 lbs.

The tone of the market for smoked and cured meats remains steady with a fair amount of business passing in a wholesale jobbing way in most lines for domestic and country account. Sales of 8 to 10 lb. hams were made at 37c per lb., 12 to 15 lbs, at 35c to 36c, and heavier weights at 34c. Breakfast bacon sold at 43c to 53c, Windsor selected bacon at 45c to 46c, and Windsor boneless bacon at 48c to 50c per lb. The demand for barrel pork continues somewhat limited, and trade is rather slow. American bean pork in car lots was quoted at $41 per barrel, duty paid, short-cut clear pork at $66, and clear cut fat back pork at $58.

A good steady trade continues to be done in lard in a wholsale jobbing way and prices show no change with sales of Canadian pure leaf grades at 31c to 31½c per lb. in 20-lb wood pails, and at 32½ to 33c per lb. in 1-lb. blocks, while American compound lard sold at 27c per lb. in 20-lb. wood pails.

The receipts of provisions today were 654 packages lard, 9 boxes hams and bacons, and 229 packages tinned meats.

DAIRY PRODUCE MARKET

Montreal, Nov. 16.—The receipts of butter today were 3,121 packages, as compared with 2,093 for the same day last week, and 172 for the corresponding date a year ago. The market today was without any special feature to note. There was no improvement in the demand for round lots, which would indicate that buyers in most cases are well supplied for the present and are awaiting developments. The trade in a wholesale jobbing way continues fair and prices rule firm with sales of finest creamery at 50c per lb. in solid packages, and at 51c per lb. in 1-lb. blocks.

We quote the wholsale prices as follows:

Finest creamery .....49c to 50c
Fine creamery .....48c to 48½c
Finest dairy .....44c to 45c
Fine dairy .....40c to 42c

The receipts of cheese today were 6,682 boxes ,as against 5,847 for the same day last week, and 2,413 for the corresponding date a year ago. The condition of the market was unchanged, and as the season is now fast drawing to a close the indications are that there will be not be any new developments of importance. The demand from exporters is good for all offerings, and supplies are going forward freely to the English markets.

The following prices are being paid by the Commission.

No. 1 cheese 25c
No. 2 cheese 24½c
No. 3 cheese 24c

New York, November 15th.—Butter firm. Receipts, 12,133 tubs. Creamery higher than extras, 63½c to 64c; creamery, extras, 92 score, 63c; firsts, 58½c to 62½c; packing stock, current make, No. 2, 37c to 37½c. Cheese firm. Receipts, 5,941 boxes. State, whole milk, flats, fresh, specials, 33c to 33½c.

THE BALED HAY MARKET

Montreal, Nov. 16.—There was no actual change in the condition of the market for baled hay owing to the fact that there has been no material increase in the shipments of supplies from the interior, and until there is prices are likely to be firmly maintained, as the demand at present is in excess of the offerings on spot and stocks are light. Sales of car lots of No. 1 timothy were made at $26 to $27, No. 1 light clover mixed hay at $26 to $27, No. 2 timothy at $25 to $26. No. 2 clover mixed hay at $24 to $25, and No. 3 timothy at $23 to $24 epr ton ex-track.

MILLFEED AND ROLLED OATS

Montreal, Nov. 16.—A weaker feeling has developed in the market for some lines of millfeed and prices for these foods have been reduced all the way from $2 to $5 per ton, which is attributed to some extent to the increased offerings, and that fact that competition for business is keener now than it was some months ago. The demand for supplies from local and country buyers is reporter good and the movement is large with sales of pure grain moullie at $68 to $70, pure oat moullie at $64, barley feed at $60 to $62, and mixed moullie at $50 per ton, including bags, delivered to the trade. The condition of the market for bran and shorts is unchanged as prices are fixed by the Government. The trade in these lines is active and supplies are kept closely sold up. Bran is selling in car lots at $37.25, and shorts at $42.25 per ton, including bags, ex-track, and bran at $39.25, and shorts at $44.25 per ton, ex-warehouse, including cartage. The market for rolled oats was about steady with a fair volume of business passing in broken loas of standard grades at $4.[illegible] to $4.90 per bag of 90 lbs., and Gold[illegible] cornmeal at $5.50 to $5.75 per bag, d[illegible] livered to the trade.

RELIABLE VETERINARY WORK

Maritime Farmer Will Supply Book Which Should be on Every Farm at Low Cost of 75c., Postage Paid

The other day a subscriber wrote [illegible] and asked us to send him a treat[illegible] on veterinary subjects. He suggested that every farmer should have [illegible] in his home. So we looked about [illegible] a suitable work on the subject and se[illegible]ected "The Veterinarian," by Charl[illegible] J. Korinek, V .S. This work is r[illegible]ning through the fourth edition. [illegible] is a tretaise written in plain Engl[illegible] so plain that any man who reads [illegible] understand. It deals with diseases [illegible] the horse, cattle, swine, sheep a[illegible] goats, poultry and miscellaneous. T[illegible] book is cloth bound, of 256 pages a[illegible] is particularly well indexed. The pri[illegible] postage paid will be seventy-five cent[illegible]

PREVENTING SCALD IN STORAG[illegible]

Scald is the most prevalent a[illegible] most serious of the skin blemishe[illegible] It is a browning or blackening of t[illegible] skin that does not extend into t[illegible] flesh, but gives the fruit a scalded [illegible] baked appearance, which greatly le[illegible]ens its commercial value. It cannot b[illegible] controlled absolutely, but throug[illegible] proper handling and storing it can b[illegible] greatly reduced.

There is a great difference in var[illegible]ties in their susceptibility to scal[illegible] Some, like Spy, Jonathan and Sp[illegible] are comparatively immune, whil[illegible] Rome Beauty and Wagner often de[illegible]elop an undue amount.

If apples are allowed to reach m[illegible] turity before picking, then are packe[illegible] and placed at once in a temperatu[illegible] of 32 degrees, they will sow much le[illegible] scald than if picked when immatu[illegible] or overripe, or if delayed for one [illegible] two weeks before being placed in sto[illegible] age. As soon as the fruit is picke[illegible] the ripening process continues eve[illegible] more rapidly. Apples held at 32 d[illegible] grees scald somewhat less than tho[illegible] held at 35 degrees, or in comme[illegible] storage.

Of even more importance than qui[illegible] storage and cooling is maturity [illegible] time of picking. Apples that are im[illegible] mature will frequently scald very ba[illegible]ly, but as the picking season progres[illegible]es and the apples reach maturity, the[illegible] will keep much longer and bette[illegible] Good judgment and experience ar[illegible] the only reliable guides to determi[illegible] the proper period for picking ea[illegible] variety.

HARVESTING THE FIELD BEAN[illegible]

For the small grower the old met[illegible]od of pulling the beans and stackin[illegible] them around a pole is possibly th[illegible] best practice. A few sticks are la[illegible] on the ground and the beans piled o[illegible] these around the pole to a height o[illegible] four to six feet. They are finally tie[illegible] around the pole to keep the top fro[illegible] blowing off.

Where there is a half acre or mo[illegible] of beans this method may be impra[illegible]ticable, because of the greater amoun[illegible] of work necessary. Under these co[illegible]ditions the beans are allowed to stan[illegible] until the leaves begin to fall, whe[illegible] they are pulled down and thrown int[illegible] windrows or small piles. These ar[illegible] turned frequently until thoroughly dry when they are either threshed immed[illegible]iately from the field, or drawn to th[illegible] barn and placed in the mow withou[illegible] tramping or packing. They should re[illegible]main in the mow several weeks before threshing. It is important that they be dry when taken to the barn, and that they be placed loosely in the mow, without being tramped or piled very deeply so as to pack.

WINTER RHUBARB EASILY PRODUCED

The production of rhubarb in winter as become of considerable value mong gardeners. It is easy to do if rtain methods are followed. If one making a permanent business of ubarb forcing it is necessary each ear to set out a new bed, as plants ice formed are of no further value. the spring large roots should be dug it split in one bud section and re-aced in rich, moist ground. During e growing season they are kept cul-vated and free from weeds. In the ll they are covered with manure. ext spring the second bed is planted before. That fall a large part of the rst bed i staken up, leaving sufficient replant another bed the next spring. he roots are taken up the last thing the fall, before the hard freezing eather comes, and are placed in piles a sed where they can easily be got dufing the winter, but will remain ozen. About December first take a sufficient number of roots, place ese bud side up on the floor of a arm cellar—about 68 degrees or 70 egrees—and cover with an inch of nd. Be sure to fill in all interspaces. eep this sand moist. About a week ter the buds will begin to swell, and from four to six weeks, depending on the heat of the room—the cooler e slower the growth—you should ave rhubarb ready for market. If a nstant supply is required, make a ew bed every two or three weeks ring the winter. Be sure to keep all ght dimmed. Put burlap or brown aper over the windows to get the pink olor so much desired.

CHECKING CELERY BLIGHT

When the celery begins to blight pray it with Bordeaux mixture and estroy the diseased parts of the lnts. This, experiment station men y, will check the disease. When the crop has been harvested all debris should be cleaned up and burned as it may harbor the blight fungus over the winter. The proper strength of Bordeaux is 4 pounds of copper sulphate, 4 pounds of lime and 50 gallons of water. If the young seedlings are sprayed before transplanting and afterward occasionally, the blight will be prevented.

YELLOW BUTTER NOT ALWAYS RICHEST

The average consumer of dairy produce is inclined to place an unwarranted value upon the yellow tint of cream and butter in the belief that the color is an evidence of richness in nutrients. As a matter of fact yellowness may be imparted to cream by some of the comon bacteria present in the milk at the time it leaves the cow's udder or which develop in it subsequently, as well as by two common pigments of vegetable origin. These pigments, carrotin and xanthopyll, are assimilated to a much greater extent by Jerseys and Guernseys than by other animals and by being eliminated from the system through the milk, impart the rich yellow color characteristic of milk from these breeds.

These plant pigments are quite harmless, but, of course, have no nutrient value. However, no one relishes the idea of consuming milk or cream which owes its apparent richness to swarms of bacteria, even though they may bear a fairly good reputation. Moreover, some of them are deleterious to health. The use of well-cleaned and sterilized utensils, with due regard to the health of animals, including the condition of the udder, are usually sufficient to avoid such abnormalities as yellow milk, "bloody" milk, ropy milk and other similar conditions.—R. F. Bourne.

FALL FEEDING OF DAIRY COWS

The wise dairyman will feed liberally during the fall months. Cows which are not well fed at this time will go into the winter thin in flesh and with reduced milk flow. It will be expensive and largely in vain to attempt to bring them back to normal flow after they go on winter rations.

It wil pay to begin feeding silage and hay early. The extra feed given at this time will not only bring good, immediate returns, but agect the milk flow for the whole year by putting the cow in good condition to go through the winter months. Cows which go into winter in good vitality and with undiminished milk make most economical use of the high priced feeds given them during that period. Keep up the milk flow during the winter months by proper fteding. It will pay.

1918 New Brunswick Field Crops Competition.

QUEENS COUNTY	Wheat		Oats		Potatoes		Turnips	
Name and Address	score	awrd	score	awrd	score	awrd	score	awrd
T. W. Gilbert, Gagetown	93.35	2.06						
Alex. Shield, Gagetown	92.60	2.05						
J. Garfield McCrea, Shannon	92.10	2.03	93.75	2.79				
G. B. Jones, Shannon	92.00	2.03						
J. F. Reid, Gagetown	82.70	1.83						
Chas. M. Lawson, Shannon			96.95	2.88				
Arnold B. Carpenter, Carpenter			95.60	2.85				
Frank H. Ducey, Shannon			94.30	2.81				
A. Mayes McCrea, Hatfield Pt. R. 2.			93.55	2.79				
R. B. McCready, Shannon			92.80	2.76				
John F. McCrea, Shannon			92.25	2.75				
Wm. J. Jones, Shannon			91.55	2.72				
Frank T. Mahoney, Gagetown			88.95	2.65				

An additional $3.00 goes to T. W. Gilbert and Chas. M. Lawson; an additional $2.00 goes to Alex. Shield and Arnold B. Carpenter when they show their grain at the Prov. Seed Fair.

(Gloucester County will appear next issue)

"The destructiveness of the cut worm has not been so evident for years," declares Mr. F. Abraham, chairman of the Home aGrdens and Vacant Lots Section of the Canada Food Board. "An early season to some extent minimized the loss from this pest. The time to attack the cut worm is in the fall, if next year' sravages are to be controlled. The eggs of this worm are laid in the autumn, and if after all eggs are laid, the ground is well broken up or plowed, the larvae will be so deeply buried as to destroy ninety-five per cent. of them.

"I strongly advise," he added, "that every available foot of town land be plowed this fall. During the winter there will be plenty or time to organize for planting it in vegetables, or even cereals, but get as much fall plowing under way as possible. Cities and town are the only available source of surplus labor, and every ounce of food will be required."

Rush the apples into cold storage as soon as possible after they are picked. Prompt storing a ta temperature of 32 degrees will mean longer keeping (a month with some varieties) and much less loss and injury from scald, scab and roots.

FERTILIZERS FOR 1919

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Making two blades grow where only one grew before. By using Shur-Gain Fertilizers, you can increase your yields without additional land, labor, or seed.

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We specialize on potato fertil zers and can fill your wants at prices that are worth investigating.

GUNNS LIMITED, 676 Main St., St. John, N.B.

COMMON DISEASES OF THE DIGESTIVE ORGANS OF CATTLE

(Continued from page 101)

are present and to prevent the formatio nof more. It will depend upon the severity of the attack and the extent of the disetnsion of the rumen whether it will be wise to attempt the immediate removal of the gases or to administer drugs to neutralize them. When bloating is not excessive, with little danger of death occurring quickly, the administration of any drug that will nteralize the gases may, and should, be effective. For this purpose oil of turpentine (commonly called spirits of turpentine) is probably the best simple remedy. This is given in 2 to 4 oz. doses, according to the size of the patient, and the state of distension. It is wise to administer it in some vehicle to prevent irritation of the mucous membrane. The best vehicle is raw inlseed oil 1 to 1½ pints. When oil is not on hand melted butter or lard or whole milk will answer the purpose well, but turpentine will not mix with water; at the same time when oily vehicles are not readily obtainable it may be given in water if the bottle be constantly shaken. Hyposulphite of soda in 1 to 1½ oz. doses mixed with about a pint of warm water also gives good results. Carbonate of ammonia in 4 to 6 dr. doses, or bicarbonate of soda baking soda) in 1 to 1½ oz. doses also acts well, but none of these act so well or so promptly as oil of turpentine. The Kentucky Experimental Station highly recommends the adminstration of about ½ oz. of formalin in a quart of water and cite many cases in which it has given excellent results. The writer has not experimented with this drug in this connection, having had good results form oil of turpentine. At the same time the use of formalin is worthy of a trial, but it must be remembered that it is a very strong astringent and irritant, hence must be diluted with at least a quart of water.

In addition to administering the dose (whatever we select) it is good practice to put a hay rope, a piece of wood or other material about two inches in diameter, into the patients mouth and fasten it there. This tends to cause a working of the jaws and facilitates the escape of gas through the œsophagus. If the desired results be not obtained in an hour the dose may be repeated.

In cases where bloating is extreme there is danger of death resulting quickly from rupture of the organs mentioned from suffocation or from absorption of gases. In such cases we cannot wait for the action of medicines given by the mouth. Relief must be prompt and the gases must be removed by mechanical or surgical means. In some cases the passing of a rubber tube down the œsophagus to the stomach, will give imemdiate relief. The mouth must be kept open by an ordinary gag, a mouth speculum, a small clevice or other device; the tube or 6 serves the purpose well is oiled, carefully passed until the end enters the rumen. If that part of the rumen be not blocked by semi-solid contents the gas will immediately escape through the tube, but is it is the gas cannot enter the tube.

In such cases an opening must be made on the left side at the most prominent part between the point of the hip and the last rib through the skin, muscles and wall of the rumen through which the gas will escape and give parctically immediate relief. The hair should be clipped off and the seat of the operation, the instruments, and the hands of the operator thoroughly disinfected with a five per cent. solution of carbolic acid, one of the coal tar antiseptics or other good disenfectant. An instrument called a trocar and canula is the proper one to use. It consists of a metal tube with a sharp pointed metal rod passing through it, the point of the rod extending some distance longer than the tube. An incision may be made through the skin with a knife or the instrument forced through without an incision. It is forced well into the rumen, the trocar then drawn out, which leaves the canula or tube inserted through which the gas escapes. When this instrument cannot be procured in time an opening may be made wiht a knife and the lips of the wound held apart to allow the escape of gas. Unless the opening be quite large no after treatment is required other than keeeping the wound clean and dressing regularly with an antiseptic. When the proper instrument is used after-treatment of any kind is seldom necessary.

In all cases it is good practice, after bloating has disappeared, to administer a laxative of about 1 lb. of Epsom salt or 1½ pints raw linseed oil, and feed lightly on laxative food for a few days.

INTUSSUSCEPTION

(Continued from page 113)

gestive organs, particularly resembling those of obstinate constipation. There is a cessation of intestinal murmur, restlessness, pain shown by pawing, wandering about, lying down, endeavoring to lie on the back, sweating, crouching, sitting upon the haunches, pressing the rump against any solid object when standing, anxious expression. The pulse is at first full and frequent, but as the disease advances it decreases in force but increases in frequency, in many cases becoming intermittent and afterwards imperceptible at the jaw. There will be little or no passage of faeces. The mucous membranes become injected and red, respirations are frequent, and apparently labored. The abdomen, at first of normal appearance, becomes fuller, and in some cases distended with gas. The mouth may be moist and clean, or dry and hot, with an offensive odor. The restlessness continues, the extremities are usually cold. He may rear on his hind legs. After a variable time pain usually ceases, and he will

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LAY Porta Power uses the motor in your automobile—and runs any kind of machinery around the farm. Saves the price of a gasoline engine. Is portable (weighs only 100 lbs. and will work anywhere you can take your car). Saves on gasoline. Pays for itself in a couple of months. Speeds up farm work and makes *bigger profits*. Makes a hired man of your car.

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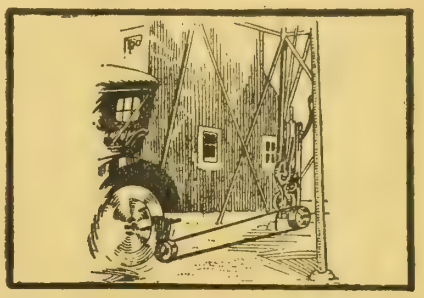
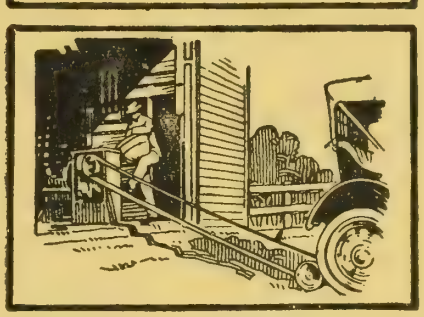
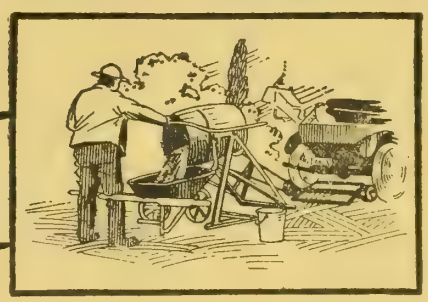
The full story of LAY Porta Power should be in every farmer's hands. Write to your nearest distributing point for literature. Or send $5.00 and LAY Porta Power will be shipped to you—balance on delivery.







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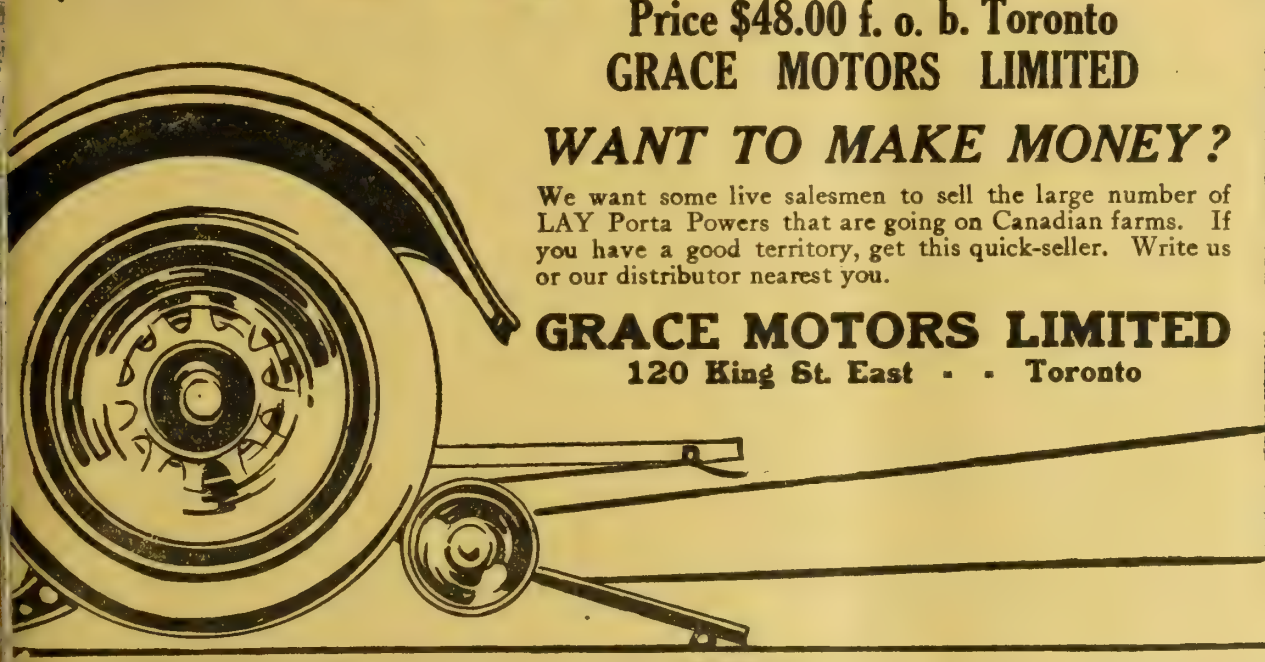

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stand quietly, usually covered with a cold sweat, pulse imperceptible at the jaw, breathing frequent, and usually sighing. To the uninitiated these symptoms indicate an improvement, but they really indicate that the inflammation has terminated in mortification and the approach of dissolution. In some cases there is retching and attempts to vomit. He will usually stand thus until he begins to stagger, and at last falls and dies with a few convulsive struggles. In other cases the symptoms of pain endure until the last.—J. Hugo Reed, V. S.

PROPPING THE ORCHARD

Most fruit growers are not so careful as they might be to prevent limbs of trees from breaking when they are carrying heavy loads of fruit. In some districts, however, propping of some sort has become regular orchard practice, even though the fruit is thinned regularly.

"Four methods of propping are used by the orchardists: The center ring and wire, the cross wire, the center pole and wire, anad the single pole.

"In the centre ring and wire method screw eyes are placed in the main limbs at some distance above the crotch of the tree. Wires are attached to the screw eyes and brought to a ring placed approximately in the centre of the tree. This holds the tree in shape and prevents the breaking of the limbs at the time when the crop is on.

"In the cross-wire method screw eyes are placed in the main limbs at some distance above the crotch. From each screw eye a wire extends and is attached to a limb opposite or nearly so. This answers the same purpose as the former method.

"In the center pole and wire method screw eyes are placed in the main limbs, to which are attached long strands of wire. At the end of each stranad is a loop which is placed over a nail driven in the end of a pole. This pole is raised to a position nearly parallel to the trunk of the tree and set. This draws the wires tight, holds the tree in shape and prevents the limbs from breaking.

"The single-pole prop method is most common. This single pole usually consists of a one-by-two-inch or one -by-four-inch pine strip, varying in length as conditions demand. The eight to twelve foot lengths are most commonly used.

These props are usually sharpened at one end so as to make it easy to place them in the ground. The end which is to hold the limb is V-notched, or small lath strips are tacked on each side of the prop, practically forming a anotch.

There are three methods of single-pole propping in common use: First, one crew may haul and scatter the props through the orchard, while another crew sets them up; second, a crew may haul the props out and set them as they go; third, the props may be hauled out and set up as needed. Sometimes an orchardist may carry out and set them as needed.

SILO FACTS FOR LIVE STOCK FARM

Here are some of the reasons why the farmer should have a silo:

1. The silo preserves the palatabilit yand succulence of the geren corn plant for winter feeding.

2. It helps to make use of the entire corn plant.

3. The silo increases the live stock capacity on the farm.

4. Silage is a good summer feed when pastures are short.

5. Because of the small amount of ground space required by the silo, it is an economical means of storing forage.

6. The silo prevents waste of cornstalks, leaves and husks which contain about two-fifths of the feednig value of the corn plant.

7. The silo located near the feed manger is an assurance of having feed near at hand in tsormy as well as fair weather.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

FOR SALE—A few Sheep, both sex of any popular breeds.—CEPHAS NUNN, Winsloe, P. E. I.

FOR SALE:—Ten choice litters of Yorkshire pigs, not registered. Apply to HENRY McINTYRE, Box 525, Campbellton, N. B.

FOR SALE—Pure bred Leicester Sheep, both sexes, all ages.—STEWART BROS., Murray River, P. E. I.

WANTED.—Mother and daughter or two sisters as domestic help and nursemaid. Good home and wages for reliable, cheerful workers. —Mrs. W. G. Stevens, Chatham, N. B.

FOR SALE—Three Holstein Bull Calves, good well bred ones, ten, eight and six months old. Write for particulars.—JOHN J. M. CABE, Westville, R. R. 1. Pictou Co., N. S.

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WANTED — PERSONS TO GROW MUSHROOMS for us at home; from $15 per week upwards can be made by using waste space in Cellars, Empty Rooms, Root Houses, etc. (start now); illustrated booklet sent free. Address Montreal Supply Company, Montreal.

Springbrook Farm Ayrshires !

PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females, all ages.

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Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

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Silver Siberians, price per pair..... 5.00
Belgians, price per pair 3 00
The above prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each. D. W. Young's stock, as good as money can buy.
White Leghorn 260 egg strain for hatching.....$2.00 per 15
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We Guarantee Safe Delivery. Terms Cash with Order

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

W. H. HENRY
Shubenacadie - - - N. S.

FOR SALE !

Five pairs Toulouse Geese, heavy laying strain. Two geese last spring laid 51 eggs. Price $15.00 per pair. Expressage paid to any part of Maritime Provinces. Cash with order.

L. H. PRICE
Moncton - - - N. B.

JERSEY CATTLE

Cows two years old, yearlings and calves. For particulars apply to

HERBERT WELDON
PENOBSQUIS - - N. B.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T. D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B.

Ayrshire Cattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.
C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE CATTLE

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

FOR SALE
As I Am Overstocked

Black Siberian Hares, young does, 8 months, $10 each.

One pair Black Siberians, 15 months, doe has five young (month old) for $25.

Utility Belgians, young and matured stock, from $2 each.

Large Black Siberian and Belgian Cross, one doe 9 months with seven young (month old) for $10.

All above healthy outdoor reared stock.

Also 24 Rosecomb Brown Leghorn pullets and two cockerels, April and May hatched. Some Galloway and English best stock. $45 the lot.

W. G. STEVENS.
Chatham - - New Brunswick

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

Holsteins Hold All Championships

World's Record Price for Cattle—
Carnation King Sylvia....$106,000.00
World's Record for Butter, One Year—
Duchess Skylark Ormsby 1506.35 lbs.
World's Record for Milk, One Year—
Lutscke Vale Cornucopia 31246.9 lbs.
World's Record for Butter, Seven Days
Segis Fayne Johanna.....50.68 lbs.
World's Record for Milk, Seven Days—
May Echo Sylvia.....1005.8 lbs.
Canadian Record for Butter, One Year
Lady Pietje Canary's Jewel
1173.66 lbs.
Canadian Record for Milk, One Year—
Zarilda Clothilde 3rd DeKol
30467.0 lbs.

IF YOU CAN'T BUY A HERD, BUY A HEIFER.

Information from the Holstein-Friesian Association.

President, Dr. S. F. Tolmie, Victoria, B. C.
Secretary, W. A. Clemons, St. George, Ont.

French Canadian Colts for Sale

French Canadian Colts are for sale at very reasonable prices by the Experimental Station, Cape Rouge, Que., from the largest stud in existence today. If you require a wiry, sturdy, tough breed of horses, write

GUS LANGELIER, Supt.
CAPE ROUGE - - QUE.

Brantford Gasoline and Kerosene Engines

Stationary or Mounted

An Engine for Every Need

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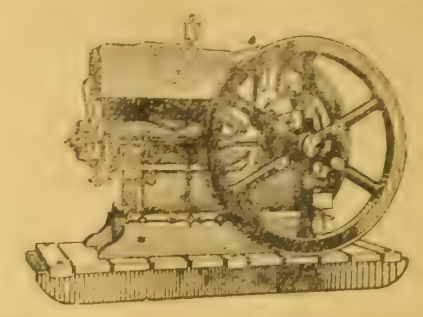

We Manufacture Complete lines of
Wind Mills, Grain Grinders, Wood Sawing Outfits, Pumps, Tanks, Water Boxes, Concrete Mixers, Power Spraying Outfits, etc.

Agents Wanted in Unrepresented Territory

GOOLD, SHAPELY & MUIR CO., LTD., BRANTFORD, ONT.
A. McCAUSLAND, Victoria Hotel, St. John, N. B., Maritime Representative

HALT! READ! THINK! WRITE!

If you didn't get satisfied at Fredericton cale with Ayrshires I can supply the following: Two Bulls, 15 months old. dam and granddam on both sides official tested for milk and butter fat. Females—a pair of three year old heifers, due to freshen before the end of the year. Something good I will sell right, see if I won't; it only takes a stamp.

THOMAS J. HAWKINS
LONE PINE FARM STEWIACKE, COL. CO., N. S.

FOR SALE !

In Shorthorns we have to offer a number of roans, reds and whites of both males and females, from young calves up. It would pay those wishing to purchase to come and see our stock before doing otherwise.

Our spring litters of Berkshires are all sold. Are expecting several summer and fall litters. Parties wishing to purchase please get in touch with us

L. M. ANDERSON, Sackville, N. B.

Milking Shorthorns for Sale

We are offering some choice young Shorthorn bulls of the milking strain, ages 3 months to 15 months.

Also a limited supply of heifers, one and two years of age.

For particulars apply to

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett
Upper Sackville, - - - N. B.

The Keystone Dehorner

The Department of Agriculture has found that dehorning cows adds to their milking value. The KEYSTONE DEHORNER is mentioned in the 1915 report (page 131) as the most effective instrument for the purpose. Write for booklet. R. H. McKENNA, 219 Robert Street, Toronto.

BARRED PLYMOUTH ROCKS
WHITE WYANDOTTES
S. C. BROWN LEGHORNS
$3.00 Utility Cockerels $3.00

H. M. McMONAGLE
Box 652 - - Fredericton, N. B.

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,
AMHERST, - - - N. S.

KEEP RAIN WATER CLEAN

Instead of placing the rain water barrel outside the shed or barn, where dust and leaves can blow into it, and mosquitoes breed on its surface, why not put it inside the building and bring the water from the gutter down through the side of the building into the barrel? The water can then be used for stock on a rainy day without going out in the wet.

Butter Parchment at Farmer Office

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESEDTRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 24. SUSSEX, NEW BRUNSWICK, DECEMBER 3, 1918. Number 5.

Conserving the Farmer's Greatest Asset in Maintaining Soil Fertility

From the beginning of agriculture, the fetrility of farm soils has been chiefly maintained by the application of manures. The real value of manures and their effect upon the soil were not known until quite recently, and, even now, we are probably just beginning to understand the manifold ways in which manure works this improvement. The principal value of manure was thought to be in the plant food it contained. It has even been said by some that, since a ton of stable manure contained say from $2 to $4 worth of nitrogen, potash and phosphoric acid, the same amount of plant food could be purchased and applied more cheaply in the form of commercial fertilizer. This may be true as regards plant food, but the conclusion must not be drawn that commercial fertilizer can take the place of manure. From the analyst's point of view, a ton of manure may be worth $2 to $4, but from the farmer's point of view, it may be worth several times that amount, because the farmer knows that he cannot, with the amount at which the plant food in the manure is valued, buy artificial fertilizer that will give the results on most soils that are to be obtained from the use of one ton of manure. Manure benefits the soil in other ways than by adding plant food.

Manure Improves Texture of the Soil.—The chief value of manure on many soils is its beneficial effect upon the texture of the soil. Most farm soils contain large amounts of plant food and the cause of unproductiveness is often that the soil is in a poor condition of tilth. One of the great functions of manure then is to so change the texture of the soil, that the plant can more readily use the plant food in it. When thoroughly incorporated, it loosens a heavy soil and has a tendency to bind together light, leachy soils, making both warmer, more pliable, more retentive of moisture and generally more congenial to plants.

Bacteria in Manure.—Aside from the humus it adds, manure benefits the soil in still other ways. It contains countless numbers of bacteria that are beneficial to the soil. When the vegetable matter contained in the manure rots in the soil, certain acids and ferments are produced which influence the supply of available plant food. All this is in addition to the plant food value of manure. The influence of commercial fertilizers is due almost solely to their supply of plant food; farm manures influence all soil conditions which are essential to the production of profitable crops. Farmers must learn to rely more and more upon nature's provisions for maintaining fertility, viz., farmyard manure and the returning of plants to the soil.

Value of Manure.—According to recently published figures, the value of animal manure produced annually in the United States amounts to $2,225,000,000. Reckoning on this basis, we find that in Canada there is produced annually animal manure worth over $200,000,000. This is only a by-product on the farm, yet it is the farmer's greatest asset in the maintenance of soil fertility.

COMPOSITION OF FRESH EXCREMENT

One Thousand Pounds of Fresh Dung Contain:

	Water	Nitrogen	Phosphoric acid	Alkalies
	(lbs.)	(lbs.)	(lbs.)	(lbs.)
Horse	760	5.0	3.5	3.0
Cow	840	5.0	3.5	3.0
Swine	800	6.0	4.5	5.0
Sheep	580	7.5	6.0	3.0

One Thousand Pounds of Fresh Urine Contain:

	Water	Nitrogen	Phosphoric acid	Alkalies
	(lbs.)	(lbs.)	(lbs.)	(lbs.)
Horse	890	12.0	0.0	15.0
Cow	920	8.0	0.0	14.0
Swine	795	3.0	1.25	2.0
Sheep	865	14.0	0.5	20.0

COMPOSITION OF ONE THOUSAND POUNDS OF DRAINAGE LIQUORS

	Water	Nitrogen	Phosphoric acid	Potash
	(lbs.)	(lbs.)	(lbs.)	(lbs.)
Drainage from gutter behind milch cows	932	9.8	2.4	8.8
Drainage from manure heap.	820	15.0	1.0	49.0

Much Carelessness in Caring for Manure.—On account of manure being a by-product, it is not given the care and attention which the so-called principal products of the farm receive. The Commission of Conservation has found by actual investigation on 3,000 farms in Canada that the majority of farmers exercise no special care to prevent waste of manure. In 1916, the Commission of Conservation visited 400 farms in Dundas county and learned that very few of these had manure sheds. Proper manure pits or cellars are almost unknown. Less than one per cent of the farmers visited saved all of the liquid manure, while 90 per cent of the farmers admitted that they exercised no special care to prevent the waste of manure. This means that fertilizing elements to the extent of millions of dollars annually are being lost in Canada and that many thousands of dollars are lost in this way in the county of Dundas. What would we think of a farmer who would wilfully allow some of his live stock to wander away and become lost, or who would not mend a hole in the granary floor, through which he knew grain was leaking out and being lost? In these times of stress and food shortage, careless waste of anything that will contribute toward increased production is decidedly unpatriotic. Every pound of plant food in the shape of manure should be jealously guarded and used on the land. Every avenue of waste and loss should be closed.

How Losses Occur.—Losses occur principally from super-heating or fermentation, leaching, and the escape of liquid manure. A common sight in Dundas county is a manure pile beneath the eaves of the barn. Water from the roof drips upon it, rains and snows beat upon it, winds dry it. After the rain, dark puddles will be seen in the yard, or, if the land is sloping, dark streams will be seen carrying off the richness that has leached from the piles. The very best part of the plant food contained in the manure is carried away in this manner. It is the portion which is most quickly soluble, hence the most readily available to the plant when the manure is mixed in the soil. In dry climates, the loss from leaching would not be so great, but in Dundas county where the annual precipitation is large, the loss is very considerable and should set every farmer thinking how to prevent it.

Loss from Fermentation.—Another way in which manure frequently loses value is by heating or fermentation. When it is piled deeply and loosely so that the air can enter the pile, it begins to heat and decay. Horse manure is especially apt to heat quickly. This fermentation is caused by the growth of bacteria which need heat and air. If the air can be kept from entering the pile by closely tramping and packing it, less fermentation will take place. Nitrogen in fermenting manure is rapidly changed into ammonia which escapes into the air. Everyone has noticed the decided 'smell' of a manure pile that is heating. It denotes that plant food is escaping. The heating of manure burns a part of the vegetable matter which would have become humus when applied to the soil. The hotter the manure becomes, the greater is the loss of the humus-making material.

How to Prevent Loss by Heating.—This loss occurs only when manure is piled so that the air passes through it readily. Compacting the manure by tramping will do much to prevent this loss. Keep as much of the liquid manure mixed with the solid as is evpedient. Another method of preventing heating is to mix the cold and hot manures together, that is, the cow manure and the horse manure. Do not allow the pile to become too high, keep the upper surface even. If fermentation is beginning, it can often be checked by mixing a small amount of fresh manure with that which is fermenting.

Loss from the Escape of Urine.—Another loss is caused by failing to save the liquid portion. The liquid contains more nitrogen and more potash than the solid dung, yet in many cases it is allowed to run to waste, while the solid portion is more or less carefully saved. The plant food in the liquid portion is immediately available to plants when the manure is applied to the soil and should be saved and applied to help the young palnts to get a good start.

How to Care for Manures—Leaching usually causes a greater loss of plant food than either fermentation or the escape of the liquids. There are two ways of overcoming the loss from leaching: by hauling the fresh manure from the stable and spreading it directly upon the land; and by properly piling it under cover. Drawing the manure to the fields as made involves the loss of less fertility than is usually suffered from storing it and is the most satisfactory method whenever it is expedient. Some farmers think that there is a considerable loss when manure is spread on the snow in winter time. Careful experiments have shown that the loss is much less than is generally imagined and manure may be drawn out and spread in winter time, unless the land upon which it is being applied is too steep or the snow becomes so deep as to prevent this being done. It is usually necessary to store at least a portion of the manure. When this has to be done, it should be piled under cover in order to prevent the rain from leaching through it. A single heavy shower in the summer may carry away enough plant food from an uncovered pile of manure to pay for a large share of the cost of the manure shed.

Another method is to build shallow, covered cement pits into which the manure is dumped and into which the liquid manure is allowed to drain. The pit should be big enough to hold several week's supply of manure or as

(Continued on page 156)

Feeds will be High in Price

New York Advices are That Market Has Stiffened on Oil Cake--Allies Buying Largely--United States After Canadian Feeds

The feed situation promises to be more acute than for months past. Already the increased European demand is having its effect on oil cake meal prices. There has been a sharp advance at New York and agents of the Allied governments are buying heavily. The call for feeds in Europe is unprecidented, and with the increase in the amount of available ocean tonnage, there will be heavy exportations to Europe.

In Canada, Unit d States buyers are very active. Recently the Canadian food controller was offered 7,000 tons of special feed, made from sugar beets by the Dominion Sugar Company, of Chatham. It was offered at $35 per ton f. o. b. Chatham. It tests 8 per cent protein and one-half per cent fat. Orders for this feed will be accepted by the Dominion Sugar Company. It is worthy of note that United States buyers have offered to take the entire lot at $40 per ton, f. o. b. Chatham, and it is probable that the owners will be allowed to export it. The food controller first insisted that it be offered to Canadians, who have not seen fit to take advantage of the offer.

Special Feeds

In special feeds, the Maritime Farmer will supply agricultural societies at cost. Reports from all sections, with few exceptions, have been most favorable in regard to Ground Special feed, which we offer at $32.00 pr ton f. o. b. Fort William. It contains 13 per cent protein and 4 per cent fat. The cost per unit is about $2.40 delivered to Maritime Province points. We are basing this estimate on a freight rate of $8.80 per ton. Some feeds are being sold in the Maritime Provinces at $4.50 per unit of fat and protein and even at higher prices. The Maritime Farmer would that it might bring home to every buyer of feed, the wisdom of insisting upon getting the analysis of feed before buying. When you get that, add the protein and fat contents together and divide the result into the price you are being charged. This will give you the unit cost. Then compare it with the price of Ground Special and see how much more you are paying. In the case of Molasses Dairy which tests 17.36 protein and 4 fat, the cost per unit is only $2.37 per unit. This is an exceptionally good dairy feed. It is sold at $42.00 per ton f. o. b. Fort William. We have added $8.80 per ton for freight in order to arrive at above figures. Molasses Hog feed sells at about $60.80 New Brunswick points and slightly higher in Nova Scotia and Prince Edward Island. It costs about $2.50 per protein-fat unit. Compare the price with the retail prices you are paying. It will make you wink to see the difference. Where the saving is only 50 cents per unit, it means a cash saving on a car of feed of $250.

COMPARATIVE ANALYSES

	Ground Molasses Special	Ground Molasses Standard	Hog Feed	Molasses Dairy	Bran Avrg.	Std. Midds. Average
Protein	13.31	14.36	17.26	17.18	14.91	17.09
Fat (Ether Extract)	4.00	4.92	5.39	4.05	3.99	5.33
Crude Fibre	18.81	10.32	13.97	15.82	12.43	10.89
Carbohydrates	64.11	67.96	69.67	57.53	63.50	62.23

Is This Worth Saving?

Is the saving of $250 on a car of feed worth while? We believe that most buyers of mill feeds will agree that it is and be inclined to insist on buying only that feed which they consider has value to the extent that they are asked to pay for it. The use of feeds made from elevator screenings is not an experiment by any means. For years United States buyers have been coming to Canada and buying these screenings. They have been sold there for years. Only when the scarcity of mill feeds in Canada became acute, were steps taken to save these valuable feeds for home consumption. At Fort William a mill was erected at a cost of three quarters of a million dollars and to-day feeds are being produced from elevator screenings, which have a high feed value.

In the winter of 1914-15, extensive experiments were carried on by the Animal Husbandry Division of the Central Experimental Station at Ottawa, with a view to determining the comparative feeding values of meals and elevator screenings. The results, published by the Central Experimental Station, establishd that the use of feeds from elevator screenings were not only practical but highly profitable. In the United States splendid results have been obtained.

Will not use Bran or Shorts

During the present season, the Maritime Farmer, delivered large quantities of these feeds to farm organizations in the Maritime Provinces, and with excellent satisfaction to those who have used them. Some of the best feeders in Sussex, N. B., probably the centre o fthe most extensive dairying section in the Maritime Provinces, have bought large quantities of Ground Special. James J. Jeffries, Harry Manning, Albert Bonnell and many other large milk producers have not only been satisfied, but declare that they are getting fine results from this feed. In fact, some farmers have declined to buy shorts and bran, preferring Ground Special to either or both. They save money by purchasing the elevator screenings feeds and their stock is producing well on them and building up.

Agricultural Societies may secure these feeds through the Maritime Farmer at cost. They are shipped car lots of twenty five tons. A bank guarantee that the draft will be paid on presentation must accompany the order. A form for this purpose will be sent on application. Not only this year, but in the years to come, the Maritime Farmer hopes to save many dollars for these organization, who are sufficiently wide awake to co-operate. If you are interested in these feeds, or in bran, shorts, flour, oats, or hay, write us. We will give you our quotations. But please remember that quotations on many feeds are for one day only. If you want to get an order in, get it along quickly.

For the information of those interested, the prices and analyses of elevator screenings feeds are given above.

The N. B. Breeders Consignment Sale

The first Annual Breeders' Consignment Sale of Registered Live Stock held under the auspices of the New Brunswick Department of Agriculture and the Live Stock Breeders of the Province, was held in the Exhibition building, Fredericton, on November 21st.

Upwards of one hundred head of horses, cattle, sheep and swine, as well as a number of pure bred Barred Rock cockerels were lined up for sale.

Mr. Alex. Brewer, Keswick, acted as auctioneer. The ring committee consisted of Mr. A. E. Trites and F. L. Fuller, President and Secretary respectively, of the Maritime Stock Breeders' Association, and Thos. Caldwell, Florenceville. This trio of gentlemen had gone over all the stock offered previous to the hour of sale. They received the consignors upset prices, so that there would be no risk of the stock being sacrificed. The sales were bona fide throughout, each and every animal being knocked down to the highest bidder, providing the breeders upset prices was attained.

The valuators report that in every case they found the breeders quotations most reasonable and a general spirit of co-operation prevailing to help make the sale a success. Many of the prices quoted were considerably lower than the respective breeders would ask for the various animals at their home stables. The breeders realized that this was the first sale of the kind attempted in the province and each and every one of them were willing and ready to get it away to a good start, even if they sacrificed a few dollars by so doing.

The sale was originally planned for November 7th, but owing to the influenza epidemic and the consequent ban on public gatherings of all kinds, the sale was postponed indefinitely, as there was no knowing how long the ban conditions would obtain.

With the lifting of the ban came the selection of November 21st, as the sale date. As the season was getting late it could not be deferred any longer. The time between the date of notice and the date of sale was necessarily rathr short for an extended advertising campaign, but we believe the prospective buyers had their ear to the ground, and keenly watched for the announcement of dates through the public press.

Quite a number of prospective purchasers on learning that the sale was postponed until the ban would be raised, and not knowing whether it would be on for two weeks or two months, got busy and purchased their requirements direct from the breeders.

Then the Victory Loan took a lot of the loose cash that farmers who might not want to purchase an animal very abdly, who would be ready to recognize values and take a chance.

The weather man also did his best to keep down the attendance, as there was a steady downpour of cold rain almost up to the time of sale.

There was no demand for horses. No one seemed to bid even the reasonable figures quoted by the respective consignors.

The first animal sold was the yearling Holstein Bull, Faforit Champion, contributed by Harding Bros., Welsford. This youngster was first in his class and Junior Champion at Three Rivers and Quebec City shows last fall. His dam gave 55 pounds of 4.1 per cent milk as a heifer with first calf. His sister has a yearling record of 20,000 pounds milk and 811 pounds butter as a four-yar-old. The dam of Faforit Champion's Sire has a seven day record of 24 pounds butter and the grand-dam has 24 pounds of butter to her credit in seven days, as well as over 100 pounds of milk in one day. A Quebec breeder wired a $500 bid for Faforit Champion, having seen him at the shows last fall. Mr. Arnold Carpenter, Carpenter, N. B., the successful bidder, is to be congratulated in securing this combination of show and producing quality.

Red Archer, a Shorthorn yearling bull, contributed by R. A. Snowball, Chatham, was sold to The Centreville Agricultural Society, Carleton County, at $155.00, the highest figure realized for Shorthorn males.

The highest price realized for a Shorthorn female was $220.00 for Ruby, a seven year old cow, contributed by P. R. L. Fairweather, Rothesay.

Springbrook Prince George, contributed by McIntyre Bros., Sussex, headed the Ayrshire Bull class at $300. The purchaser was L. J. Donovan, St. John. This two year old bull is out of the cow Mona D., several times a winner in the Dairy Test at the Maritime Winter Fair, Amherst. Mona D. has given as high as 63 pounds of 4.8 per cent milk per day in official test. Springbrook Prince George is by Morton Mains Amanth, an imported bull that for several years was champion at Halifax, Fredericton and Chatham exhibitions. A clean bill of health went with every animal offered by Messrs. McIntyre Bros.

A magnificent flock of well fitted Cheviot Sheep, consisting of one ram and nine ewes, recently imported from the State of Maine, was knocked down to Geo. King, Sussex, for $615.00. Mr. King is a son of John H. King, now and for many years a breeder of Shropshire sheep. He is a young man who heard his country's call and who, having done his bit and after being wounded, was invalided home. This Cheviot flock is by far the nicest combination of the breed we have ever seen imported to the Maritime Provinces. In the hands of Mr. King they should be heard from later.

Several animals withdrawn from the sale ring on account of insufficient bidding we understand, were afterwards sold by private sale.

While the sale cannot be classed as an unqualified success, yet it was not a failure by any means when one considers the influences that mitigated against it. The breeders who contributed stock feel the sale was a move in the right direction and one that may well be tried again when we trust conditions will be more favorable.

Following is the list of the sales:

Shorthorn Males

Red Archer, 118053, contributed by R. A. Snowball, Chatham, N. B., sold to Centreville Agricultural Society for $155.00.

Snowabll, 121383, contributed by L. M. Anderson, Sackville, N. B., sold to D. M. Seeley, Maugerville, N. B., for $100.00.

Island Chief, 119375, contributed by L. M. Anderson, sold to Burton Agricultural Society, Burton, N. B., for $100.00.

(Continued on page 154)

W. R. Reek Appointed to Responsible Post

Head of New Brunswick Department will be Assistant Live Stock Commissioner for Canada--Has Assumed Office.

MR. W. R. REEK,

has accepted the position of Assistant Live Stock Commissioner, Ottawa

William R. Reek, secretary of New Brunswick Department, was ed to fill the important position of Assistant Live Stock Commissioner for Canada. On Thursday he left for Ottawa, accompanied by his family, and has already entered upon the discharge of the duties connected with his new post.

Mr. Reek's removal from the province will be a distinct and positive loss to agriculture in the Maritime Provinces. He came first to eastern Canada as the representative of the Dominion government agricultural branch at Ottawa. Later he assumed the control of the P. E. I. department, and under his guidance, reforms were introduced which have placed the Island at the forefront of the Maritime Provinces, in some aspects of its agricultural policy. Mr. Reek did things. And when he departed from Charlottetown to accept an important appointment in the agricultural department of his native province, he left behind him, in the changes he inaugurated, a legacy which has meant hundreds of thousands of dollars to P. E. I. farmers.

Mr. Reek's Ontario stay, however, was to be of short duration. When the present government sought a suitable man to fill the office of secretary of agriculture, they sent for Mr. Reek. After some negotiations, he accepted the provincial offer. There are few farmers, who have met Mr. Reek, who will not agree that he was a most capable official. He gathered about him a staff selected for the individual ability of each of its members. Political considerations were ignored by Mr. Reek, and he brought together a staff of young men, every one of whom is a worker, and each of whom knows the business of the particular branch in which he is engaged. Mr. Reek is a tireless worker and he enthused his following with his own aggressive policies. He did not spare effort by himself and he insisted that others follow his unselfish lead. He leaves behind him an organization which should accomplish much for agriculture in New Brunswick. That he held the esteem of those with whom he was associated was evidenced by the presentation to him of an address and a handsomely appointed travelling toilet set.

Mr. Reek, in his new position, will not be altogether lost to the province by sea. His duties will necessitate his prsence here during each year and he is expected to spend the early months of the new year at Fredericton. At Ottawa, he will doubtless bring to bear on his new department the sound judgment and industry, which enabled him to do such useful work in the east. Mr. Reek has thousands of friends in this part of Canada, whose best wishes he carries with him. They will follow his career with interest. That New Brunswick has sustained a loss is generally admitted. The Maritime Farmer adds its "good luck" to that of Mr. Reek's many other friends.

No successor has yet been appointed to fill the vacancy, but Mr. M. A. McLeod is acting secretary.

N. B. F. & D. A. EXECUTIVE PLAN 1919 PROGRAMME

The executive officers of the New Brunswick Farmers and Dairymen's Association assembled in the capital city on the evening of the 20th ult., to arrange a programme for the annual convention of the Association which will be held in February or March, 1919. We understand a good bill of fare is mapped out with ample room for discussion. The dates will be announced at a later date. In the meantime Agricultural Societies will appoint their delegates and instruct them to bring any matter of interest by resolution regularly before the Association for discussion and action. Let the next session of the Association be a live one—one that will in no uncertain terms voice the sentiments of the farmers of the province or matters of general interest.

nnual Meeting of Agricultural Societies United

Organization will have Plenty of Fertilizers--- Saving by Unmixed Goods About Twenty Dollars Per Ton

e annual meeting of the New swick Agricultural Societies Unit- as held at the Normal School ng, Fredericton, on Thursday the inst. The President, W. H. e occupied the chair. Those pre- and representing agricultural soc- were Boyd K. Merrill, DeWolfe, 64; Albert Wood, Coverdale, No. Arthur S. Jewett, Douglas, No. Fred H. Fowler, Chipman, No. 90; Huggard, Norton, No. 74; Ludlow Prince William, No. 38; W. B. n, Kingsclear, No. 147; C. M. , Peoples Union, No. 132; Roy in, Florenceville, No. 126; S. B. ht, Andover, No. 46; and H. B. Durost, Woodstock, No. 1; J. D. McKenna, Sussex, No. 21.

The financial statement for the year was read and adopted.

The following officers were elected for the ensuing year:

President—W. H. Moore, Scotch Lake.

Vice-President—Charles M. Shaw, Hartland.

Secy. Treas.—J. D. McKenna, Sussex.

Directors—J. Roy McCain, Florenceville; S. B. Wright, Andover; R. J. Huggard, Norton and Boyd K. Merrill, Moore's Mills.

An outline of the goods to be offered and prices was given to the meeting and the announcement that the Agricultural Societies United were saving by the sale of unmixed goods, as compared with mixed goods, twenty dollars per ton, on the average. It was suggested that all societies order promptly. Difficulties with transportation are expected and it was pointed out that fertilizers should be brought in as soon as possible. All information will be gladly given by the secretary-treasurer, J. D. Mcenna, Sussex.

Mr. E. M. Taylor, of the department of agriculture, Fredericton, addressed those present on the use of unmixed goods. A hearty vote of thanks was tendered Mr. Taylor for his assistance on this and other occasions.

New Brunswick Live Stock Breeders Organize

Wednesday evening preceding onsignment sale of live stock in ity of Fredericton, a number of sentative breeders assembled in ymnasium of the Provincial Nor- School to organize a New Bruns- Live Stock Breeders' Association, e aim will be to co-operate with Departments of Agriculture, local federal, and whose executive will s an advisory committee on live improvement matters with the rtment of Agriculture.

e live stock breeders of the prov- recognize that the Department of culture is putting forth an hon- practical effort in their behalf and behalf of the industry they repre- and feel that a closer co-operation exist through the medium of an ization of this kind.

. A. E. Trites, President of the time Stock Breeders' Association ded. The object of the meeting announced and heartily concurred all the breeders present, and the of organization was carried on.

It was decided that for the present an executive of seven would be sufficient and the following gentlemen were named to represent their respective breeds:

Horse—J. C. Jewett, Fredericton.

Shorthorns—R. A. Snowball, Chatham.

Holsteins—Thos. Harding, Welsford.

Ayrshires—A. C. Taylor, Salisbury.

Jerseys—J. H. Manchester, Apohaqui.

Sheep—Burder Goodwin, Baie Verte.

Swine—W. S. Harding, Hammond River.

These men will choose a president from among their own number, and Mr. Thos. G. Hetherington, Live Stock Superintendent for the province, will be secretary.

The Association was not many minutes in existence before the Scrub Bull problem got a jolt that will likely be heard discussed and acted upon at the next session of the New Brunswick Farmers' and Dairymen's Association. It will be well for all delegates to that Association to come prepared to make the jolt so severe that the scrub bull will be legislated off the highway and commons of this province without the necessity of complaints being made by one neighbor against another, or the alternative of using a sharp knife in the darkness. We also heard a gentle hint thrown out in regard to the scrub stallion. Scrub stallion owners may begin to get ready. The hand writing is on the wall and ere long the scrub stallion will go never to return.

GET THE MANURE INTO FIRING LINE

The handling of manure has always been regarded in most quarters as one of the evils necessary to farm work. If stable wastes were worth $25 a ton farmers would regard this part of their labor from another viewpoint and would see to it that in every way possible conservation of fertility elements should be guarded. For the sake of farming and those dependent for food upon what they produce, it is to be hoped so high a price may never be placed upon fertility. But with a valuation today so greatly in excess of what has been placed hitherto on fertility elements, the proper utilization of stable wastes becomes one of the primary factors in present day farming. No one can go far astray who keeps these wastes busy. At present valuations it is no time to haul manure simply when "one cannot do anything else." This is slacker philosophy. If need be, let certain other things wait. But get the manure into action on the firing line with the least delay.

When a man goes about bragging and boasting how good and wonderful he is and what great things he is constantly doing, the fewer people will shout his praises after he is dead. It is usually the humble quiet man who is kind and sincere; and such a man is missed from a community to the extent that people will continually speak of his virtues.

THE MARITIME FARMER.

And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

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The Maritime Farmer, instead of giving you one receipt in the year for a paid subscription, sends you 24, or one every two weeks. You will find it on the GREEN COLORED LABEL on which your address appears. The date printed thereon is that on which your subscription terminates. If on payment of your subscription the date is not changed within two weeks, please notify us. No other receipt will be sent.

DECEMBER 3, 1918

DATES OF ISSUE.

December 3-17

BOOST YOUR NEIGHBORHOOD

There is one deligthful thing about farming which is not true of some other industries, and that is every farmer is really benefited by the success of his neighbors. In a progressive neighborhood, where good stock is kept and where farming is generally profitable, roads and schools are better, the price of farm land is higher, and owing to the fact that a great quantity of farm products is offered for sale, markets are better; so boost your neighborhood and your neighbors and by doing so help yourself.

SELECT YOUR SEED GRAIN NOW

The farmer who plans to select a quantity of seed grains in the field before they are cut and who in other ways follow the plan outlined by the Canadian Seed Growers Association, is looking well to his possibilities of reaping the most for his labors.

However, there are many farmers who do not make any attempt at seed selection in the field nor even at a fairly good fanning mill selection of seed grain. The grain goes to their seed drills as it comes from the threshing machine. The large, the small, the thin and plump grains, as well as all kinds of weed seeds are sown together to propogate their kind; but seldom if ever does the careless farmer of this class blame himself for poor harvest yields.

The grain has been threshed. From the threshing machine it has gone forth to the granary bins from which it will be fed out to the live stick on the farm.

Before any appreciable quantity of the grain is consumed, why not make a thorough fanning mill selection of the seed grain you will require for 1919, This is a rainy day job that pays handsome dividends.

SHEEP GREATEST ECONOMISTS AMONG THE FARM LIVE STOCK

A false idea that just at present is misleading some is that the sheep is a scavanger and does not need much good feed. It is true tht the sheep is very useful in turning weeeds and even brush into value, but a good supply of choice feeds should always be provided. The margin of profits will rise and fall just in proportion to this supply.

"In my own farming experience of over half a century," writes Geo. McKerrow, "I have found the sheep the greatest economist among my live stock. It eats over seventy-five per cent, of the weeds, gleans the grainfields after removal of the crop, utilizes the turnips and rape sometimes grown on these grainfields, crops the stray weeds and lower leaves in the cornfield just before it is cut, and in fact has been so useful that I would hardly know how to carry on a farm without a flock.

"Proper culling of the flock is economy that should be well looked after. All old ewes, those which raise their lambs poorly, and young ones of inferior quality, should be sent to market each year, and the best ewe lambs kept to improve and build up the flock. The only exception to these rules of culling is where an old ewe has proved a remarkable breeder and mother; retain her in the flock as long as she breeds well. But all of these good aged ewes should have extra feed and care winter and summer.

"In selecting the sire much can be done in building up an economically producing flock. A sire of medium size for the breed selected is better than the overgrown sport or the small fine-boned weaklin. He should be vigorous and active, compact in form, with well developed legs of mutton, wide loin and well sprung rib, good heart-girth, large eyes and wide nostrils, and at all times should be kept in good condition without being overgeshed.

"During service season he should have the best of care and attention an dnever be overworked".

FOUR COWS AND A $10,000 HIDE!

There'sa farmer in Ohio whose name is Peter Small made a mighty big mistake a few years ago. The mistake cost him over $10,000, says the H. F. News Bulletin. And all he has to show for it is a bump of experience and a lifeless hide.

Peter Small will never make the same mistake again. Peter Small did not swallow his loss and selfishly keep the story to himself. He was big enough to tell the dairy world, so that you and I and others would not lose as ne nad lost.

He took his hide to the Nationaal Dairy Show last year, and told the story of his mistake.

In the Peter Small exhibit there were five stalls. Four contained cows placidly chewing their cuds. In the fifth there hung the hide of the bull that had sired these cows. He had been slaughtered before Peter Small knew what his daughters could do. That was Peter Small's mistake.

He knows now. He kept a record of his cows after the bull was killed. He found that they averaged 25,210 pounds of milk, and 977.3 pounds of butterfat! And he had killed the bull that had sired them! He had killed for meat a bull that was worth at least $10,000. He had found out too late.

It was a lesson in cow-testing that cost Peter Small $10,000.

But the National Dairy Show gave it to the thousands of farmers, who attneded the show at Columbus last year for nothing.

THE FARMER'S PROFITS

Peter McArthur in the Toronto Globe says:—"Yesterady I received a letter from a correspondent who offered what he calls an unanswerable argument to show that the farmers are prospering in spite of the high prices of everything they have to buy. I think I have seen this unanswerable argument before, so it may be as well to answer it. He writes:

"Some years ago my father asked the price of an oil stove, and found that he could buy it for $12. This year he bought the same stove for $21. He figured out that when the stove cost only $12 it would have taken thirty bushels of oats to pay for it. This year the thirty bushels of oats will pay for the $21 and leave him about $5 to the good." My correspondent infers from this that the farmer's condition is improved to the extent of $5 in that transaction. In taking this view he is making a mistake very common among farmers. He has taken no account of the changed cost of producing the thirty bushels of oats. A few years ago I was able to hire a man during the busy season for $1.35 per day. This year similar labor costs $3 per day. This year my seed oats cost me three times as much as they did several years ago. If my correspondent would figure up the increased cost for seed grain, and the labor at seeding time, harvest and thrashing, he would find that the surplus of $5 would go glimmering. There is little value in an illustration of this kind for it can be used in many ways. Thirty bushels of oats will not go so far today in buying shoes, matches, the best kinds of clothing, and a lot of other things. But they will go farther in railway fares, paying old debts, paying the preacher's salary and similar ways. Of course, there is a lot more money in the country today than before the outbreak of war, though it is doubtful if its purchasing power is all that it should be. Still, that doesn't matter for some people.

EFFECTING REPAIRS

Implements should be kept under cover. Necessary parts should be procured without delay so that repairs may be effected during the stormy days of winter when it will not be seasonable nor advisable to attempt out of doors work. The practice of looking around about the time they are required in the field is a time waster. Man, machinery and power must be in readiness to take to the fields at the very earliest possible chance, when the seeding season arrives. Time lost effecting repairs at that season that could have been attended to in mid winter causes delay, consequent loss and less returns for ones labors.

* * *

Do not cross breed for best results in dairying. Get good grade cows and breed to a pure bred bull of the same breeding.

* * *

Systematic, well planned methods of management and work are sure handmaids of success in the dairy business as well as in any other vocation.

* * *

Comemricial fertilizers are high in price and difficult to procure. On every farm where live stock is kept a great deal of manure containing the plant food elements that cost so much when purchased as commercial fertilizers, is produced. Strange to say, however, too many farmers pay little or no attention to this gold mine of the farm and consequently the plant food value of the manure is greatly reduced before it is incorporated with the soil. The better care of the manure produced on the farm will stop one of the big leaks in the fertility of the farm.

)MMON DISEASES OF THE DI-GESTIVE ORGANS OF CATTLE

(By J. Hugo Reed, V. S.)

(Continued)

Impaction of the Rumen

Cause.—Impaction of the rumen is e of the most common diseases of e stomach of the ox. It consists in stension of the rumen with solid atters. It is a pathological condition mewhat similar to tympanitis, but ffering in the urgency of its symp-ms and the method of treatment. It pends upon introduction of solid atters to such an amount as to par-lly or wholly paralyze the organ by er distension. Some foods appear ore liable to cause the disorder than hers, as grain, chaff, or potatoes. t any thing particularly palatable to e animal may be consumed in such antities if opportunity presents it-f. Sudden changes of food, espec-ly is the change be to a food partic-arly palatable, overfeeding on grain thout allowing the animal to take ercise, indigestible food such as er-ripe hay, food of poor quality en if consumed in only moderate antities, may cause the trouble; the imal continuing to eat, but not rum-ating sufficiently, the amount if in-st a gradually increases in the ru-en. This distends its walls until ey become partially paralyzed; nce the normal contraction and re-xation does not take place, and the rmal churning motion is absent. We quently notice a case of impaction thout appreciable cause, which, no bt, is due to a temporary suspen-n of the action of the walls of the gan, or a failure in action of the nds, for which we can give no ase.

Symptoms.—The animal becomes ll and suffers pain, which is often pressed by stamping of the feet, iking at th eabdomen with the hind t, switching the tail, etc. The se is frequent, and the respirations ually accelerated. Appetite is lost l rumination suspended. The bow-are usually constipated. The ab-men is enlarged, especially on the t side , but this does not occur so ickly as in tympanitis; neither is it the same nature. When tapped ween the point of the left hip and last rib a dull sound is produced. l when pressed it has a doughy l, and the imprints of the fingers not quickly disappear—when the mal is lying down—especially if ng upon the left side, a position t is seldom maintained for any con-erable time. In the later stages mpanitis often sets in as a compli-ion when, the resipration becomes re labored, the grunt during expir-on more pronounced, in some cases embling a groan rather than a nt. The patient often grinds his th and persists in standing with truded muzzle and arched back. In ne cases inflammation of the rumen ults, when there will be a well-rked increase of the temperature l the patient wil lmanifest pain if ssure be made on the left side.

The foregoing symptoms are more less well-marked in severe cases. in cases of less severity the pat-t occasionally appears to have per-s of ease and expresses a desire food. If food be allowed he will a variable amount with apparent ish, but the symptoms of illness n become more marked than be-e. This is of necessity the case, the walls of the rumen are more or s inactive and the mucous glands o are in a state of partial inactiv-; the organ is not performing its per function and the introduction r fresh supply of food must inten-r the trouble.

Treatment must be directed to the moval of some of the impacted food ss and the resoration of activity to over-distended walls of the rumen. en the distension is not excessive brisk purgation of 2 drs. Epsom gs, ½ oz. gamboge and 2 ozs. ginger about 1½ quarts of warm water should be given as a drench. This is a fair dose for an ordinary sized cow, the dose for smaller or larger animals should be in proportion to size. In order that the purgative may act it is necessary that the paralysis of the walls of the organ be overcome. For this purpose nerve tonics, as nux vomica in 2 dram doses (for an ordinary sized cow) should be given every six or seven hours. It is not wise to allow the patient any solids to eat until there is a free action of the bowels. If he expresses a desire for food a little bran mash may be allowed. If purgation has not commenced in 36 hours more purgative medicine should be given. About 1½ pts. of raw linseedoil should be given and alternated every twelve hours with 1 lb. Epsom salt and 1 oz. ginger, until purgatino is established. The administration of nux vomica should be continued in the meantime. The patient should be allowed all the water he will drink. If the weather and surroundings be cold it is wel lto remove the chil lfrom the water.

It is remarkable how stubborn some cases are, the length of time an animal will suffer and the quantities of purgative medicines it is necessary to administer before an improvement is noticed. If the disease is not yielding to treatment after the second day it is necessary to give the patient something to sustain strength. Probably for this purpose nothing acts as well as boiled flax-seed administered as a drench in about quart doses four or five times daily. This is laxative, saathing and nutritive.

So long as tympanitis does not occur the probability of successfull treatment may be looked upon as hopeful. If it occurs the usual treatment for bloating must be followed in addition to that already noted. In cases where the early symptoms of the disease are extreme an operation called "rumenotomy" is necessary. This consists in cutting through the skin, muscles and wals of the rumen and removing a large portion of the contents by hand. The operation can be successfully performed only by a veterinarian.

What is commonly called "Grain Sick" is simply impaction of the rumen with grain. When an animal is known to have had the opportunity of eating excessive quantities of grain, the usual custom of shutting him in a stable, alolwing him neither food nor water, and awaiting developments is absurd. The owner should anticipate trouble by a tonce administering a brisk purgative, as for impaction. Allow him nothing to eat, but allow all the water he will drink in small quantities and often, in the hopes that purgation will commence before the grain swells and causes paralysis of the walls of the rumen. Of course, in cases of "grain sick" where the early symptoms are severe, rumenotomy should be performed at once.

Fardel Bound

Causes.—Fardel bound is the name given to a pathological condition which consists in impaction of the omasum or third stomach. It is also known as maw bound, vertigo, staggers, etc. The ingesta becomes impacted between the leaves of the organ. It is sometimes followed by inflammation of the stomach. It is a much more serious condition than impaction of the rumen. The contents of the omasum are normally drier than those of any other compartment of the stomach, but when this disease is present they become very dry, so dry that in some post mortems it has been observed that they will burn if lighted with a match. The disease is caused by introduction into the stomach of food of an indigestible character, particularly that of a dry, woody nature, as autumn grass that has been allowed to remain in the field until spring, and is consumed in greater or less quantities by the cattle along with the fresh grass; over-ripe hay, poorly saved hay, straw, coarse and indigestible herbage sometimes found in old pastures, especially where considerable shade is found. Like other diseases of the stomach, it is often met with when no well-marked cause can be traced. It is difficult to treat and often proves fatal.

Symptoms.—The symptoms of fardel bound are not as typical as those of bloating or impaction of the rumen. In many cases ,in the early stages, fæces are passed frequently and in small quantities, in some cases in a fluid or semi-fluid state, and in others quite dry and hard. In either case obstinate constipation soon follows, the appetite becomes impaired or entirely absent, rumination ceases, the secretion of milk is more or less suspended (if the patient be milking), the muzzle becomes dry, and the eyes usually dull but in some cases wild looking. In rare cases delirium is noticed in the early stages, the patient becomes wild, more or less furious and hard to control. A short grunt is often noticed during expiration, especially when the patient is lying. This symptom is often noticed in cases of impaction of the rumen, but the condition if the abdomen, especially on the left side, is sufficient to enable a man to differentiate between the disease. Respirations are usually ferquent and short. The patient often persists in standing, but in some cases lies considerably on his left side with the head turned towards the flank. Pressure on the right side under the false ribs often causes pain. After a variable time there is usually more or les tympanitis, caused by fermentation of the contents of the rumen, in which digestion is also supended. As stated, delirium may be noticed in the early stages, in other cases it may occur later on, while in still others there is drowisness and stupor or partial paralysis more or less marked during the whole propress of the disease. The patient suffers acute abdominal pain.

Treatment. — Some recommend bleeding. Where the brain appears markedly affected the extraction of 4 to 6 quarts of blood from the jugular vein is good practice, but when the brain symptoms are not well marked blood letting is seldom parctised. It must be understood that there is paralysis, either partial or complete, of the muscular walls of the viscus and also of the muscular fibres of the manyplies, and that laxatives or purgatives will not act satisfactorily until this paralysis is overcome. The actions of purgatives are often very peculiar and disappointing. In a reasonable time after the administration of a purgatiive there generally are two or three slight liquid evacuations and the attendant thinks that free purgation has commenced, but these symptoms are often quickly followed by a return of the constipation. The administration of a brisk, saline purgative (as for impaction of the rumen) at first, is considered good practice by most practitioners. While in a general way the purgative action of aloes is very slightly marked in the ox, it is supposed to have a special action on the contents of the third stomach; hence it is good practice to add 6 to 8 drs. of aloes to the ordinary purgative, all dissolved in watre and given as a drench, care must be taken to not use hot water, as it will cause the formation of a waxy mass out of the aloes. Follow up with 2 to 3 drs. of nux vomica three times daily to overcome the muscular paralysis. Also give a stimulant of 2 to 3 ozs. sweet spirits of nitre, or a cupful of whiskey in a pint of cold water as a drench every four or five hours, and allow the patient all the cold water he will drink. If free pugartion has not commenced in twenty-four hours give 1½ to 2 pts. of raw linseed oil, continue the administration of nux vomica and stimulants and about every twelve hours until fre epurgation is established, give 1 lb. Epsom salt and 1 oz. ginger, and 1 to 1½ pints raw linseed oil alternately, i. e., give the saline dose and the oil alternately at intervals of twelve hours. If the patient will take a little food, allow reasonable quantities of bran mash with a little linseed meal, but no solid food. If he will not eat, some nourishment must be given after the second day in order to keep up his strength. For this purpose some practitioners recommend ale or stout, some recommend olt meal gruel, and some boiled flaxseed. Probably the last mentioned, given in 1 to 2 qt. dosesevery six hours, gives the best results. This has a soothing effect upon the irritated and more or less inflamed mucous membrane of the stomach, and also a laxative as well as a nutritive action. Treacle or black strap molasses is highly prized by some for the treatment of this and other diseases of the stomach, and is worthy of a trial. Treatment should be kept up until the patient improves or death results.

RECORDS AS AN AID IN FARMING

Is there any business that means a life's work that does not require records of some kind; is there any business more complicated than farming; are there more factors in any business that influence the final result than there are in farming? The farmer has nothing to say about what he shall pay for anything, and very little about what he shall receive for any of his products. He places all faith in kind Providence and her elments. Should he not also practice selection of profitable products, and a system of cropping or arrangement of production factors that mean economy of production? It seems that the time is not far distant when the farmer will have to know more of the inside of the business in a financial way than he has known or knows now. Indeed, all signs indicate this necessity.

Each farmer by figuring with known factors on his operations can eliminate the losing enterprises and concentrate on those that are profitable. It may be that co-operation and improved methods of marketing will increase farm profits, but the fact remains that some enterprises at that time will always be most profitable. These should be selected and this can only be done by the use of the records that record facts.

LIKES THE MARITIME FARMER

The following letter from one of the best known business men in New Brunswick, comes to the Maritime Farmer, unsolicited. It speaks for itself, and is as follows:

Dear Mr. McKenna:—

Enclosed find cheque for $4.00, being four renewal subscriptions for "THE MARITIME FARMER."

I wish to add my testimony to probably many others as to the excellence of your paper as a medium for exchange of views and purveyor of most valuable information among the farmers of the Maritime Provinces. It is so far ahead of any other periodical of its kind, in being so intimately connected and acquainted with the farming industry of this section of Canada and therefore of such help to the farmers here that I do not believe a farmer of these districts can afford to be without it. I have felt so enthusiastic in this respect that I believe it is only fair that you should know it.

Milking may be a simple operation, but not every one is a good milker. The cow is largely a creature of habit and should be milked quietly and quickly.

If there are some cows that are dry now, but are due to freshen early, it will be good policy to give them an allowanace of concentrates, as experiments have shown time and time again that the extra feed given to a cow while she is dry is again recovered in the increased milk flow after she freshens.

HORTICULTURE.

CIDER VINEGAR FROM CULL APPLES IS EASILY MADE

Good cider vinegar can be made on the farm by subjecting apple cider to a process of alcoholic fermentation by which the sugar in the apple juice is changed to alcohol, producing what is commonly called hard cider, and then subjecting the hard cider to a process of acetic fermentation by which the alcohol ic hanged to acetic acid. The acetic acid gives to vinegar its characteristic sourness.

Windfall apples which are not green or rotten, small apples, and any sound apples that cannot be marketed as fruit may be used profitably for vinegar making. Neither green nor rotten apples will make good cider or vinegar. Dirt, grass, leaves and any foreign substance, if allowed to get into the press with the apples, will not only injure the flavor but may retard the vinegar-making processes. The apples should be ground fine and then pressed slowly. As much of the juice as possible should be pressed out, but it is not profitable to add water to the pomace for a second pressing. The cider should be allowed to settle for a day or two in loosely stoppered barrels or other covered receptacles.

There are two well-known processes for converting hard cider into vinegar. One is known as the slow-barrel process. This is the simplest and requires the least work and attention, but has the disadvantage of requiring a long time for completion. The second method is known as the rolling generator process, which is more elaborate and requires daily attention.

Slow-barrel Process

The hard cider is carefully drawn from the containers in which the alcoholic fermentation took place in order not to disturb the settlings at the bottom, and passed into barrels for the final or acetic acid fermentation. The barrels should have been prepared by thorough cleaning and soaking with strong vinegar, and then placed on their sides with the bunghole up. They are filled about three-fourths full with the hard cider, and a few quarts of good vinegar are added to each barrel to hasten the change to acetic acid. The fermentation by which the alcohol of the hard cider is turned into acetic acid of vinegar now takes place. In order that this fermentation shall take place rapidly, it is necessary that the hard cider shall be in contact with the air, and for this reason the bungholes should be left open. It is well, however, to tack a piece of cheesecloth or of well-painted wire screen over the bunghole to keep out insects and dirt. Keep the temperature as near 65 degrees to 75 degrees F. as it is practicable. Fermentation should be allowed to proceed until good strong vinegar is produced. Such a vinegar can be recognized by its taste. It will contain not less than 4½ to 5 per cent. of acetic acid. The time required for fermentation is usually from 12 to 18 months.

After the proper strength of the acetic acid has been developed the vinegar should be drawn into barrels which have been cleaned thoroughly. Care shoulid be used to prevent the sediment in the bottom of the barrels from being transferred to new barrels. The barrels should be filled and tightly bunged and kept in a cool cellar. If vinegar is exposed to the air after the proper strength of acetic acid has been developed it loses strength, as the acid will be destroyed. By allowing the vinegar to remain in the tightly bunged barrels for three or four months it develops a fine mellow odor and taste, characteristic of the best cider vinegar.

Rolling Generator Process

When it is desirable to shorten the time required for converting the cider into vinegar the rolling generator process may be used. This process requires more work and attention than the slow-barrel process, but by providing for a greaterf circulation of air through the generator fermentation is hastened.

The rolling generator consists of a barrel placed upon its side with the bung hole at the top and divided by a slatted partition running lengthwise placed a little higher than the centre of the barrel. A few holes are bored obliquely downward, just beneath the slatted partition and ni both ends of the barrel. The purpose of these holes is to provide a circulation of air thriugh the generator. To operate the generator the upper part is packed with beech shavings or corn cobs and the shavings or corn cobs thoroughly soaked with some good, strong vinegar. The interir or the barrel should also be well rinsed with the vinegar.

The barrel is then filled nearly half full with hard cider and a few quarts of good fresh vinegar added. The barrel is mounetd on skids or trestles. All the air holes and bungholes are closed with plugs and then rolled so that the top (the bung side) is down, thus causing the cider to run into the shavings or corncobs. The barrel is then moved back to its proper position with the bung side up and all the plugs are removed. It is allowed to stand in this way while the cider drips from the shavings back into the the lower part of the barrel. As there is a circulation of air from the end holes through the shavings out of the bunghole the dripping cider comes in contact with the air and the process of fermentation is hastened.

The rolling of the barrel should be repeated two or three times a day, or more frequently, according to the convenience of the operator. As fermentation progresses considerable heat develops, and to obtain the best results the temperature of the upper portion of the generator should be regulated to about 85 degrees F. The temperature can ve lowered by inserting plugs to decrease the air current passing in at the end holes. To raise the temperature, increase the supply of air by removing some of the plugs. If the rolling of the barrels is attended to every day and the temperature maintained at from 80 to 85 degrees F., hard cider may be converted into good vinegar by this method from 60 to 90 days.

The vinegar may be aged in exactly the same manner as when made by the slow-barrel process.

WINTERING OF BEES IN ONTARIO

The beekeepers of Ontario lose each year from 10 to 50% of their colonies through winter and spring losses.

American bee literature is full of theories on the wintering of bees and on the causes of the losses therefrom. Many of these theories have been rejected or ignored. As the result of numerous experiments and a free interchange of ideas, however, successful beekeepers have evolved methods of wintering based on principles which recent scientific research has on the whole proved to be correct.

Beekeepers in Ontario adopt two methods of wintering. Some place their hives in a cellar and attempt to keep the bees inactive by controlling the environment factors, such as light, temperature, ventilation, etc., till the weather permits the bees to renew their summer activities. Others protect the hives o nthe summer stands, leaving the bees free to go out and to fly whenever the weather permits them to do so. Both of these methods, if intelligently carried out, give good results.

For outdoors wintering the hives are placed in collapsible wooden boxes the sides, of which are joined by cleats. Many beekeeepers place one hive in each box, others two and others four per box. In this last case two hives are placed facing west and two others facing east. Between the box and the hive is a space of 3 inches ad between the roof of the hive and that of the box a space of 8 or 10 inches is left. The box is placed on a solid stand 8 inches high which prevents draughts of air underneath.

The entrance holes are cut in the side of the box so that the bees may go out in suitable weather. The hives are packed for winter as soon as possible after the supers have been removed, and in October the bees are given a nabundant supply of maple sugar. The author gives the measurements of the different parts used for constructing wintering boxes, the size of which depends on that of the hives.

Till a few years ago the most common method of wintering in northern climates was that of keeping the hives in a cellar. Most beekeepers in Ontario and the northern States found that their bees wintered better in cellars than out of doors. Since the improvement of the method described above, however, outside wintering is generally preferred even as far north as New Ontario. Nevertheless, many stillprefer cellar wintering. The general conditions required for cellar wintering are:—(1) total darkness, (2) a uniform temperature between 40° to 45° F. The conditions are obtained most entirely underground as they are less subject to changes in out temperature. The air of the ce must be kept pure by a suitable s tem of ventilation, and must be ne er too dry nor too damp.

The hives themselves must h good ventilation; this may be ob ed by removing the summer co and placing on the top a layer of f a cushion of chaff, etc. The hives placed one above the other, those the bottom row resting on a stand least 1 foot above the cellar floor.

The hives are placed in the cel before the frosts, in southern On in the last days of November, a earlier in the northern districts.

Judgment must be exercised in t removal of the hives from the ce and the date depending on the co dition of the bees and on the seas The best time for setting them out the evening before or a day wh promises to be fine and calm, but n hot (60 to 70° F.) When such a d i sexpected the doors and windows the cellar are opened at sunset.

Directions are given for the pro tion of the hives in spring and f feeding the bees. There should be ample supply of food to avoid any da ger of starvation. Autumn is the be time for feeding bees for the follo

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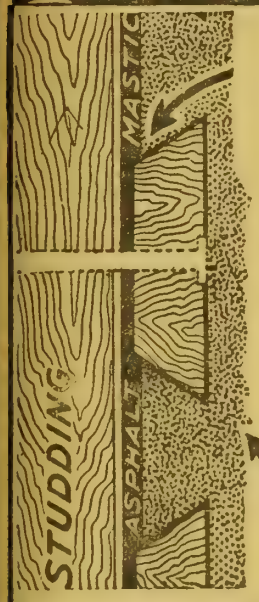

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ing spring.—By Petit Morley, Ontario Department of Agriculture.

THE FFRUIT BRANCH

Mr. C. W. Baxter, Chief Fruit Inspector under Section IX. of the Inspection and Sale Act (Fruit Marks Act) for Ontario east of Toronto and the Province of Quebec, has been promoted to the position of Fruit Cmmissioner, succeeding Mr. Donlad Johnson, whose death occurred in August. Before entering the Government service in July, 1912, Mr. Baxter had spent his life i nthe frui ttrade. When first appointed in the service he was made chief fruit inspector for the Prairie Provinces, with headquarters at Winnipeg, which position he held until 1914, when he was transferred to Ottawa and given the eastern supervision. During these years he was closely associated with Mr. Johnson in handling the major problems relative to the distribution of fruit and vegetables. On the reorganization of the Food Administration, when the Canada Food Board succeeded the Food Controller, Mr. Baxter, while still an officer of the Fruit Branch, was placed in charge of the fruit ane vegetable section of the Board. On the completion of the licensing system an enforcement section was created and Mr. Baxter wa sgiven its charge. Mr. Baxter has entered upon his new duties as Fruit Commissioner.

Notice of Meeting

The annual meeting of the SHAREHOLDERS of the United Farmers Co Operative Co., N. B., Ltd., will be held in the Town Hall in the Town of Woodstock, in the County of Carleton Wednesday, December 11th, at 2 p. m. Make a special effort to be present. Important business.

C. A. KING,
Sec'y-Treas.

OILING HOGS FOR LICE

I have had a good deal of experience in oiling hogs and consider that good oil properly applied comes about as near being a panacea for the ailments of the swine family as anything that may be used. It is of much importance that the skin and hair of the hog be kept in a healthy condition, and there is nothing I know oi that will do this as effectively as good oil. In those cases where the skin is not in a healthy condition, the oil has a curative effect, and any lice or vermin preying on the animals are readily destroyed by it.

There are various ways for applying the oil and one which requires the least work on the part of the owner is the logical one to use. Some farmers who have a hog wallow simply pour a quantity of the oil on the surface of the water and depend on the scum of oil on top of the water coming in contact with the skin of the hogs as they wallow in the wallow. I do not like this method because too much oil is wasted and the hog is never oiled sufficiently to do him much good. Others apply the oil with a sprinkling pot, a spray pump, a brush or a broom, and I would rather apply the oil by one of these methods than not use it at all, but it is certainly no pleasant task to oil the hogs by hand, and there is always more or less waste of oil, besides the job is not usually done as often as it ought to be.

My hogs oil themselves by means of the patented hog oilers to be found on the market. The oiler consists of a horizontal iron roller, the bottom of which is submerged in a small resorvoir of oil. As the hog rubs against this roller there seems to be some kind of an inborn habit that causes him to revolve it in such a way that the oil coated surface of the roller rolls up against his skin and deposits oil on that part of the skin in contact with the roller.

The roller requires no attention except to keep oil in it, and there is no waste of oil. The oiler is so constructed that both large and small hogs can use, it, and I know they find enjoyment in doing so. The hog is a great conserver of energy and he will not do anything that does not make him feel more comfortable. The oiler can be set up anywhere or moved from place to place, and is ready for work at any time of the year. Whether one keeps few or many hogs he will nfid an oiler a good investment.

If, however, one does not buy an oiler, he should make some kind of an arrangement to oil his hogs at the minimum of trouble. This may be done by setting a post firmly in the ground and wrapping it securely with heavy strong burlap which is kept saturated with oil from an old pail or vessel of some kind fastened on top of the post. The burlap extends into this vessel and draws out oil on the principle of a lamp wick.

The kind of oil to use is a matter to be carefully considered. Ordinary crude oil is the cheapest and is used by some farmers, but there are some objections to its use. In hot weather it may burn and srark the skin for the same reasno that kerosene does this, as kerosene has not yet been entirely ditilled out of the crude oil. A neighbor of mine who used crude oil in his oilers, said that his hogs licked so much of the oil that it affected some of them in such a way as to cause them to act srazy. I am of the opinion that the gasoline in the oiler intoxicated them.

Another neighbor said that during a cold day in the winter he applied crude oil by hand to seven of his hogs and five of them died shortly afterward. The local veterinarian informed him that too free application of the oil in cold weather produced spinal congestion. The kind of oil I use is common luhricating oil. It has the same qualities of kililng vermin and disease germs that the crude oil has, and there is no danger in using it at any time of the year.

Hogs should be kept so they are able to oil themselves as required. It is little trouble to make a simple oiler at home which will do the trick. Hogs free from lice thrive much better than lousey ones. If you doubt it, try oil-

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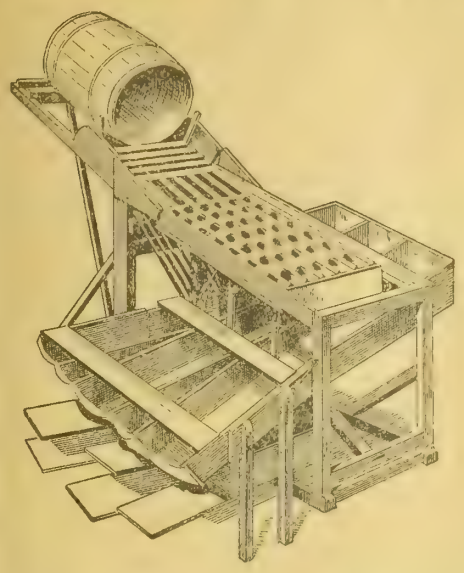

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DAIRYING.

DETECTING BAD ODORS AND BAD FLAVORS IN THE COW'S MILK

A little knowledge of the causes and results of bad odors and flavors in the milk supply may save a lot of valuable time and also prevent the rejection of the supply at the creamery or shipping station. In tracing the cause of bad odors and flavors in milk it is necessary first to determine whether or not the infection is present when the milk leaves the udder of the cow or develops later. If any particular cow is giving milk which is tainted it is not due to bacteria, but to other causes.

To determine whether or not bacteria are the cause of the trouble, fill a pint bottle with fresh milk, cap it tightly and place it in water reaching well up to the neck. Heat the water to the boiling point and hold it there for about half an hour. Then remove the bottle and cool the contents down to about 90 degrees Fahrenheit. Pour into the bottle one tablespoonful of the tainted milk and mix it thoroughly with the contents. If, after standing twelve hours in a warm place, the milk in the bottle develops an odor or taste similar to that observed in the milk being tested, it is quite likely that the bacteria are present which have caused the trouble.

If bacteria are causing the trouble give the utensils a thorough cleaning to determine the source of the taint producers. Often when they find lodgment in the utensils the trouble will no longer appear after things are thoroughly cleaned. If there is no further occurrence it is no longer necessary to seek the source of the bacteria, as they probably were present in the utensils.

If cleaning and sterilizing the milk utensils does not remove the trouble, the water supply should be tested for bacteria. In making a test of the water fill a pint bottle with clean milk, one for each source of water supply, heat it and cool it as when testing the milk for bacteria. Pour one tablespoonful of water from the well to the numbered bottle. In another bottle the same quantity from the cooling tank and in another the same quantity from the source from which the water used for supplying the colling tank is obtained.

If after standing twelve hours in a warm place the milk in one of the bottles develops an odor or flavor similar to that in the milk being tested, the source of the water used to inoculate it would then be indicated. If the water in the cooling tank alone is infected the bacteria probably have found lodgment in the tank itself. To destroy them drain and thoroughly clean the tank, then wash it out with one part fresh burn lime and four of water. It is not often that a well becomes infected, and when it does not much can be done for it. In some cases the water must be boilied before being fit for dairy use. In some cases ropy or stringy milk is caused by bacteria which are prevalent in shallow ponds or streams in which the cattle wade. These same bacteria frequently find their way to the cooling tank. Should the water supply show no indications of the presence of inoculating baacteria the stables should be given a thorough cleaning and disinfecting.

Clean the walls and ceiling and give the whole interior a coat of whitewash. Disinfect the floors and keep the manure cleaned up about the stable and yards. See that the milk is removed from the stable as soon as possible. Use judgment in feeding strong-flavored feeds like silage which may taint the milk if the latter is left in the barn.

If the tainted milk or the water supply fails to develop the taint in the freshly heated milk in the bottles it is pretty certain that bacteria are not the caus eof the trouble. After taking proper precautions to eliminate all danger of the milk becoming tainted through absorption of the taint from the stable or the milkroom, samples of milk from the individual cows should be saved and tested. If the milk from several of the cows shows the taint it is probable that the feed supply or something which the cows have eaten ni the pasture is causing the trouble. Cabbage, potatoes, turnips, wild onions, ragweeds, brewer's grains an dmusty grain feeds frequently cause bad odors and flavors in the milk. When the trouble seems due to the feed and there is nothing in the ration that should cause the trouble, a change of feed may eliminate it in a few days. Some kinds of feed have a tendency to affect tne milk of certain cows that may be fed with impunity to others.—W. K. M.

RECIPROCITY IN REGISTRATION

A significant piece of constructive work was done by the board of directors in its meeting at Detroit, July 22. We refer to the reciprocity arrangement worked out by President Aitken and ratified by the board and a delegation from the Canadian Association, subject to the final okay by the membership of each corporation at its next regular meeting. The details of this plan were given in the news columns of the World last week. In brief, the plan involves complete recognition of the herd books of each association by the other. In the past the Holstein-Friesian Association of America has required that before a Canadian animal is acceptable for registry in our books, all its ancestors shal be registered in our books likewise. The Canadian breeders have contended for a long time against this arrangement, arguing that as their animals originally came almost without exception from the United States where they were registered in the America nbooks, there could be no question of their purity of breeding, while the trouble and expense of registering all the animals back to the American books was a serious handicap to them in disposing of their cattle on this side. As a measure of self-defense the Canadian fee for import certificates was raised to $25 for males and $10 for females. In previous conferences on this subject one point of difference has been the disparity of the registration and membership fees in the two associations. Mr. Aitken solved this problem by suggesting the provision that all animals should be registered first in the books of the association in whose jurisdiction they originated before being eligible to registry in the books of the other associations. In return for these concessions it is expected that the Canadian breeders will revise their fee for import certificates. The details of the plan are being arranged jointly by Secretaries Houghton and Clemons.

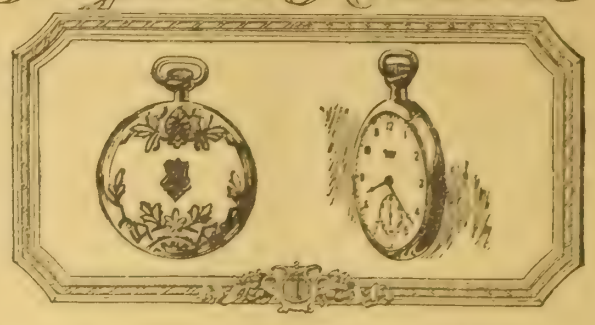
This action by the two greatest breed associations exemplifies the spirit of co-operation and closer bonds of friendship existing amng the allies tday. Recent events have demonstrated unmistakably that we, on this side, need Canada's Holsteins, and we are willing to pay top prices for her top quality. In the Milwaukee sale it will be remembered, tne sensational $106.000 bull calf was a Canadian product combined with a little American breeding. The dam for generations was Canadian bred, while several generations of the sire's side had been developed in Canada, although originating on this side of the line. Likewise, the remarkable 30-pound world's champion two-year-old, the outstanding individual of the sale in the female line, was bred and developed in Canada, although her sire came from northern New York. In short, Canada is breeding Holsteins that are as good as have ever been produced. We need and are willing to pay for her best. The same is true of the Canadian breeders with respect to American stock and a free and unrestricted interchange can mean only greater progress for the breeders of both associations. The World gives its unqualified endorsement to the action of our board and the Canadian delegation, and urges complete ratification of the plan at the annual meeting in Philadelphia next June.—The Holstein-Friesian World.

DEHORN THE DAIRY HEIFER

There are two methods of dehorning dairy animals. One of these which is widely practised is to alllow the horns t ogrow until the animal is fairly mature and then cut them off with special dehorning clippers. This methad removes the horn, gut it is a painful and bloody operation. The other method, is t oprevent the horns from developing.

The calves should be treated when they are from five to 10 days old, or when the horns are just beginning to show as small buttons and before they break through the skin. The hair should be clipped away from this part of the head with a pair of

Ingersoll Reliance



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ars. As soon as the skin is thus de visible, it should be broken h a sharp instrument, directly over centre of the appearing horn. A p cut should not be made. As soon the skin is broken, a stick of caus- potash should be rubbed on the n until the skin is removed over area slightly less than the size of lime. The caustic can be purchas- in small white sticks, about the e of of a pencil. One end should wrapped with paper or cloth to tect the fingers. Rubbing should tinue over the surface until it be- s to turn white. Too much rub- g may give bad results. As soon this is complete, it is well to ase around the treated area with eline.

t is usually better to use the caus- in a dry form rather than to use wet, because when too much mois- e is present, it may run down into calf's eyes and cause injury.

he caustic should be kept in an tight bottle because in the pres- e of air it becomes wet and sticky is difficult to handle. With a little erience, one can perform this op- tion in about five minutes and the ns will never develop, says W. W. ett, of the University of Missouri lege of Agriculture. In case it is properly done, short spurs will elop. These may be clipped off r a year or two, with very little ry to the animal.

WBARN COMFORT AIDS DAIRY PROFIT

his is proving the worst time of year to keep cows.

owever, it does not pay to neglect cows and let them drop off in milk flesh. If they are neglected it take more roughage and grain to them back to where they should e been, and chances are they will er do as well.

hear someone say: "Feed is too priced; we cannot afford to buy True, feeeds are high priced, but y products are going up too, and be higher on account of the large and. One-sixth of the human consumed is dairy products. If cows are fed and kept in good lition, even though you make only mall profit and sometimes break n, you will be repaid as the cows be in good shape to go to pasture spring and make a much bigger it than if no grain had been fed he winter.

oo many dairymen and farmers, le they know that their pasture is t, still expect their cows to keep e, say nothing about giving milk. n they wonder what is the matter their cows, as they all drop off milk, even those that have been h only a few months.

great mistake that is made and quite general, too, is leaving the s out at night in all kinds of wea- As long as there is a barn for n, why not put them in it and have n feel comfortable? One often s the expression used, "My cows be out until the snow flies; too h bother to put them in." It does no take any loner, and in most cases not as long, to clean out the barn as it does to g oout early in the morning to hunt up the cows and bring them in for milking.

Cows should be stalled over night from the time it turns cool in the fall. Some dairymen don't see it that way, but it is true. When the cows are exposed to cold weather they use the feed the yget to keep warm instead of giving milk. If they are turned out to a straw pile in the cold, how are they going to give milk?

MILK FROM DISEASED UDDER DETERMENTAL TO HEALTH

Milk from the udders of cows suffering from mastitis (commonly called caked bag, garget, etc.) should not be used for human food as some very troublesome disease may arise from doing so, especially in children. Milk from udders or portions of udders so affected nearly always contain harmful bacteria which multiply with great rapidity when the milk is drawn and these organisms may be responsible for anusea, vomiting and even diarrhoea in the consumer. Epidemics of septic sore throat in many instances have been traced to the milk supply having been contaminated by one or more cows in a herd which were suffering from mastitis. The pus present in milk from a mastitis udder may impart to the milk an unpleasant taste and the milk may curdle and putrify within a few hours after being drawn. If only one quarter of an udder is affected and a small top milking pail is used the milk from the healthy portions may be used. The diseased portion should then be milked into a separate vessel and boiled before being disposed of.—Wm. H. Feldman, Colorado Agricultural College, Fort Collins, Colo.

IT WOULDN'T BE DONE IN CANADA

(Hoard's Dairyman.)

At a meeting of dairy farmers, to consider the price to pe asked for milk, one of the farmers made a very pertinent statement. He said: "How do you farmers who are eating oleomargerine and producing milk square yourself with your conscience? Many of you have made the statement that dairy products are too cheap and when asked why you eat oleomargarine instead of butter, declare it is too expensive. If butter is too expensive for us, who produce it, to consume, how can we expect the wage earner to eat it? Aren't we setting a pretty poor example for the city consumers when we farmers eat oleomargarine instead of butter?

TYPHOID FREQUENTLY SPREAD BY MILK

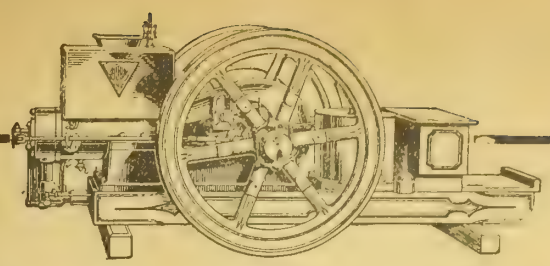
Milb-born epedemics of typhoid fever are the result of carelessness on the part of both the milk dealers and producers, and the city and county authorities.

"The city phpsician and county physician should exercise very close supervision over the milk supply and practicing physicians should immediately report cases of tpyhoid in the dairies to the end that immediate steps may be taken to protect the public," says Dr. Geo. H. Glover of the Colorado Agricultural College.

"When a case is discovered, either the patient must be isolated, or removed entirely from the dairy. The only alternative is to immediately suppress the milk supply from this dairy. It is not presumed that the dairy inspector, where there is one, is posted on health conditions of the family and he must rely on the family physician for this information.

"Milk should not be sold from a dairy where there is typhoid fever and the family physician is the one most responsible. This of course applies to the family that keeps one cow and sells the milk to the neighbors, as wel las to the regular dairies that do business on a larger scale.

"In Denver, a few years since, a milk vender was also nursing his wife, ill with typhoid fever, and fifty-seven typhoid cases developed on his milk route. Cases like this are not exceptional and the selling of milk from dairies and homes where there is typhoid should be one of the first subjects of inquiry."



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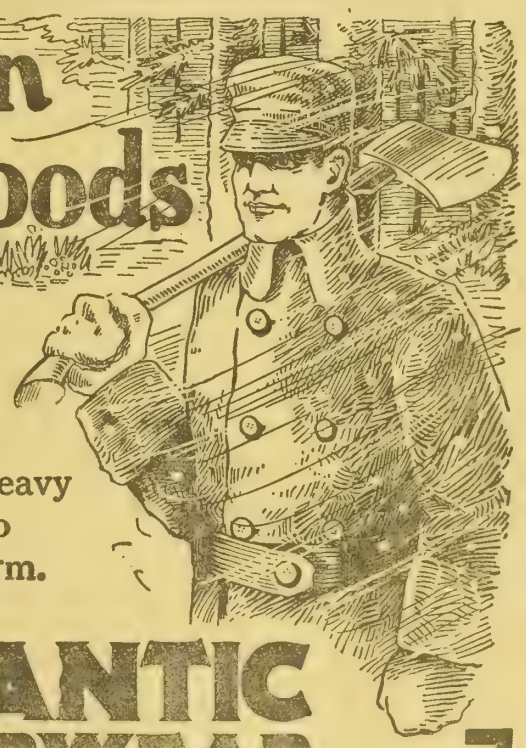

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LIVE STOCK.

THE SHEEP TICK—WHAT IT IS?

The Injury it Does, and How to Prevent it.

The major portion of the sheep flocks of Maritime Canada are now in winter quarters. Fresh from the fields in which they were furnished with abundance of succulent food to flush them for the breeding season, the closer confines of winter quarters find them in good condition to cope with the rigors of the approaching winter.

Have you examined the flock to see if it is free from ticks? Have you taken the necessary precautions to prevent ticks from gaining a foothold in the flock this winter?

The following treatise on "The Sheep Tick" by the manufacturers of one of the standard reliable sheep dips will be interesting to sheep owners, and if its contents will help our readers to protect their flocks from the ravages of vermin, the mission of this article will have been fulfilled.

(Ked or Louse Fly)

Though the commonest of all Sheep Pests, accurate knowledge about the Sheep Tick is rarely met with. In view of the interest the subject has recently aroused, especially in Tasmania, it will be opportune to lay before sheep owners some reliable facts about the Sheep Tick.

It may be well to explain at the outset that, though commonly known as the Sheep Tick, this parasite is in no way related to the True Sheep Tick, but is in reality a wingless fly, which a glance at its form would suggest. It is, indeed, in some parts of England, called the "Louse-Fly," because, like Lice, it deposits its eggs amongst the fibres of the fleece. In Scotland and elsewhere it is commonly called the "Ked." The true Tick, when adult, has 8 legs; the subject of this booklet is a 6-legged parasite.

The scientific name of the so-called Sheep Tick or Ked is "Melophagus Ovinus." As, however, it is known most commonly throughout the Sheepman's World as the "Sheep Tick," it is so termed in this treatise.

Distribution

The Sheep Tick is the most widely distributed of all Sheep pests, few flocks being entirely free from it. It thrives best on British breeds of sheep and their crosses. It is a restless insect, prone to constant movement in the fleece. Thus the dense fleece of the merino proves a less attractive haunt for it, and, in consequence, this breed does not suffer so much from its attacks.

The Sheep Tick is found in greatest numbers on those parts of the body which the sheep cannot reach or rub.

It is the common experience of Sheep owners that the virulence of this pest varies according to the conditions of season, affecting, as they do, the welfare and general health of the sheep. When the weather conditions are unfavourable, and the sheep are in consequence in poor condition, they become more subject to attack by parasites. On the other hand, when the sheep have been reduced to poor condition by the ravages of the Ticks, they are rendered less able to withstand an unpropitious season.

Some Flockmasters believe that when the sheep are feeding on root crops Ticks are more prevalent; but this possibly is explained by the fact that when on roots the fleece is long, and the Ticks, though hidden by the wool, have been increasing since shearing.

Indications and Results of Tick Attack

The presence of the Tick usually is indicated by the sheep nibbling at their sides, or rubbing against objects for the purpose of obtaining relief from the irritation which the Tick bites set us. Like many other parasites which pierce the skin, the Sheep Ticks inject a fluid into the wound with the object of preventing the blood from coagulating and thus rendering it more readily imbibed. The result is intense irritation or itching. Thus it will be realised that when the Ticks are numerous the sheep are in a constant state of torture and unrest, which causes them to go off their feed and lose condition, to the serious financial loss of the owner through their reduced market value, both in flesh and wool.

Life History of the Sheep Tick. (The Ked.)

This parasite spends the whole of its life on the sheep, except when some happening compels it, or enables it, to transfer itself to another member of the flock. In that respect it differs from the true Tick which, when gorged, falls off the sheep on to the pasture, living apart from a host for a considerable period, during which its eggs are deposited and young hatched out.

The female Sheep Tick lays only three to five eggs, at intervals of a few days, attaching them to the fleece by a sticky substance which she exudes, thus effectually preventing them becoming detached from the wool. These so-called eggs, which are the colour of apple pips, are not true eggs, but what are termed "puparia,j" in other words pupa cases. When they are deposited by the Female Tick they already contain living pupae or larvae, which previously have been generated in the parent's body.

Some 21 days after the eggs have been deposited in the wool, the end of the larva case breaks off, and the young insect emerges, and commences its active life in the fleece.

The aobve facts are of special interest in connection with the efficacy of dipping, and should be carefully noted and remembered by sheepowners, since the dippings must be so timed as to kill both the adult Ticks present at the time of dipping, and the young Ticks which may hatch out from the Tick-eggs; for these eggs, though present in the fleece at the time of dipping, are not devitalised by the effect of the Dip. If, however, the Dip is not of a volatile nature and is sufficiently lasting, it remains in the fleece strong enough to destroy the young Ticks as they hatch, especially as they are then very tender, and easily killed by a lasting Dip.

How Long Do Ticks Live?

It has already been mentioned that Sheep Ticks pass their whole life on the sheep. If they become accidentally detached from the sheep, and are thus deprived of their natural food—the blood of the sheep—they rarely survive longer than four days. Under exceptional circumstances they may live a week. In one recorded instance the issue from the pupa cases survived for nearly two weeks, but this must be regarded as a very exceptional case.

On the other hand, observation shows that Sheep Ticks pass readily from sheep to sheep. After the shearing, which deprives them of shelter, thy transfer themselves in great numbers to the longer fleeces of lambs, persecuting them relentlessly.

The Prevalence of Sheep Ticks Varies With the Seasons.

Climatic conditions, the condition of the sheep, and the character of the country, all have some influence upon the prevalence of Sheep Ticks. In wet seasons, and in wooded country, they are most in evidence. It has been seen already that poor condition of the sheep and Tick infestation go together; but it is not clear whether the Ticks cause the poor condition, or whether the poor condition is the reason of the more severe Tick infestation. The dictum—"Poverty brings Ticks"—may perhaps more truly be read—"Ticks bring Poverty."

The habits of the Ticks are greatly influenced by changes in temperature. In cold weather the Ticks are found close to the skin, either feeding or resting a little distance from the roots of the wool. In hot weather, especially in spring, they may be seen in active movement near the tips of the fleece, apparently enjoying the sunshine.

When feeding they bury their sucking tubes in the skin, and breathe through stigmata or pores which they possess on each side of the body.

Dipping for Ticks

In dipping Sheep for Ticks, although it is an important consideration to secure immediate destruction of those parasites which are alive in the fleece at the time of dipping, it is even more important to achieve the destruction of the young Ticks which subsequently issue from the pupa cases or "eggs."

These pupa cases are hard and glossy, and it is doubtful whether any known dipping preparation will penetrate them, at least with sufficient certainty to destroy the embryo within.

Thus, unless all the trouble and expense of a second dipping is to be incurred, it becomes necessary to use a Dip which not only kills the Ticks in the fleece at the time of dipping, but also maintains its killing properties in the fleece for a considerable period after the day of dipping.

The Dip which complies with this condition, and at the same time has no detrimental effect upon either sheep or wool, unquestionably is and must always be, the bets Dip to use.

The importance of using a Dip possessing undoubted lasting properties cannot be too strongly emphasised. A Dip which kills only the live Ticks, and does not last long enough in the fleece to kill also the young Ticks which hatch out after dipping, cannot possibly yield effective results.

Non-Poisonous Fluid Dips

Non-poisonous preparations, whatever may be claimed for them by those interested in their sale, do not possess these lasting properties, and in consequence they are useless for keeping the flock free from Ticks. However they are useful in other ways, as we shell see later.

Solubility of Dips

A reliable criterion of the lasting properties of a Sheep Dip is its degree of solubility.

Whn a dip instantly and completely dissolves in the ath water, it is obviously exposed to like effects from the rain which may fall on the sheep after the dipping, and which will then wash the dip completely out of the fleece. This is plain common sense that only needs to be stated to be believed.

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It follows, therefore, that a dip of this class can have no sufficient protective property; for its killing power will disappear in a few days, perhaps in a few hours, and there will be nothing remaining in the fleece to kill the young Ticks as they hatch out.

It takes about three weeks for the pupae of the Sheep Tick to mature and emerge from their cases. Hence it is clear that any dip that becomes inactive before this period has expired cannot have the slightest efficacy in permanently ridding the sheep of its Ticks. It may kill the Ticks which are alive and active at the time of dipping, but it cannot destroy the issue from the pupa case. In other words, it must fail in its purpose. This was proved to demonstration by prolonged comparative tests of poisonous and non-poisonous Dips by experts appointed by the Hawkes Bay Pastoral Association in New Zealand some years ago. They proved that all the Sheep dipped in non-poisonous Fluid Dips quickly again became infected with Ticks, whilst those dipped in poisonous Dips and run on the same pasture remained perfectly clean. All the conditions were exactly alike except that different Dips were used.

The Dip that Lasts

As bearing on this point, viz: necessity for "lasting powers" is a Sheep Dip, it may be pointed out that the manufacturers state that one of the chief objects in the mind of the inventor of our most popular Sheep Dipping Powder was to secure this absolutely essential continuity of action.

That he successfully solved the problem by his special method of manufacture is probably one of the chief reasons why that preparation has always held, and still retains, such

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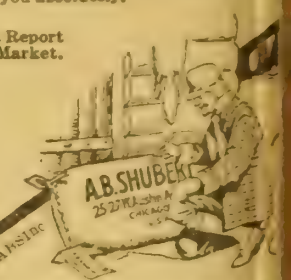

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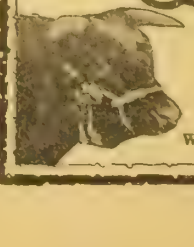

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markable favour amongst sheepowners in every part of the world.

It is so prepared that only part of its bulk dissolves immediately in the bath —sufficient, of course, to kill all insects alive in the fleece at the dipping.

The remaining part does not at once dissolve, but being in the form of innumerable very minute particles, which are kept in suspension in the bath water by thorough stirring, is distributed throughout, and retained by, the fleece, thus for many months acting as a preventive of re-infection.

Once these protective particles are dry and fixed in the fleece, ordinary rain cannot wash them away; on the contrary, each time they are wetted they are stimulated into renewed activity, with the result that it may be said that each shower of rain acts almost as a supplementary dipping.

It will be seen, therefore, that a dip having such lasting active properties is just the one to deal successfully with the Ticks, because it renders the fleece uninhabitable by those young parasites which emerge from the pupa cases subsequent to the dipping.

In other words, the new generation of Ticks which hatch out after dipping find their surroundings intolerable and soon die, particularly as, when they first emerge from the pupoe, they are naturally in a very weak condition.

Thoroughness in Dipping

In order to secure the full measure of protection from any sheep dip, it is essential that the user should contribute to the result by using the dip properly. He must mix the dip strictly according to the maker's direction, stir sufficiently during the dipping, and otherwise observe the instructions given by the makers for his guidance. An important essential is that the sheep should be kept moving in the bath sufficiently long for the wash to reach the insect pests, many of which will be on the skin with their heads buried in their hosts. Also there must be sufficient growth of wool at dipping to carry away enough Dip for the all-important protective purposes.

What is worth doing is worth doing well. A little trouble taken with the dipping will save much trouble afterwards.

The immense benefits that result from dipping sheep properly are even now hardly sufficiently understood by practical Sheepmen. They fail to realize the importance of thorough immersion to saturation, and the big difference in results between stirring the bath and thus ensuring that its valuable protective particles are distributed throughout the fleece of every sheep, and allowing these particles (for which they have paid good money, and which constitute one of the most important ingredients in the Dip) to sink to the bottom of the bath as useless sediment.

If there be failure, it is certainly due to lack of proper methods and not to the Dip.

When to Dip Sheep

Unfortunately, the practice of dipping sheep direct from the shearing board, is too prevalent in the Australian States, since it cannot be consistent with obtaining the best results from dipping.

When insect pests are little or not at all in evidence, and wool-improvement is the object aimed at, off-shear dipping may achieve the desired object. But in districts where sheep parasites abound, the dipping of sheep off the shears—British breeds especially —is unwise and unprofitable.

Dip makers recommend that dipping should be carried out with four to six weeks' growth of the merino fleece, and two to three months' growth on the British breeds, for reasons which are apparent from the foregoing, viz.: that the sheep may have sufficient fleece to carry away the protective particles of the dip.

The usual difficulty, of coures, is remustering; but sheepowners who realize how much their shearing returns depend upon efficient dipping choose the lesser of two evils, viz.:—to remuster and dip, because this course will, in improved condition of sheep and wool, more than compensate for the trouble it occasions.

The Bath Water

Another obstacle to satisfactory dipping results is the use of hard water, which only slowly penetrates a greasy fleece. If the water cannot get to the seat of the trouble, how can the dip it carries do so? Hard water is characteristic of limestone districts, and its hardness is generally known or easily recognised by its behaviour with soap. It may be softened by adding 2 lbs. of common washing soda to each 100 gallons of wash. Dissolve the soda first in hot water and then stir into the bath.

Whatever the length of fleece, successful results depend upon the penetrability of the wash, combined with immersion to saturation.

It is now becoming customary to add a non-poisonous fluid dip to the powder wash when the water is hard, to increase the penetration of the bath liquid; about 1 gallon of fluid dip to 500 gallons of powder wash will serve to counteract the effects of hardness in the water, and repays the small additional cost, owing to the increased efficiency of the dipping.

Short Baths

These are a common cause of unsatisfactory results, as they encourage shortening of the period of immersion. All Leading Dipp Makers recommend at least one minute's immersion; and for cross-breds this is not too long, especially when the object is to destroy young sheep ticks hatching after the dippings. In short baths the sheep rarely get more than a quarter of this period. When the bath is less than 60 ft. in length, it is essential that the sheep, particularly young sheep, should be prevented from rushing through and thereby losing the benefit of sufficient immersion. It is in short baths particularly that the fluid dip may be added with advantage to the powder wash (as above recommended unde rthe heading "The Bath Water,") to accelerate the pentration of the mixture.

Safety in Sheep Dips

Dipping newly shorn sheep, with open or undressed shear cuts with any preparation worth using as a sheep Dip, may result in loss if the wounds be bad and the blood of the sheep be not in good condition. For these and for other reasons, whatever the Dip used, it is then said to be "hard on the sheep." It is not that the Dip was hard on the sheep, but that the sheep were in an unfit condition for dipping. The chances are ten thousand to one that the condition of individual sheep is more likely to vary than the uniformity of a Dip of established repute. The surest proof of the safety of a Dip is the extent of its use, and its reputation amongst owners of valuable flocks. Considering the way that some sheep get gashed in shearing, and the frequent neglect to dress the wounds, it is a wonder that so few casualties occur, and they certainly cannot fairly be attributed to the dipping.

From Dipping to Shearing

Quite a number of sheepowners think that a dip should keep sheep absolutely clean from dipping to shearing. This old belief or tradition comes down from the times when pastoralists ran merinos only. With the enerality of merino flocks the belief is justified; but where British breeds prevail, it is not. These British breeds, as we have seen above, are more subject to parasitic infestation by reason of their loose fleces being particularly suited to the habits of parasites.

The makers of one of our most reliable Dips which is admitted to be the most lasting of all Dips, have definitely stated that "human ingenuity has yet to devise a preparation that can with one dipping, under all circumstances and all dangers of re-infection, keep crossbred sheep absolutely clean from dipping to shearing."

Nevertheless, when a good Dip is used with faithful observance of the directions, and there is enough fleece at the dipping to carry away sufficient of the protective particles, it practically accomplishes the feat under normal conditions.

It is a common remark amongst those who use this preparation according to directions—"Why! you can smell it at the shearing." This fact is evidence of the lasting effects of the dip, and it is not surprising that fleeces so impregnated with the dip that they "smell" to the human nose, are intolerable to Sheep Ticks which are furnished with very highly developed sense organs of smell and taste.

"Only a Few Ticks

here is a wide difference between sheep having ticks, and ticks having the sheep. When properly dipped in

(Continued on page 155)

The Basis of Profitable Dairying

The influence of feed on the production of milk is striking. No matter how good the individual dairy cow is, the quantity of milk she yields is, within wide limits, directly dependent upon the feed she receives.

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THE HORSE

VOLVULUS OR TWISTED BOWEL

Volvulus or twisted bowel consists of a rolling on itself of a portion of intestine (either large or small) until nothing can pass through. A knot practically exists. The symptoms and results are indentical with intussusception. The existence of either condition can be suspected only, and treatment should be directed to relieve pain by administering 1 or 2 ozs. of chloral hydrate either in bolus or solution every two or three hours. If gases form give 2 to 3 ozs. oil of turpentine in a pint of raw linseeed oil. Keep comfortable; apply to the abdomen cloths wrung out of hot water, and give rectal injections of warm, soapy water. If the pain becomes relieved give a laxative of 5 to 8 drs. of aloes and 2 drs. ginger, and follow up with 1 to 3 drs. of nux vomica three times daily. Of course, if either of the above-mentioned conditions exist, treatment will be of no avail, and death will take place unless a spontaneous righting of the involved bowel takes place; but if it be a case of constipation without displacement of intestine a recovery will probabyl take place.

Intestinal Concretions of different kinds occasionally form in the stomach or intestines, probably more frequently in the large intestine than in other parts. Some are composed of phosphates — called phosphatic calculi; these are hard, smooth and polished, having a nucleus, generally o piece of iron or stone, others are composed of beards of grain, hair or other indigestible matter, often mixed with phosphatic salts.

Symptoms.—No reliable diagnostic symptoms are present. Their presence can be suspected only by repeated attacks of colic without any appreciable cause. As a calculus is usually moveable it is probable that it gets into a position that obstructs the passage, hence causes colicky pains. The violent actions of the patient., doubtless, in many cases change the position of the obstruction, open the passage and relieve the symptoms. At last a time comes when, by reason of inflammatory action and swelling, the concretion retains its position and causes death, preceded by symptoms resembling those of the conditions just discussed. In some cases the calculus is situated in the rectum and can be reached by the hand and removed. This teaches the advisability of exploring the rectum in all such cases of a doubtful nature.

Treatment.—The treatment indicated is that for colic, viz., the administration of anodynes, as 1 to 2 ozs. chloral hydrate, or 1 to 2 drs. of the solid extract of belladonna or 1 to 2 ozs. each od laudanum, tincture of belladonna, and sweet spirits of nitre, in a pint of cold water as a drench. This dose may be repeated every two or three hours as indicated, but when more than one dose is required it is wise to omit the laudanum, as it tends to constipote. If a calculus be present treatment will be of no avail, but as we cannot be certain of its presence we are justified in treating for colic. Horses that are subject to repeated attacks of this nature, whether the cause be calculi or a weakness of the digestive organs, are very undesirable. When the cause is purely digestive weakness the attacks can often be prevented by regularly giving the animal a good stomachic, as a dessert spoonful of ginger and a teaspoonful of gentiaan in an evening feed of damp grain. This usually tones the digestive glands, thereby aiding digestion and preventing the attacks.—J. Hugo Reed, V. S.

ENTERITIS

Enteritis, or inflammation of the bowels, is one of the most rapidly fatal niflammatory diseases to which the horse is liable, often causing death in a few hours. Many of the diseases of the digestive organs, some of which have already beene discussed, result in enteritis, but we will now discuss it as a primary affection. Any portion of either the large or small intestine is liable to be the seat of the trouble, and in some cases the greater part of each is involved. The inner or mucous coat is usually first attacked, but the inflammation extends and involves the middle or muscular coat, and also the outer coat, an dthere is often an extravasation of blood into the canal due to rupture of the small blood vessels.

Causes.—The principal causes are fatigue, exposure to cold, standing in a cold draft, or drinking large quantities of cold water when overheated, but, like othe rintestinal diseases, it frequently occurs without well-marked cause.

Symptoms.—The first well-marked symptoms are usually those of abdominal pain, evidenced by uneasiness, stamping of the feet, whisking of the tail, looking around toward the flank, a desire to lie down, etc. These symptoms are, however, usually preceded by some degree of constitutional disturbance (which may pass unnoticed) as shivering, acceleration of the pulse and respirations, repeated evacuation of small quantities of semi-liquid fæces, and general depression. The mucous membranes soon become deeply congested, the mouth dry and hot, the tongue contracted, and sometimes of a brownish color; the appetite is, of course, lost; the pulse is hard, strong, wiry, and frequent; the abdomen is tender upon pressure; the abdominal muscles are more or less contracted. In some cases slight bloating is noticed. In a variable time the symptoms of dulness and depression give way to those of pain and excitement; the horse stamps with his feet, strikes at his abdomen, lies down—but usually does so very carefully, often making several attempts or feints, and then goes down with great care, and will probably endeavor to lie on his back—looks towards his flank, pants, blows, and perspires freely. There are no sharp paroxysms of pain with period of ease as in many cases of colic. The pain is constant, distressing and agonizing in intensity, but to some extent varies in intensity. The body is usually covered with perspiration. In some cases he will stand for hours with his head in a corner and paw persistently with one or both feet. In other cases he will walk around in the stall or paddock in a circle, apparently almost blind, knocking his head against the wall or fence. The pulse is at first hard, full and frequent, varying from 80 to 120 per minute, but generally decreases in strength and fulness and becomes thready and almost or quite imperceptible at the jaw. He sighs or groans from pain, and perspiration drops from the body. The skin is seldom dry, at one time hot and another cold; the countenance becomes haggard, the eyes expressive of delirium with the pupils dilated. He may throw himself about in a dangerous manner, but usually stands or moves aimlessly about, then stands and balances himself as long as possible, when he will fall and expire with a few convulsive struggles.

In other cases the symptoms of pain subside and he will stand quietly, even drink a little water or endeavor to eat, and his breathing becomes more or less tranquil. This often leads the owner to think that recovery is taking place, but the symptoms indicate that mortification is commencing; the haggard expression remains, the pulse continues imperceptible at the jaw, cold sweat bedews the body, the abdomen usually becomes bloated, he trembles, ears and legs become cold, mouth and breath cold and often foul smelling; the lips drop pendulous, the eyes become glassy, and in a variable period he drops and dies. The bowels usually remain inactive to the last. If, however, in thre or four hours from th ecommencement of the attack there is some abatement of the symptoms; if the surface of the body becomes dry, if there be passage of fæces or gas, the pulse becoming softer and less frequent, and the characteristic anxiety of expression disappears, a favorable termination may be looked for.

Treatment.—As the mucous tract of the bowels is the primary seat of truoble, treatment must be directed with a view to checking the action of the bowels until inflammatory action has ceased, and although there is usually an inactive condition of the bowels purgative or laxatives must, on no account be given. Treatment must tend to relieve pain and check the movement of the intestines. For these purposes opium must be administered in large doses. In the early stages, when the pulse is full and strong, if depressions be not well marked it is good practice to give 12 to 15 drops of Fleminy's tincture of aconite in a little cold water, or extract 3 to 4 quarts of blood from the jugular vein. From 2 to 3 drs. of powdered opium should be given in a pint of cold water as a drench, and rather small doses every tw ohours until the symptoms are relieved. Cloths wrung out of hot water should be applied to the abdomen continuously for a few hours, and care be taken to clothe the patient well afterwards to prevent too great reaction. If, after abatement of the symptoms, the bowels remain torpid (as they generally do) the removal of this torpidity must not be attempted by the administration of drastic purgatives. Very small doses of raw linseed oil, say 4 to 6 ozs. with 2 drs. nux vomica, may be given about every eight hours, and the contents of the rectum removed by injections of warm soapy water occasionally. When the appetinte returns the most easily digested foods, as bran and boiled linseed, should be given, and the eating of dry food prevented until the bowels commence to act; and then solid foods should be given in only very small quantities for a few days. —J. Hugo Reed, V. S.

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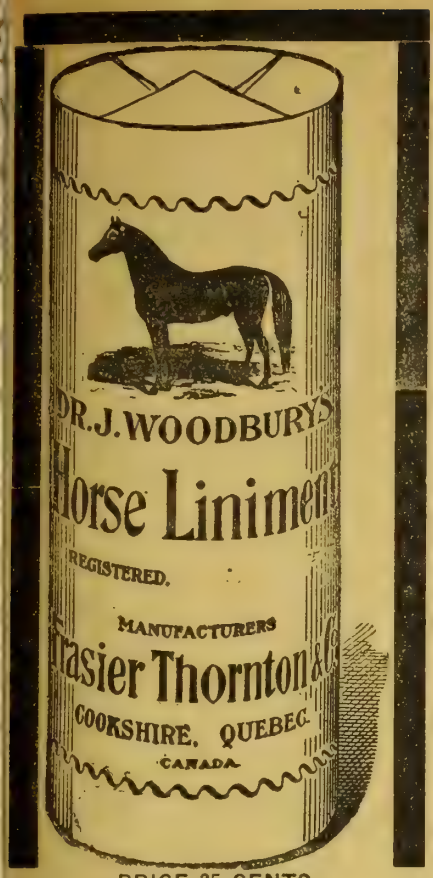

PRICE 35 CENTS

DIARRHOEA

Diarrhoea is the term applied to all cases of simple purging if the fæces are loose, liquid or semi-liquid, and frequently voided, without co-existing inflammation. Diarrhoea is sometimes a spontaneous effort to discharge from the intestines something which is irritant or obnoxious to them or to the system generally. It is also induced by a variety of causes, such as indigestible food, food imperfectly masticated, sudden changes in diet, particularly from a dry to a moist one, medicinal agents, parasites in stomach or intestines, derangement of the liver, drinking large quantities of water when overheated, etc. Probably the most freuqent cause is the conshmption of stagnant or impure water.

Some horses are particularly predisposed to attacks of diarrhoea from trivial causes. Short-ribbed, flat-sided, narrow-loined horses, and those of very nervous temperament are apt to purge without apparent cause. They are commonly called "washy" horses. They will start upon a journey in apparently the best of health, but after being driven a variable distance will commence to purge more or less freely, passing liquid or semi-liquid fæces (often acocmpanied by flatus) in small quantities and frequently. In some cases feeding exclusively on dry food will prevent the trouble, but in others it will not. Such horses are hard to keep in condition, require the best of food and very careful feeding, and are unpleasant to drive. If used for slow work they usually give fair satisfaction. Some horses become "washy" as the result of swallowing imperfectly masticated feed, due to faulty teeth. Such can be successfully treated by having their teeth attended to. Others may be "washy" only when fed some particular food or watered under certain conditions, and of course these after the cause has been ascertained, can be successfully treated by removing or avoiding the cause.

Acute Diarrhoea is that condition in which an animal not "washy" from predisposition or acquired conditions, purges freely without suffering acute pain. The fæces are voided freeely in liquid or semi-liquid form, often a dirty brown color, and usually without offensive odor. In other cases the excretions are foul smelling and often a dirty clay color. In some cases a spontaneous cure results in a few hours, indicating that the trouble was caused by some irritant in the intestine, which was expelled with the excreta, and a rapid recovery took place. In other cases the trouble continues, the animal loses appetite, but thirst is usually excessive, he drinks large quantities of water, regardless of its quality, he fails rapidly in strength, and, if the trouble be not checked he will become unable to stand, and death will soon take place.

Treatment.—If possible, ascertain and remove the cause. If this can be done in the early stages it is often all that is required. If it be suspected that the disease is due to some irritant in the intestines, and the patient is not showing weakness and loss of appetite, a laxative of 1 to 1½ pts. of raw linseed oil should be given. This, of course, temporarily increases purgation, and is given with the hope that this increase will cause the removal from the intestine of the irritant that is responsible for teh trouble. In fact it is a good practice in all cases of acute diarrhoea in which the patient still retains a reasonable appetite and reasonable strength to give a laxative.

After giving the laxative nothing should be given to check the diarrhoea for at least twenty-four hours, as it requires that length of time for the laxative to establish and complete its action. If astringents be given earlier they will counteract the laxation, and there will be practically a negative result from each, hence no good will result. If after this length of time the diarrhoea still continues, means should be taken to check it. Also, if the patient has lost appetite and is becoming dull and weak, even in the early stages, he is not in condition to withstand the still further weakening effects of a laxative, and prompt means of checking the diarrhoea should be taken, even though we suspect the presence of some movable irritant in the intestines.

While, upon general pricniples, we say that "diarrhoea should not be too quickly checked," experience teaches us that in case of acute diarrhoea, presenting the symptoms noted, prompt meaure are necesary to check it. For a horse of ordinary size we once, but the patient's thirst should be satisfied by allowing small quantities—say a gallon at a time, and given every half hour or even oftener if necessary. To the water add one-quarter of its bulk of lime-water, that is, four parts water and one part lime water. This, in most cases, gives good results.

We are often impressed with the idea that the lime-water gives more marked results than the drugs. Lime-water is made by slacking a lump of lime, then adding considerable water, stirring well, then allowing to settle. The undissolved lime prepcipitates and the clear liquid on the top is lime-water. It cannot be made too strong, as the water will dissolve and hold in solution only a certain quantity of lime and the remained precipitates. In other words lime-water is a saturated solution of lime in water, that is, the water contains all the lime that it will hold in solution.—J. Hugo Reed.

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POULTRY.

FEEDING POULTRY FOR EGGS—WHEN GIVEN PROPER RATIONS WILL DOUBLE PRODUCTION

It is possible to double the egg yield of a flock of hens and actually save feeed at the same time if the hens are properly cared for and fed the same ordinary grains used now but furnished in correct proportions, amounts and proper methods. In the following article Mr. T. E. Quisenberry, president of a large school of Poultry Husbandry tells how to increase egg production through more practical methods of feeding. Read what he has to say:

Hens that are not properly housed and handled, and which are not comfortable and happy, cannot be expected to produce their maximum number of eggs. Breeding, however, determines the posibilities of any hen. What causes five White Plymouth Rocks from one breeder, kept in one house, to lay 500 eggs in one year, when another pen of five White Plymouth Rocks from another breeder kept and fed and caerd for in the same house to produce 1,000 eggs in twelve months? It is not the feed, the house, the water, the climate, or any other one thing which can be thought of, except the breeding, the blood lines and the power or ability of one to produce more than the other. For generations one may have been bred for eggs and the other evidently had not been so carefully selected and mated.

When placed under the microscope, it will be seen that every hen has from 2,000 to 6,000 ovules or small yolks in her body. This is more than any hen was ever known to produce in a life time. The number of possible yolks and the number of eggs produced seems to bear no relation to each other. The problem seems to be to select and breed your birds that they have the ability to develop these tiny yolks. You may give a hen all the feed she can eat, if she is lacking in this ability, she will become overly fat or break down, but will not lay eggs. Breeding makes it possible for a hen, when rightly fed and rightly cared for, to produce a profitable number of eggs.

Right feeding alone is not the key to increased egg production. More depends on careful selection of the hens. Too many farm flocks are nonproducers and drones. Perhaps this is true of the entire flock or maybe only a part, but the drones are always responsible for the limited profits.

By selection, I do not mean that the farmer should buy prize chickens at exorbitant prices, though I do believe in good blood. But selection is just as necessary in a flock of poultry as in a dairy herd.

Now ,when you ask if the farmer can afford to keep chickens while the war is going on and grain is so high, if you refer to the usual flock of culls, I wi'l say, "No." Grain is too valuable to be thrown promiscuously to nonproducing hens.

It may be that you wil think when I mention selection that refer to a lot of scientific and complicated experiments. I simply mean that you should go into your flock, pick out the culls and get rid of them. A hen of low vitality is a menace to the flock because she is susceptible to disease. She is an expense to her owner because she is a consumer and not a producer. It is a funny thing, but many farmers who would be quick to get rid of a poor cow will keep two or three dozen hens that never have made a cent for him or never will, no matter how he cares for them.

How to Make Selection

The rules that govern selection are as simple as A, B, C to any observing person. For instance, a hen that is slow to feather is lacking in vitality. Anyone ought to know that. You can't stuff her and make her lay eggs. She is by nature a weakling. Hens do not lay eggs because they want to; they lay eggs because they are strong and vigorous and egg laying is a natural result which they cannot avoid. That tendency must be bred in them.

Why, if the average farmer would give half the attention to his poultry that he does to his live stock he'd find the poultry the best investment in many cases. Success comes from being willing to discard. When you have culled out the poor hens and get them clear off the farm, then it is time to begin thinking about feeding for egg production and also, let me emphasize, watering for egg production, for water is as esesntial as feed.

At this time one of the greatest problems facing poultry men is the ratio of profit between the cost of feed and selling price of poultry and eggs. ..o poultryman can object to the high price of feed if the selling price of poultry and eggs is proportionately high. Thousands of the more or less inexperienced poultry men, who were loaded with poor stock, drones and slackers, or who, because of inexperience, haphazard methods, or poor management, have been forced out of business. Many others in the same class are certain to go, but the future promises much for the man who has the goods and who knows how.

Get Rid of the Drones

Before carrying your birds through another season, take one more look at them, and keep the following rules in mind when making your selection:

1. Market those which have been slow to feather or seem to lack vitality.
2. Keep the pullets which mature quickly and start laying first. Those which start laying when less than 200 days old will be the best layers if they have the right care.
3. Keep the late moulters.
4. Keep the birds with rather large plump combs and wattles.
5. Hens with pale vents, pale beaks and pale legs have been good layers.
6. The skin of the best layers should be rather loose and flabby on the abdomen between the vent and the breast bone.
7. The pelvic bone smust be thin, straight, flexible and wide apart.
8. Market the hens which are baggy behind and which have a heavy, fat, thick abdomen which hangs down below the point of the breast bone.
9. Keep the hustlers and heavy eaters that go to bed late and with full crops.
10. Birds that have long toe nails that show no signs of being workers are usually unprofitable.
11. If a bird meets the above requirements, it should have a broad back, long body, be stoutly built and in good flesh.
12. If a bird is not moulting and still has a small, dried-up comb covered with a sort of whitish substance, or if a bird has thick or crooked pelvic bones, which will be found on each side of the vent and above the point of the breast bone, these are always money lasers.

The best known methods of selecting the laying hen without the use of the trap nest is contained in lessons Nos. 10 and 11. It tells plainy how to weed out the sackers and how to breed to increase egg production. No man or woman can afford to feed a flock of drones at the present prices of feed, but the good layers will make more profit than in any previous year.

Environment and Feed Important

When a poultryman has made a careful selection as above, he then has a foundation on which to build. The next important thing is the question of feeding.

In speaking of wheat, we refer to shrunken wheat or wheat which is not suitable for milling. The Government will not permit the use of wheat for poultry feed and it is our duty to aid the Government in the enforcement of this law.

There is no questions but what corn wil lbe cheaper. When corn sells for less than wheat it can be used for at least two-thirds of the grain ration. I nthat case, as a scratch grain I would recommend two-thirds corn and one-third wheat. If barley is cheaper then use one-third barley. But use barley substitute for your corn rather than the wheat. If oats can be bought for less per pound than corn or wheat you can use one-third oats, providing they are heavy and are not composed mostly of hulls. If you expect to feed oat grain, it is best to soak your oats for 24 hours before feeding. At present prices or at what they are certain to be soon, use at least one-third cracked corn, and one-third wheat and you may make the other third of barley, or oats, if they are cheaper than wheat or corn. If not, then use two parts corn or two parts wheat

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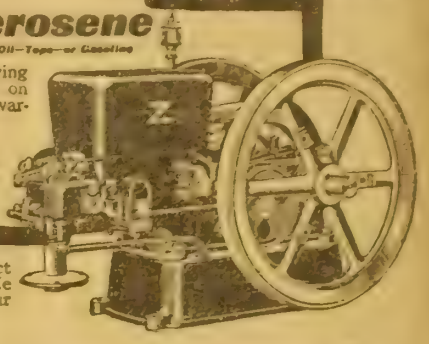

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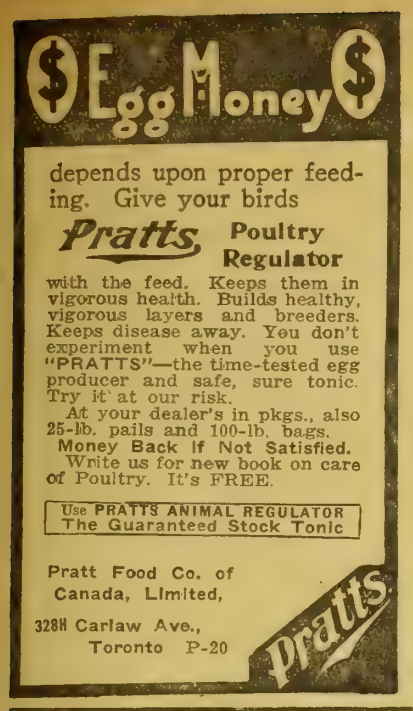
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letting whichever grain is cheaper constitute the greater portion of your scratch feed. If you can secure, at a reduced price, wheat screenings, wheat which is shrunken, or which has been slightly damaged, but which is free from must or mould, it is often advisable to do this and mix it with your scratch feed. You can use all cracked corn for your scratch grain and wheat by-product for your mash.

Water As Important As Feed

One of the most esesntial things and one which is often neglected is to supply the flock with water. If the drinking pan is dry or frozen up, your egg yield is certain to drop. The egg is composed largely of water, so is the hen's body, and while water is one of the cheapest things yet it is one of the most essential things. By cutting down the water supply you can decrease your egg yield 50 per cent. in two days' time. Look well to this and try to make some arrangements whereby your water fountain can be kept from freezing this winter.

THE CO-OPERATIVE MARKETING OF EGGS IN NOVA SCOTIA

During the past five years the co-operative handling of eggs has received considerable attention in this province. We established, under the direction of Mr. Benson several co-operative egg circles in different parts of the province. Our conditions were not similar to Prince Edward Island conditions, and on that account the collection of eggs on any particular route was more expensive than in the Island. On this account, and owing to the local peddlers collecting a large portion in each district we decided to discontinue the egg circle as carried on there.

The Plan Adopted

Recognizing the fact that a large production of eggs was placed on the market during April, May and June, and also that a great number of these eggs were lost, we decided to adopt the plan of conserving the eggs by building cement tanks in different sections of the province as an experiment and collecting the eggs in the low price season and storing them in tanks with a preservative (sodium silicate), and during the winter season placing them on the market to help relieve the scarcity which exists during that period of the year. This was an advantage to the consumer and incidentally resulted in an average increase of prices for eggs produced in the spring to farmers. The system worked satisfactorily, and gave good results. During last year at three different points in this province we handled 16,000 dozen of eggs in this way. The circle selected their own collector and manager, and charged 4c. per dozen for handling and marketing the eggs so collected by the manager off the proceeds of the sale of the eggs. The balance was paid to the farmers after the eggs were sold. This method increased the spring prices to from 5 to 11c. per dozen. The eggs were candled into the tank, and also candled out of the tank into the cases for shipment, which enabled the circle to guarantee the quality of the eggs. We found some little difficulty in inducing the storekeepers to handle preserved eggs, but, after the customer had a shipment of these eggs, we were unable to supply all they required.

Attitude of the Department

Our Department assumes no financial responsibility in this matter. We agree to furnish the market and to assist in organizing the circle; all other work devolves upon the respective managers of the different egg circles. During the past season the prices during April, May and June were considerably higher than in other years, and on that account the circle managers decided of their own initiative that it would be advisable to preserve the bulk of the crop of the past spring. We will not, however, have at these circles as large a number to dispose of this fall. At two of the circles we have about 5,000 dozen eggs in the tanks.

The higher price of feed, and the difficulty of obtaining suitable foods for poultry, has caused a great many breeders and persons in town lots having small flocks to dispose of their flocks, and the production of eggs and poultry, as well as I can learn from reliable sources, will not be as large as last year by about 25%.—By J. P. Landry, Manager and Lecturer, Agricultural College.

EARLY PULLETS FOR WINTER

When we take into consideration that the average egg production on the Canadian farm is 75 or 80 eggs per hen and when well managed flocks average 120 to 180 eggs and individual hens even go higher than 300 eggs in the 12 months, it looks as though improvement might be made in the class of stock many keep. In the first place, purebred stock is best. They should be from a good laying strain. They should be from good healthy parentage and for winter egg production, pullets only and early pullets should be kept. In an experiment conducted at one of the Branch Experimental Farms where four different ages of birds were in competition for winter egg production, it was found that early pullets produced eggs at an average cost of 16.7 cents, late pullets at 28.2 cents; two-year-old hens 95.1 cents; three-year-old hens $.76 per dozen. iFgures somewhat similar to these could be procured in larger quantities. The early pullet is the only bird that shiuld be kept for winter egg production and it is the winter eggs that pay. Adozen of eggs at Christmas is worth two or three dozen in May or June. Early pullets mean early eggs and early chicks in the spring mean early pullets in the fall. As a rule, the pullets that lay earliest are the best layers so that every pullet that lays before Christmas should be marked. They are the best layers. If you are killing off your old hens, do not kill hens that moult late in the fall. They are your best layers and with your best layers should always be mated male birds from good layers. The male is more than half the flock. A male from a good laying strain and especially from a laying mother will do more good to build up the laying quality of the flock than any other one thing. Don't use them for breeding purposes, cockerels whose pedigree you know nothing about. Better pay a good price and get a good bird.

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HOW TO HANDLE NEW CONCRETE

All newly placed concrete work must be protected against the elements and against injury from other outside causes until the concrete has thoroughly hardened. In most cases thi sprotection need be no other than a covering of some sort which will prevent rain from falling directly on the exposed concrete surface.

Especial precautions must be taken to protect the concrete against freezing temperatures. There are various ways of doing this. The most effective and also the most usual and easily accomplished is to build a sort of covering over the concrete either of boards or canvas and place under this covering small stoves or heaters which are kept burning continuously until the concrete has hardened. The heat given off by these stoves will be sufficient to prevent the concrete from freezing, even though the canvas or board covering should not be entirely air-tight.

In seasons of extreme heat it is also necessary to protect the concrete against direct rays of the sun and direct exposure to the heat. Such exposure will cause the water in the concrete mixture to evaporate or dry out before the concrete has had an opportunity to harden, and thus an inferior concrete will be produced, particularly at the surface. The best way to protect the concrete against such injury is to keep it covered with water until it has hardened. In the case of pavements or floors, this is easily accomplished by building little dams of clay or other suitable material across the surface of the concrete and keeping the enclosed spaces filled with water for several days, or until complete hardening has been accomplished. In other cases where this method is not practicable the concrete may be protected by keeping the air in the room in which the concrete is located saturated with moisture either by means of escaping steam or fine spray of water.

The presence of water or moisture in the atmosphere will not in any way injure the concrete either before it has hardened or after. Before hardening has set in the presence of moisture in the air is exceedingly beneficial to the complete and thorough hardening of the concrete. After the hardening has been accomplished the presence of moisture in the air will not affect it.

The application of paint or other protective coatings to concrete work before it has hardened will cause it serious injury. This injury arises from the fact that the hardening process will be materially retarded by the admixture of any substance not properly a part of the concrete mixture. The concrete at the surface will also be materially weakened by this application and in all probability will peel off after the concrete below the surface has hardened. After the hardening process has been completed no protective coatings of paint or other material are necessary.

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WOMEN'S INSTITUTE SECTION

This section of the Maritime Farmer will be devoted to the interests of the Women's Institutes of New Brunswick. We respectfully solicit contributions from all branches, touching upon matters of general interest. We wish the members of all branches of the Women's Institute to feel that the Maritime Farmer wishes to fully assist them. The Maritime Farmer is the official organ of the Women's Institute of New Brunswick. We would suggest that YOUR BRANCH name a press committee, so that news from YOUR BRANCH may reach other branches.

Shout now! the months with loud acclaim.
Take up the cry, and send it forth;
May breathing sweet her spring perfumes.
November thundering from the north;
With hands upraised, as with one voice
They join their notes in grand accord;
Hail to December! say they all.
It gave to earth our Christ the Lord.

ABOARD THE "GRAY FLYER"

(By Lillian Ducey,

It began aboard the "Gray Flyer," en route for New York. The passengers in the Pullman Aida saw the beginning of it, while they were athrill with the Christmas spirit. Expectancy was in the air and fulfillment bulged from bundles heaped everywhere.

You know that feeling of anticipation. Everyone does. It belongs to Christmas and the days antedating it. For in that gift-giving, joy-seeking, joy-diffusing time anything can happen. You don't know what it is. You don't know what you'd like it to be. But just beyond, as it were, it's going to surprise you.

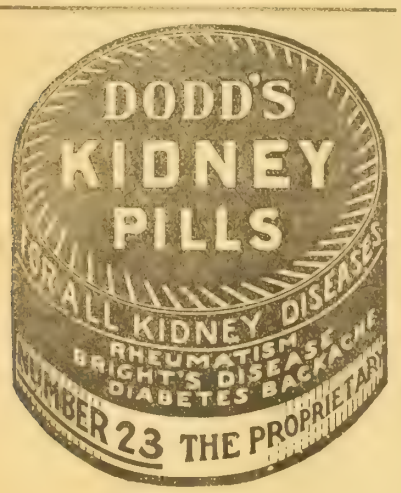
Even Brown felt that way—although he had no one in the whole wide world that he could call his own. And no one was more susceptible to that inspired sentiment that sweeps the land at this home-hallowed time. For Christmas, he would have told you, is a time when any one is privileged to rub elbows in the spirit with the gladness that is in any one's soul. So he sat in his chair in the Aida and he rejoiced in the holiday enthusiasm that bubbled forth when he saw the new passenger the conductor personally ushered into their midst.

Brown looked up, as did the rest in the car, attracted by that piping baby voice. The new passenger was a happy little maid of about four, and she hugged a battered doll to her breast like the veriest mother while she took them all into her confidence.

"I'm Felicia. —m-m!—yes, I am, I'm going on five. And this is Annabel Anastasia, 'most one year old. Christmas day is her birfday. See her! See her!"

The little voice was like a morning song. The face was a beaming smile. It contrasted oddly with the disfigured doll. And as the conductor put her into a seat she stood up on it and continued:

"I'm pretending I'm grown up. I'm great big. I'm taking Annabel Anastasia 'way, 'way by, far gone. Annabel Anastasia's got lots of other names too. Hasn't you—Oh-so-sweet? Hasn't you, Pretty-eyes?"



At that a glance of pure amusement went round. Annabel Anastasia's eyeless sockets were the reason.

Just here she caught sight of Brown across the aisle, and head tilted birdwise, she smiled into his eyes.

"Having a nice ride?"

Brown nodded and smiled back.

"You going a norphan asylum too—where there's lots and lots of little girls to play wif?" Like a tune that ran came the questioning voice.

Brown started. So, for that matter, did the rest who heard her. That little captivating beauty going to an orphan asylum. Through the joy of the Chirstmas mood shot a pang that pained.

"Won't it be nice to have lots of little girls to play wif?" the enchanted voice went on. 'And I'm going to one where Sister Anastasia lives. She knows us, I guess. She knowed my mother, too.' My mother's in heaven. And she took the eenty weenty wif her. Daddy wanted her, I guess. Now they're all in heaven 'cept me. When everybody you've got is in heaven you go to a norphum asylum and stay—and stay—and stay until——"

Suddenly there came a quiver to the baby lips. A mist gathered in the baby eyes. From over the back of the seat she looked down at a little boy who was about her own age.

"Has you got a mother—and is your mother in heaven?"

The question, unanswered, was left floating in the air. But the boy snuggled up to his mother; the mother held her boy jealously close. And in that moment Brown jumped to his feet as if something dynamic har started to life within him. Gruff with emotion, he held out his arms.

"Come here to me, Felicia, anad tell me all about it."

That was all he said, but more than one in the Aida marvelled at his tone. And more than one as the hours went by wondered what those two could find to talk about—the grave-faced man and the chattering little magpie on his knee. They saw her, when sleep crept drowsily over her, tuck her little face beneath his chin and smile herself off into dreamland. And every one's eyes seemed to grow thoughtful. Every one's expression held a hint of wistfulness. Every one's heart beat out a wordless prayer of thanksgiving.

The mother of the little boy realized how much she had to be thankful for. And behind her sat a little old lady—a tired little old lady dressed in black. She was a grandmother; she had raised a big family of her own, and now she was mothering her son's motherless half-grown girls. She prayed for wisdom to guide them aright.

On the other side, a fat, florid man, unmistakably a drinking man thanked the quite irreligiously that he'd had sense enough a couple of years ago to invest in an annuity for his wife and kids, even though his wife had left him on account of his habits.

While the prayer of another man was that the Lord would look after him until he could take out a good-sized life insurance, so the mite that had come to his house a week ago would never find himself traveling toward an orphan asylum.

Once the conductor came through and stopped to talk to Brown. "Can you beat it?" was the emphatic way he summed up the situation—the baby asleep, the man cradling her so willingly. And to cover the emotion that bothered his throat he said offhand:

'Parents both dead. I'm to deliver her to a sister from some charitable institution, who will meet her in New York. Hard lines. Mighty pretty little thing. Let me take her where the porter can watch her. She can finish up her nap over there, stretched out on that seat."

Brown then looked down at his little burden. The lips were still curved to a smile. Elfin breaths were being wafted his way. And with a puzzled look in his eyes he laughed up at the other.

"She's comfortable; I'm comfartable. Let her stay."

And when she woke she continued to stay with Brown. She could not be coaxed from him.

"I love you.", the rest would hear her say. "And Annabel Anastasia loves you. Would you like to kiss Annabel Anastasia?"

And quite seriously Brown would kiss the eyeless doll.

They had other poignantly interesting and familiar little talks as the train sped on.

"Have you a little girl like me?" Felicia asked once.

Brown shook his head.

"A little boy?"

"Nobody."

"No-body?" her little voice was soft with sympathy at the bond between them.

'Nobody." Brown repeated promptly. But even as he spoke, his heart dropped a beat.

For, you see, he did have some one. Right in that city to which he was traveling there was some one. Some one who— Well, briefly, he and that some one had fought their way through three years of life together. Fought, it, not with flatirons or pots or bootjacks, by the ancient method which bruised only the flesh, but with stnging words that started pounding pulses in the brain, and that rankled in the heart everlastingly.

They havn't been living together now for more than a year. Just before Christmas a year ago, they had their decisive battle and each had retired from the field—defeated.

He was graver than before when Felicia finally arrested his attention again. But she talked and talked. She claimed him. And when they finally reached New York and the conductor came to take her, she put her arms about Brown's neck and clung and clung and clung to him.

An illogical quickening of the heart of Brown was the result. For he actually felt as if a piece of that heart was to be taken away. Ah, if only he and Constnace had had a child. Perhaps then——

But he crowded back such memories and he said to the conductor:

"I'll carry her for you."

He tried to tell himself that after all it was part of the humane ordering of life that orphan asylums should exist.

He was now facing two black-robed sisters. He was talking to them. Felicia's arms were still glued about his neck.

It was if here in a world of strangers he was hers. And she wept her pitiful need of him. She told him Annabel loved him, but refused to

look at the namesake of Annabel Anastasia.

The sisters turned to Brown.

"Perhaps if you will come with me, Perhaps if we all went together—We'll take a taxi and——"

But it wasn't before the convent that the taxi drew up.

Before the sisters had time to protest they were entering the house. The door had been thrown open by some one who had seen them from the window. And that some one, with hand on her heart, had whispered softly, "Oh, Jim, Jim." in the voice of one who takes all her pride into one extravagant handful and tosses it away.

She ushered them into a lovely room. And Felicia, with the clairvoyance of childhood, held out her arms to her. And out of that silence Brown spoke.

"Constance, I've come to ask a great favor of you. In other words, I've brought you this little lady and I want to ask you if you would not like to have her spend Christmas with you. I met her on the train. She was bound to an orphan asylum—and you know how my heart aches for such homeless ones.

"I barely remember my mother—except the ache caused by her death. I, too, went to an orphan asylum. Until I was twelve years old I stayed there. One day when out walking we were scattered by what was presumably a mad dog that ran into our midst. That was my chance. I ran off. They never found me. And though at first I had to scrape for a living like some animal, afterward—Well, here I am. Just plain Jim Brown—but once this lady loved me enough to marry me. Think of it! I who have slept on benches in a park or in a doorway, wondering even in

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my dreams what it must be like to have a home—wishing I were a man so that I could make one for myself. And then, having accomplishel this glorious thing, sullying it with my unbridled temper. 'Right her before you I want to tell my wife how sorry I am about that.

"Once you've been married you can't get away from it; it's too big a thing. Or if you do, the whole of the world is out of tune. It leaves its mark—living together."

As he finished speaking, a look quivered over the woman's face that hinted of tears.

'Felicia, how would you like to live with me—all the time? Be my little girl?" she whispered to the baby.

"And wif him?" Felicia's was a loyal little heart.

"And with him—yes," the woman affirmed tremulously—"with us."

SHARING SECRETS WITH THE SMALL FRY

Christmas is the children's holiday. If they have a part in the Christmas preparations and giving, they will enjoy it much more than if everything is done for them. It is a mistake not to allow children to help decorate the house and the tree, or to make and plan little gifts for family and friends. Of course one does not want to take away all the element of mystery from the Christmas season; but this can still be obtained in the method of distributing the gifts, and in surprise packages for the children themselves.

The small children can make paper kindergarten chains out of colored paper cut into strips and pasted, one ring within another. The strips should be cut about one half an inch wide and four inches long when making chains for decorating the rooms, and about one-fourth of an inch wide and two inches long for decorating the tree. These chains may be made of red-and-green, red-and-white, or green-and-gold paper. Chains made of silver or gilt paper are especially nice with which to trim the tree.

The small children can also string popcorn, unroasted peanuts, and cranberries on stout thread for tree trimmings. Pop-corn and cranberries strung about the room make nice decorations. If liked, the pop-corn and peanut strings may be touched up with a little gilt by some of the older children.

Save up all the scraps of gold and silver paper and tinsel. Bethlehem stars and crescents moons cut from these make pretty decorations for the tree, and may be made easily by the children. A pattern for the child to go by may be cut of pasteboard. These stars and moons are suspended from the tree by means of the tinsel, or gilt, or silver cord.

Give the small children colored Christmas and New Year post cards decorated with silver and gold bells, and figures of Santa Claus, and let them cut these out. They will enjoy this work very much. The cut-out bells are suspended from the tree. The Santa Claus figures, if preferred, may be pasted in the center of red or white pasteboard stars, hung on the branches.

The boys wil lenjoy frosting the tree, also the sprays of foilage to be used in decoration. Alum should be dissolved in a pail of water, using as much alum as the water will take up nicely. Then it may be put on the tree by means of a whisk-broom. The sprays may be dipped directly into the pail of alum water.

Girls will enjoy making stockings of tarlatan, and overcasting them with bright wool-worsted. These are filled with candy and nuts. Cornucopias may be made for the same purpose, also pretty boxes to hold home-made candies. With plain boxes, mucilage, wall paper, or other fancy papers they will evolve boxes that would do credit to an older person.

Children will enjoy cracking nuts and picking out the meats for the Christmas goodies, or gilding them for the Christmas tree. Acorns make ideal tree decorations.

There are many simple little gifts that the children can make with their own fingers, and every mother should encourage them to hava e part in the Christmas giving as well as the receiving.

Then there are many simple home-made sweets that the children can make. We know of homes where all the Christmas candies are made in the home by the youngsters, with the oversight of the mother or an older sister, and they enjoy these home-made goodies much more than bought candies.

They will enjoy dressing dolls, or making scrap-books for hospital children. To make some one happy is the Christmas spirit to instil into our boys and girls, and we can not begin too soon.

TABLE MANNERS

Table manners. like most of the conventions, are not arbitrary rules; they are based upon common sense. Back of every breach of table etiquette lies either a practical or an esthetic objection. A cup with a spoon left in it is in danger of tipping over. Biting one's bread, instead of breaking it, is suggestive of animals and therefore not pleasant to see.

Many parents teach their children not to smack their lips, not to lean their elbows on the table, not to be noisy at meals, and let the table-manners go at that. And when those children grow up, they learn the conventions at the cost of painful embarrasment and agonized self-consciousness.

A child of two is not too young to acquire the first principles of table etiquette. Explain to him the common sense of everything he must and must not do and if, for one reason or another, you allow him to break the rule, be sure that he understands what the proper thing really is.

All our teaching will be of no avail if we do not set him a good example. Grown-ups fall too easily into careless ways, secure in their knowledge of how to eat when they "go out." But a careless youngster carries his bad home manners with him.

There are children who seem absolutely incapable of keeping their "fronts" clean, without aid of a napkin tucked in the collar or tied around the neck. If such be the case, a mother is only courting trouble if she insists that he spread the napkin in his lap. Tell him that he must wear it "baby fashion" unti lhe has learned not to spill his food; as soon as he can aeat nicely, he may spread the napkin, folded once, on his lap, in the proper grown up way. This furnishes him an incentive for good manners.

Children falling into the habit of cutting up their meat into small pieces before beginning to eat, because, when they are very small, this is done for them by their parents. But as soon as a child can manage his knife, let him learn to cut off only one piece at a time "as mother and father do." It will save him embarrassment in later years.

In the same way, a child learns to butter a whole slice of bread, and bite into it. When mother stops buttering it for him, he imitates her method. Bread should be broken, not bitten off, into mouthfuls, each morsel buttered separately. This is not difficult for children to learn. It is based on good sense—for a bite into a buttered slice is likely to leave greasy traces around the mouth.

In a large family of children, where there is much passing of plates for a "second help" from one to another, it i soften the better part of valor to allow the owner of the plate to hold his knife and fork in his hand. A wise mother, however, will begin early to teach youngsters that the proper way is to leave the knife and fork resting on the plate, for well-mannered people can supposedly pass the plate without accident. Let the kiddies look upon this, and other points, as a grown-up privilege to which they may aspire, and they will need little urging to do their best.

When a knife or fork is not in use, it should rest wholly on the plate. At the end of the meal, the knife and fork should be placed together, the ends touching on the plate, but not crossed.

The child should not be allowed to leave the spoon in his cup, for this is a bad habit easy to acquire. Remember that everything that you can drill into him now is to save him future embarrassment. If, for lack of patience, you have failed to teach him good manners, be sure that he will blame you at some later date.

Eating soup noiselessly is easier when the liquid is taken from the side of the spoon than when sipped from the end. Also, it is not good manners to place the whole spoon in the mouth which a child is likely to do when eating from the tip.

At many tables, chicken bones, chops, etc., are taken up in the hands. This is quite permissable at a family meal, but it is well to train the youngsters into asking permission to "take it up in my hands," so that he may regard it as the exception, not the rule.

A child should learn to cut lettuce with his fork, without aid of his knife. He should learn not to scrape the bottom of a cup, not to clash his spoon or fork against a plate in an effort to clean up the last vestige of some favorite dish. If he must use a "pusher" let it be a piece of bread, not his fingers. He should avoid the habit of suspending a forkful or a spoonful of food in mid-air while he talks. When food is taken from the plate it should be carried directly to the mouth. At the close of the meal he should fold his napkin and ask to be excused.

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THE IMPORTANCE OF SOCIAL LIFE IN COUNTRY HOMES

There is a belief abroad that we should try to make our neighbors good. Perhaps we would be nearer the Divine plan if we say we should endeavor to make ourselves good and our neighbors happy if we may, for happiness is the soil in which the gentler virtues take root. Unhappiness caused by another's injustice produces oblique mental vision. Much unkind and unjust criticism has been directed towards the elder brother of the prodigal son because he did not join in the festivities when his brother blew in gaily after a long absence and became the guest of honor at an informal gathering. It was too bad that he did not feel like joining in the party, for parties were not often held at his house. When he got a chance he told his father a few plain truths on the subject of social life in the neighborhood. "Here I am," he said, "a hard working, law abiding, self sacrificing, decent son to you. You never made a spread like this for me." No wonder he though it paid to break the commandments. And therein came the greatest harm to the elder brother. He looked at moral subjects obliquely. That is what the neglect or injustice of parents always brings about. They blur the moral vision of their children. The history of the elder brother has been duplicated many times in effect, if not in incidents. The cry goes up from many a boy and girl. "Long years have I served and still I have never been given a real party, not even a taffy pull, nothing at all to show that my efforts have been appreciated." Perhaps there is not any sadder thing can be said by any man or woman looking back on life than, "I never had a good time at home." Some of the saddest sights in the world are the sour, gloomy, stingy, grumbling, unhappy homes whose fire never brightens with a hospitable glow of "going to have company at our house tonight," and they are not always poor houses either. Some of the most downtrodden, hard worked children I have ever known, who help in the harvest and pick the potatoes and do chores are children of well-to-do parents. Don't ever think for o minute that it is the poor homes that are unhappy homes. You may feel sorry sometimes that you are not able to give to your children some of the good things of life, but there is one thing you can give them if you will—give them a happy childhood. Remember two dollars spent on their happiness now will bring greater results than two thousand when they grow up. Many a man and woman when they have grown up to the age of you and me and are up against the serious things of life have found their hearts made strong for the conflict and found that their hands were strengthened by looking back at the pleasant valley of childhood and in fancy wandering again down its rainbow paths. More children are defeated by what is behind them than by what is ahead of them.

How much more resourceful are the children in the country than the children in the small towns; the country women are more resourceful than women in the towns because they must plan for themselves. There is a great opportunity for doing a great deal for the people. Farming may be interesting or monotonous and dreary, according to the mental ability of those engaged in it. In some neighborhoods I have known, there was always something doing; in others there was always a round of driv elling gossip. There was not so much difference in the people as in the atmosphere in which they lived and their mental attitudes towards moral issue. One family of generous social instincts and strong moral character can raise a whole neighborhood to a higher level provided they get in on the ground floor, but if a neighborhood is established, it is pretty hard to change it. Set the social standards high. Let your social events have an aim and purpose. Don't you know it does not make so much difference how fast you are going as in what direction? It is better to aim high and go slow than to aim low and go fast.

There is a tendency for middle aged women to become discouraged and feel that they are in the way when it comes to social life. We hear so much about young people and young people's movements that the middle aged ones think there is not just the place for them that there is. If mother is not in favor of holding a party or doing something in that line, it cannot go on. In entertaining in her own home a woman finds her place. Mother is then the presiding genius.

There is another great reason for social life. Everybody is lonesome. Prairie lonliness is next to prairie madness. A lonely woman on the prairie needs human companionship—real life companions, something with a "skin face." One of the drawbacks to social life in a country neighborhood is the distinction of class and caste. I have known of people to refuse to associate with their neighbors for no apparent reason. They had an inward satisfied conviction that they were better than the rest of the community. Grandmother had been a "lady" and they could not forge it. Of course, I think it is fine to remember your forefathers with pride, but if this remembrance leads us to be unkind and unnatural, it becomes a bad form of snobbishness. Let no one aim at belonging to the pretty aristocracy with the best part under ground. I like the attitude of the real English, Scotch or Irish lady. How kind and courteous they are to everyone. They are so well assured of their own position that they do not have to think about it. It is those who are not very sure where they stand in society that are always very careful.

There was a delightful freedom and hospitality in the old days when everybody had packing box furniture, tin spoons and salt pork. No, of course, we do not regret the passing of those things, but we do regret the losing of the comradeship and freedom of the early days. In these days of cut glass and hemstitched linen we make our hospitality a fearfully burdensome thing. We are so anxious to have everything done up right. Be glad if you have cut glass, Limoges china, sterling silver and all those nice things, but regard it as something that is going to help us to serve our fellowman, for that is our business here below, to be the cup of strength to some soul in agony, to help some one over a rough place, to make things easier for the people who travel with us. That is an ambition worthy of those who are made in the image of God. Sometimes we say, I like to entertain my own friends, people who are congenial with me. How can we ever be sure that any person is dull. Probably it is our lack of interest. To the truly great heart all people are interesting. There is not a single person from whom you cannot learn something and from whom you cannot get a lesson, who knows something that you do not know. Let us seek out the people whom we in our shortsightedness think uninteresting. The truly great person is the one who will seek out those whom the rest of the world wil lbe inclined to pass by. Did you ever notice the dusty gray pebbles on the shore of a stream? How dull and uninteresting their colors; but when they are covered with the water of the stream what pretty blues and purples come to light. Bathe them in the sweet light of understanding and love and friendly interest and we see their lives shining with the beauty of unselfishenss and sacrifice and worthy endeavor. Let us make it our mission that we try to see every person with eyes of love, see the good things in them and in our own immediate neighborhood, for that is the part that counts. Let us try to seek out those that are dull, and incidentally our lives will be enriched a thousandfold.

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Thus does Mr. Isidore Comeau, well known and highly respected here, express his gratitude to the remedy to which he gives the credit of making him well. And his words are a message of hope to the men and women of Canada who are nearing the allotted span of life.

It is the kidneys that first feel the wear and tear of a long life. Theirs has been the work of keeping the blood free from those impurities that are the seeds of disease.

Nine-tenths of the ills from which the old folks suffer are directly due to weak or diseased kidneys. Ask your neighbors if Dodd's Kidney Pills are not the remedy they have been looking for.

I KNOW A WOMAN'S SUFFERINGS

I am a woman.

What I have suffered is a far better guide than any MAN'S experience gained second-hand.

I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight and dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

Read My FREE Offer:

To Mothers of Daughters. I will explain a simple home treatment which speedily and effectually dispels green-sickness (chlorosis), irregularities, headaches and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten days' trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

MRS. M. SUMMERS, Box 309 Windsor, Ontario

8 Big family game consisting of Checkers, Chess, Dominoes. New game of Autheurs, Fox and Geese, Nine Men Morris, The Spanish Prison and the game of Flirtation, all for 10 cts. Best value. 25 Big Silk remnants for fancy work for 10c. 10c
ALLEN NOUVEAUTIE, St. Zacharie, Que

rope to a chanc of "salt, vinegar, mustard, pepper" (jumping as fast our legs would move at the last word.) We did not know that we were training ourselves for later housewifely skill by thus memorizing a list of the condiments.

Salt is the most necessary of the group, and especially essential to those who eat little or no meat. It is obtained from mines of salt crystals or from sea-water by evaporation. It is agreeable for its own flavor and it brings out other flavors too. A pinch of it improves most things—cocoa, cake, and fruit jellies for instance.

Vinegar is used for its flavor, as in salad dressings and for the preservative qualities, as in pickles. It is not an antiseptic, like some of the spices, but the acid in it prevents decay. Two varieties of vinegar, one made from cider and the other from wine, are in common use in this country. White wine vinegar contains more acid than cider vinegar, and also some of the mineral salts of the grape.

Mustard has been used for centuries in medicine, but its table use datesonly from about 1830. To make it, small seeds of the mustard plant are ground to a fine flour. The most common adulterations of mustard have been the addition of wheat flour to texture and of cayenne pepper to make it "hot."

Pepper is one of the oldest condiments. In the days of Neroit was worth its weight in gold. As late as the Middle Ages it was so precious that mariners went voyaging to find a cheaper route to procure it.

Black pepper is made from the berry of a tropical vine dried before it has ripened and ground. White pepper comes from the same pepper corn fully ripened and with the black outer husk removed before grinding. It has a more delicate flavor than the less expensive black variety.

Red pepper is either the sharp strong cayenne, which should only be used with extreme moderation, or the mild, sweet parika. Parika is less widely uesd than it should be. Its flavor is excellent and it adds a delightful dash of color to many dishes. Sprinkled on top of creamed dishes or mayonnaise, hotel chefs have recognized its value for years as an appetizing touch.

The Spices

From the tropics we get all the long list of flavors which add so much to our enjoyment of food and to the variety which it is possible to have in serving it. Spices are also preservatives. The rich fruit cake which will keep a year owes its keeping quality to the spices it contains. Cinnamon and cloves are the most active antiseptics.

Flavoring Extracts

Vanilla and lemon are the best known and the most widely used.

European explorers found the Aztecs using vanilla to flavor the chocolate which was their favorite drink.

Lemon extract is made from fresh lemon peel.

Synthetic Products

One of the important discoveries of modern science is that wholesome condiments and flavors can be chemically produced. I have in my pantry today some salt which I made in a chemical laboratory fifteen years ago. It is white and sparkling, fine and delicious. It has never absorbed the least particle of dampness. It it were not made from such expensive chemicals it would be an ideal table salt.

In the same way, rrom various chemicals flavors similar to those derived from natural sources may be developed. Vanillin is one of these, and mapleine is another.

Condiment Mixtures

These are a convenienec to the busy housewife who has no time to dry her own herbs and make her onw mixtures of spices. They are skilfully blended for immediate use, and add much to our zest in the enjoyment or food flavored with them.

CURED HIS RUPTURE

I was badly ruptured while lifting a trunk several years ago. Doctors said my only hope of cure was an operation. Trusses did me no good. Finally I got hold of something that quickly and completely cured me. Years have passed and the rupture has never returned, although I am doing hard work as a carpenter. There was no operation, no lost time, no trouble. I have nothing to sell, but will give full information about how you may find a complete cure without operation, if you write to me, Eugene M. Pullen, Carpenter, 5543 Marcellus Avenue, Manasquan, N. J. Better cut out this notice and show it to any others who are ruptured—you may save a life or at least stop the misery of rupture and the worry and danger of an operation.

REFUGEES SPEND MANY WEARY MONTHS ON ROADS

Fatigued and starving by many weeks of travel along endless roads of mud, with little or no clothing to protect them from the bitter weather of a Belgium autumn, and no food to give their frail bodies strength to face the trials of each new day, the refugees, old men, women and small children smown in this picture are seen passing through Rosendaal in Holland, where they have sought safety, comfort and protection from the devastation, death and starvation that would have been their lot had they remained behind.

Day by day the same moving spectacle is to be witnessed along these roads that lead from Belgium into Holland, thousands of old men, women and children pass this way more dead than alive. The suffering of these refugees, these infirm old men, these famished mothers with children at their breasts and these little mites barely able to walk, but who, through rain and cald, wind and storm have trudged hundreds of miles to escape the misery and want and almost certain death that lurks in their own land.

Most of these refugees have been on the road a month, six weeks or even two months. The fatigues of the journey were too much for some of them and the weaker ones died on the roadside, some from exposure and lack of nourishing food, others from afiections caused by the cold and internal maladies.

Many pathetic incidents occurred during the march. Among the refugeees reaching Rosendaal was a young mother with the body of her six months old baby clasped to her breast. The babe had died four days previously, but the mother refused to bury the body in the soil held by the enemy. An old woman from Cambrai travelled for three weeks in a chair tied to the end of a cart. She was too old to walk and sacrcely had she reached neutral soil when the cart overturned and the woman was killed.

And so the endless sufferings of the refugees from Belgium might be recounted without number, and for the thousands that have so far been able t oreach Dutch territory, where everything possible is being done to nurse them back to their former robust health, there are thousands upon thousands still in Belgium who today without help of any kind. Wherever possible food and clothing is being distributed to the suffering population in Belgium by the different centres of the Belgian Relief Commission but the resources of this fund are being severely taxed, and unless still further help is forthcoming from outside centres, the civil population of Belgium will still further be depleted by agonized deaths from slow starvation. A little sacrifice on the part of the people of North America will save many thousands from an unknown grave and bring them back to life and happiness. So much can be done at so small a cost. Send your contributions to your local relief committee or direct to the Central Committee, 59 St. Peter St., Montreal, Que. For four years these people have lived in bondage, today is the day of their liberation. Won't you help them?

Before Breakfast

Do YOU take a cup of tea first thing in the morning? A great many people do, and know well its beneficial effect. They say it clears the head, and fits them better for the day's work. But at this time particularly, the Tea used should be of *Choice quality* and *purest flavor*. KING COLE Orange Pekoe is eminently fitted for this special service. It is indeed "The 'Extra' in Choice Tea".

Ask your grocer for it by the full name.

SOLD IN SEALED PACKAGES ONLY.

KING COLE ORANGE PEKOE

THE EXTRA in CHOICE TEA

TESTED RECIPES FROM RICE FLOUR

Griddle Cakes

3 cups rice flour, 2 teaspoons baking powder, pinch of salt, 1 tablespoon syrup or sugar, 1 egg, Milk to make usual batter.

To use sour milk or buttermilk, use one teaspoon baking powder and soda in proportion to sourness of milk.

Mix in order given and beat well. Bake on a hot griddle and serve with syrup. None better.

Rice Muffins

Very scant ¼ cup butter or other fat, 1 egg, 2 tablespoons sugar, 1½ cups rice flour, 2 teaspoons baking poyder, ½ teaspoon salt, about 1 cup milk.

Cream the fat. Add the eggs and sugar which have been well beaten together. Sift flour, baking powder and salt and add gradually with the milk. Beat all well and bake about twenty-five minutes in well greased muffin rings.

PLAIN BUT---

SERVICEABLE STOVES

Cast Iron. Comfortable heat with any wood.
— Durable. Satisfactory. Economical. —
We make other things you probably need.
Drop us a line.

The Smith Foundry Company, Ltd.
FREDERICTON, New Brunswick.

FACTORY TO HOME

48.50

Six Records FREE

Think of it! The Grand, a handsome, full sized, sweet toned, cabinet phonograph for less than dealers sell old fashioned table-style machines.

This low price is possible only because The Grand is Made in Canada and sold for cash, direct from the factory, saving you duty, interest charges and the huge profits of wholesaler and dealer. It's just like finding $60.00.

Cabinet is impressive in size, 42" high, well proportioned, of very artistic design, honestly made and beautifully finished in quarter cut fumed oak. Motor is powerful, smooth running, and non-vibrating type and equipped with speed regulator. Plays four records with one winding. Special patent tone are and sound chamber produce full, clear volume of tone from all records,—Victor, Columbia, Pathe, Edison, etc.

A money-back guarantee and six records go with every instrument, but owing to increasing cost of material and labor this low price, $48.50, is good for a limited time only. Order now.

Each instrument well packed at factory and shipped as desired, F. O. B., Toronto. Remit by money order, postal note or cheque. Do not send money in envelope unless registered.

The Grand Phonograph Co.

DESK 3580

123 Bay St. Toronto

PUMPKIN RECIPES

Baked Squash or Pumpkin

Break the squash or pumpkin into pieces o funiform size. Wash the pieces, removing seeds and strings. Place with the skin up on triveets, which may stand in any baking-tin. Bake in a moderate oven until soft. Remove the pulp from the skin. Season with salt, sugar, and butter.

Squash Biscuits

Mix two cups of sifted flour, three ane one-half level tablespoons baking ing powder, one tablespoon sugar, and scant level teaspoon satl. With finger tips work in two tablespoons butter and one and one half of lard, add one and one-half cups of cooked, strained squash and one-half cup milk. Pat and roll lightly on floured board, less than one inch thick, shape with biscuit cutter, place in buttered pan, and bake in hot oven fifteen minutes.

Pumpkin Pudding

One cup of cooked pumpkin and stewed tart apples, half cup breadcrumbs, half cup sugar, beaten with the yolks of two eggs, half cup of stoned and chopped raisins with one-half teaspoon of cloves, cinnamon, nutmeg and ginger, and one cup rich milk. Bake in a quick oven for half an hour and spread with the frosting made of the whites of the two eggs, a scant cup of sugar, and a few finely ground nuts. This is delicious.

Canned Squash or Pumpkin

Pare, cut in small pieces, and cook until easily mashed very smooth. Pack in jars in a boiler, and cover with cold water. Boil for two hours and repeat this for two days. Thoroughly cool before putting away in a dark place.

Pumpkin Fritters

One pint of cooked, finely mashed pumpkin, two well beaten eggs, half teaspoon salt, a little ginger, one tablespoon of sugar (molasses will do,) one pint of milk, and flour to make a stiff batter. Drop on an oiled griddle and saute a delicate brown.

Pumpkin Timbales

Two cups cooked pumpkin, the well-beaten yolks of four eggs, one teaspoon salt, and one saltspoon of pepper. Mix well and fill timbale cups. Set them in boiling water and bake in a quick oven.

Preserved Pumpkin

Peel and slice into small pieces and drop into a boiling syrup of one quart, each, of water and maple syrup, and a sliced lemon. Boil until clear and tender, put in jars and cover well with the syrup.

Pumpkin Marmalade

Select a choice deep yellow pumpkin, cut into pieces, removing all "strings," grate on rather coarse grater and mix with an equal weight of sugar, add the juice and grated rind of an orange or lemon and boil slowly, skimming well and stir to prevent scorching until it is smooth and thick as usual marmalades. Fill jars or glasses while warm, seal, and keep in a cool place.

Pumpkin Butter

Take amount of cooked, well-pressed pumpkins as required and boil in the juice pressed from them, to the consistency of apple or other fruit butters, add sugar, and flavor to taste with cinnamon or any preferred spice.

Pumpkin Chips

Scrape and cut into real tihn slices, a choice, sweet yellow pumpkin, and to each pound add one pound sugar, a gill of lemon and orange juice, and th egrated rinds of both. Stir well and let stand overnight, cook slowly until tender, carefully lift from syrup and let stand until cool and firm, perhaps more than a day, then put in receptacles and pour the syrup over them.

RELIEF AT LAST

I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.

Address

MRS. M. SUMMERS, Box 309
Windsor, Ont.

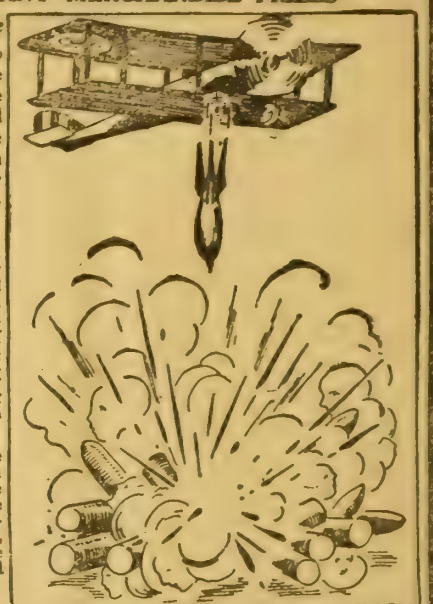
FREE PRIZE PUZZLE $4500.00

In Cash has been Given Away FREE also hundreds of Merchandise Prizes

$200.00 more IN CASH will be Given Away as follows

1st Prize, $50.00 in Cash. 2nd Prize, $40.00 in Cash
3rd Prize, $35.00 in Cash. 4th Prize, $25.00 in Cash
5th to 9th Prizes—Each $10.00 in Cash.

TOGETHER WITH MANY MERCHANDISE PRIZES



Herewith will be found the picture of an Aviator who has just dropped a bomb on a pile of Shells. At first glance the Airoplane and the Explosion appear to be all there is in the picture, but by careful study the faces of several soldiers will be found. There are 7 of them in all. Can you find them? It is no easy task but by patience and endurance can be accomplished.

You may win a cash prize by doing so. Many have done this as will be shown by the names and addresses which we will send you. If you find the faces mark each one with an X, cut out the picture and send it to us, together with a slip of paper on which you have written the words "I have found all the faces and marked them." Write these nine words plainly and neatly, as in case of ties, both writing and neatness are considered factors in this contest.

This may take up a little of your time but as TWO HUNDRED DOLLARS in cash and many merchandise prizes are given away, it is worth your time to take a little trouble over this matter. Remember all you have to do is to mark the faces, cut out the picture and write on a separate piece of paper the words, "I have found all the faces and marked them."

WE DO NOT ASK YOU TO SPEND ONE CENT OF YOUR MONEY IN ORDER TO ENTER THIS CONTEST

Send your answer at once; we will reply by Return Mail telling you whether your answer is correct or not, and we will send you a complete Prize List, together with the names and addresses of persons who have recently received over Four Thousand Five Hundred Dollars in Cash Prizes from us, and full particulars of a simple condition that must be fulfilled. (This condition does not involve the spending of any of your money.)

Winners of cash prizes in our late competitions will not be allowed to enter this Contest.

This Competition will be judged by two well known business men of undoubted integrity, who have no connection with this Company, whose decisions must be accepted as final.

Upon receipt of your reply we will send a complete list of the names and addresses of persons who have won $4,500.00 in Cash Prizes in recent contests held by the publishers of this advertisement. Although these persons are entirely unknown to us, they are our references. An enquiry from any one of them will bring the information that our contests are carried out with the utmost fairness and integrity. Your opportunity to win a good round sum is equally as good as that of anyone else, as all previous winners of cash prizes are debarred from entering this contest.

Send Your Reply Direct to

GOOD HOPE MANUFACTURING COMPANY

46 ST. ALEXANDER STREET, MONTREAL, CAN.

PATCHING WITH THE MACHINE

Men's working clothes are, perhaps, the greatest bugbear to farm women. They are so heavy and stiff and uninteresting, and, somehow, always so in need. But if gone about rightly these neen not be so hard, and if done promptly and well a woman will largely lose her dread of them. Most of the work of mending such garments may be done on the machine. First, have them clean. Then, if it is overalls, and there are holes in the knees, rip up the inside seams nearly to the joining. Lay the open leg out flat on a table and pin the patch, amply large, over the hole on the outside. Then baste firmly in piace and sew down on the machine. Trim the ragged edges of the hole and sew turned down edge to the patch. Mend smaller holes over pockets and in seat the same way. Then sew up the legs again, sewing back a few inches at the bottom to prevent ripping. If jacket and sleeves are ragged, cut ofi worn part, and using removed portion for a pattern cut a new part, make on machine and sew on. Fronts may usually be patched the same as overalls. But once a garment of this sort is mended in this way it will seldom pay to do much more with it when it comes to rags again. Shirts do not usually pay to patch extensively, especially in the summer time. Where backs give out first a lining of cheap muslin sewed in on the machine may be profitable, and snags and tears should always be repaired; but aside from this better spend one's time otherwise.

WHAT CAN I GIVE HIM?

"What can I give father?" I was asking myself one Christmas in despair, when father himself solved the question. He is superintendent of a large iron-works, and found that his constant coming and going in the shops resulted in an ugly deposit of grime in the links of his watch-chain. So he asked me to knit him a watch-guard of black silk.

The making was simple. Eight stitches were cast on, and after the first row, "slip one, knit seven," in plain garter-stitch, was the only formula to be remembered. The strip was double the length from vest buttonhole to pocket, with a scant ertra inch allowed for the "looping through."

When finished, the ends were joined flatly, with the loose end of silk remaining after casting off, used as the sewing thread. If preferred, the ends might be fastened to a watch-bar of metal, which is to be passed through the buttonhole.

As for the cost, a forty-cent half-ounce spool of standard grade knitting or crochet silk will make several—easily three or four. A pair of steel needles, number twenty, are the right size, and wil lserve indefinitely, if kept from rust.

Such a guard is handsomer, stronger and more lasting than any silk ribbon or woven cord. And being elastic my father told me, it was less apt to jerk the watch out violently, if it should catch in anything by accident.

No sooner was the first one finished and in use than my brother announced that he, too, ought to have on like that. Now nearly twenty years after, a Christmas list without one or more

watch guards on it would seem impossible.

A week or two ago, the third generation openly hinted that shoestrings may be strong, all right, but aren't much for looks, while a piece of black ribbon wears out and—don't I suppose I could knit one of those about twenty inches long——

Of course I can!

FIVE FILTHY FINGERS

Did you ever make a diary of your fingers? Did you ever set down in cold black and white the things your fingers touch every day and did you ever consider the number of times daily that your unwashed fingers seek your mouth?

When surgeons discovered that it was their own infected fingers which carried germs into wounds, they set about trying to discover a means whereby their hands could be rendered surgically clean, i. e., free from germs. The whole realm of chemistry was ransacked for agents which would disinfect hands, and the scrubbings and immersions to which they subjected their hands are even yet a tender memory to the surgeons of that period. But all of these ecorts proved useless and at last in despair surgeons took to wearing rubber gloves which could be boiled, thus bringing to each patient, as it were, a fresh pair of sterile hands. In other words, try as you will, you can't by any known method make your hands absolutely clean.

How Germs Are Carried

The great agent in the spread of those diseases whose causative organism is present in the secretions of the mouth and nose, is the human hand; and if saliva was bright green we would be amazed at the color of our fingers. As a matter of fact most of us carry our fingers to our mouth or nose many times daily, there to implant the germs of disease which other careless people have spread about, there to collect a fresh cargo of infectious material to scatter for somebody else.

It is true that most germs of disease die quickly once they leave the human body, but what does the death of a few billion germs matter so long as the supply is copious and never ending.

What an enormous number of infected things we touch during the day and how infrequent and cursory are the hand washings we perform!

The answer is to keep your fingers out of your mouth and nose. Thus we limit the spread of disease from those orifices at least, thus we eliminate the danger of contracting disease from sonmeone who was not quite so careful.—Reprinted from the United States Public Health Service.

SELECTING CLOTH FOR WINTER SUITS

In selecting cloth materials for winter suits and dresses do not be "penny wise and pound foolish." Remember that such materials have much labor put on them in the making, and that they are capable of hard wear when of good quality. For this reason get a fair quality, as it not only outlasts an inferior one bue also retains its freshness much longer. Judge for yourself of the quality by examining the texture, and avoid all sleaky, loosely woven stuffs, as they will sag and are apt to fray as well. Another thing; know how much you require before purchasing. In buying materials costing the present prices a very small piece too much proves expensive.

The woman who does her own sewing, or has a seamstress come to the house, will find considerable saving in buying needles, threads, buttons, seam bindg ,feather stitching band, and the things of like character, by the dozen —with the exception, perhaps of colored threads. These being used to match certain dresses should be purchased as they are required. If you make underwear at home, buy longcloth by the piece, as well as beading and wash ribbon.

"I know exactly what is the matter with you, Jack. You have lost confidence.

"YOU were getting along fine until you had that nervous breakdown, but since then you have been worried and anxious.

"Now you have got discouraged and down-hearted, and it is no wonder you cannot make sales.

"The salesman must have lots of energy and vigor as well as confidence in himself and what he has to sell.

"But you cannot have confidence in anything so long as your nerves are weak and you spend the nights worrying instead of getting good, refreshing sleep.

"Take my advice, boy, and go straight to the drug store and get half a dozen boxes of Dr. Chase's Nerve Food. Then make up your mind that while you are using this you will get out into the fresh air all you can and forget to worry.

"Now, you may feel pessimistic after all the treatments you have been taking, but I know what I am talking about.

"My nerves were in a worse condition than yours ever were. I could scarcely get a wink of sleep, and did not care whether I got anything to eat or not.

"Besides, I got so irritable and downhearted that nothing seemed to go right.

"The experience that I had enables me to sympathize with you now, and also to say that I am certain that Dr. Chase's Nerve Food will help you.

"It is entirely different to most medicines used for the nerves, because instead of merely stimulating the tired nerves to over-exertion, it nourishes them back to health and vigor.

"Now, Jack, you must give the Nerve Food a trial, and I know you will consider me your best friend for telling you about it."

Here is an interesting letter from another business man who had a similar experience with Dr. Chase's Nerve Food :

Mr. W. J. Wilson, Grocer, Perth, Ont., writes : "In fitting up this building for a grocery business I worked very hard, and after putting in my stock I continued plugging away, good and hard, too. I commenced to feel myself going down—my weight went from 180 pounds down to 154 pounds. My appetite began to fail, and, of course, upon retiring I could not get a good night's rest. Sometimes after going to sleep my nerves would twitch, and I would waken up with a start, and then lie awake for hours. I remembered having used Dr. Chase's Nerve Food before, so I started in again, and took a good treatment, using about half a dozen boxes. I soon felt my appetite returning, I could sleep well, and commenced gaining in weight, until I felt like a new man. From the benefits I have received from the use of Dr. Chase's Nerve Food I cannot speak too highly of it."

Dr. Chase's Nerve Food, 50c a box, 6 for $2.75, all dealers, or Edmanson, Bates & Co., Limited, Toronto. Look for the portrait and signature of A. W. Chase, M.D., the famous Receipt Book author, on the box you buy.

TO CLEAN AN OILED MOP

These mops lose their efficiency when they become too dirty and caked with dust. They may be washed in strong, hot suds, but this can be dine much better if the mip is first washed in gasoline ti cut the oil. Gasoline which has been used for cleaning should be saved for this purpose. After the mip is well washed in gasoline let it dry, then wash in suds. Then when thoroughly dry, oil it again and it is as good as ever. The best way to apply the iil is to piur a little in the tin box mop comes in, and put the mop with the strings down into the can and let it remain for a few days to evenly absorb the oil.

SUPPLIES FOR ENTERTAINING

One medium sized loaf of bread will cut in twenty slices for sandwiches.

One mediumt layer cake will serve twenty.

One gallon of ice cream will serve twenty.

One gallon of ice will serve twenty-five.

Three quarts of wine jelly will serve fifty.

A ten-pound turkey or twelve pounds of chicken with fifteen heads of celery will make salad for fifty people.

Two quarts of bulk oysters will make one large pan of escalloped oysters and serve twenty.

One pound of coffee will serve thirty-five.

When spreads show signs of wear along ends, sew a piece of firm, white material across the thin portions. Very old spreads can be made into splendid bath towels. When sheets begin to wear thin in the middle cut them in two and sew the outside together so that they will come to the centre, hemming the outside edges.

MARKETS.

MONTREAL

COUNTRY PRODUCE

Montreal, Dec. 1st.

The feature of the egg trade today was the stronger feeling in the market for strictly new laid stock, and prices were advanced 3c per dozen, which was attributed to the steady increasing demand for the same, and the continued limited supplies coming forward, and sales in a jobbing way were made at 68c per dozen. There was no change in the condition of the market for cold storage stock, prices being firmly maintained, with a good demand, and an active trade continues to be done. The receipts today were 1,100 cases, as against 1,979 for the same day last week, and 825 for the corresponding date a year ago.

We quote wholesale jobbing prices as follows:

Fancy new laid eggs.....00c to 70c
Strictly new laid.....00c to 68c
Selected fresh stock.....00c to 55c
Cold storage selects.....00c to 54c
Cold storage No. 1.....00c to 50c

Owing to the colder weather prevailing the receipts of dressed poultry were larger today, there being quite a few small lots on the market, for which the demand was good. Sales of good to choice turkeys were made at 36c to 38c per lb., and some poor lots were disposed of as low as 33c. Supplies of live poultry continue to come forward freely, but dealers say if the present cold spell continues the shipments will decrease, and dressed stock will be shipped in their place. The demand for the latter was good, and the trade on the whole was active, with no change in prices to note.

We quote prices for dressed poultry as follows:

Turkeys, per lb.....36c to 38c
Chickens.....25c to 30c
Ducks.....29c to 31c
Fowl.....23c to 29c

Owing to the colder weather a better feeling prevailed in the market for potatoes today, but there was no actual change in prices. The demand for local consumption continues good, and trade in a wholesale jobbing way was fairly active. The receipts were fair, and stocks on spot at present are ample to meet all immediate requirements. Sales of Green Mountains were made at $1.90, and Queec white stock at $1.70 to $1.75 per bag of 90 lbs. ex-store. Car lots of the former were quoted at $1.80, and the latter at $1.50 per bag of 90 lbs. ex-track. The tone of the market for turnips was firm, with a good steady demand for supplies, and sales of Quebec grades in a jobbing way were made at $1.25 per bag of 70 lbs. ex-store. The trade in onions was also fairly active, and prices were maintained at $1.50 to $1.75 per bag of 70 lbs. ex-store, as to quality.

A revised estimate of the Canadian potato crop from figures in possession of the Canada Food Board shows an exportable surplus in six provinces of 28,438,000 bushels over all requirements for domestic use and seeding. Alberta, Saskatchewan and Ontario have no surplus. Early frosts and prolonged drought reduced the yield below normal in these provinces. On the contrary, Quebec, New Brunswick and Manitoba show a remarkable surplus of 24,500,000 bushels. The balance of 3.933,000 bushels is in Prince Edward Island, Nova Scotia and British Columbia.

The seeded area of potatoes in Quebec in 1918 was 264,871 acres, as against 226,917 in 1917. The yield per acre in 1918 was 147 bushels, as compared with 80 for the previous year. The total yield in 1918 was 38,936,000 bushels, as against 18,158,000 in 1917. The value of the crop is estimated at $38,157,300, as compared with $25,058,000 for 1917.

The seeded area of turnips in the Province of Quebec for 1918 was 95,526 acres, as against 70,192 in 1917. The yield per acre in 1918 was 295.50 bushels per acre, as compared with 224.50 last year. The total yield for 1918 was 28,227,900 bushels, as against 15,759.000 in 1917. The total value of the crop for 1918 is estimated at $14,860,000, as compared with $9,298,000 for 1917.

New York, November 26—Eggs, firm. Receipts, 7,591 cases. Fresh gathered, extras, 73c to 74c; fresh gathered, regular packed, extra firsts, 71c to 72c; do. firsts, 67c to 70c; State, Pennsylvania and nearby western hennery, whites,, fine to fancy, 92c to 95c; State, Pnnsylvania and nearby hennery, browns, 76c to 80c; do. gathered, browns and mixed colors, 65c to 74c.

DAIRY PRODUCE TRADE

Montreal, Dec. 1st.

The receipts of butter today were 840 packages, as against 3,870 for the same day last week, and 439 for the corresponding date a year ago. At Gould's Cold Storage today the offerings amounted to about 200 packages, which sold at 49c per lb., f.o.b., country points. The feature of the local trade was the stronger feeling in the wholesale jobbing market for finest grass-made creamery, and dealers in some cases have advanced their prices 1c per lb., which is attributed to the smaller offerings of this grade of butter, and the steady increasing demand for supplies for local consumption, and sales of 10 to 25 package lots were made today at 51c per lb. in solid packages, and at 52c in 1-lb blocks. The trade in a wholesale way was reported rather quiet, and prices unchanged.

We quote wholesale prices as follows:

Finest creamery.....51c to 51½c
Fine creamery.....50c to 50½c
Finest dairy.....44c to 45c
Fine dairy.....40c to 42c

The receipts of cheese today were 2,736 oxes, as compared with 2,710 for the same day last week, and 4,402 for the corresponding date a year ago. At Gould's Cold Storage there were 2,000 boxes offered, for which the demand was good from exporters, and all sold at 24⅜c per lb. and 5c per bog, f.o.b., country points. The tone of the market for Quebec small cheese and twins is strong, and sellers today in some cases were asking 27c per lb.

The following prices are being paid by the Commission:

No. 1 cheese.....25c
No. 2 cheese.....24½c
No. 3 cheese.....24c

THE PROVISION MARKET

Montreal, Dec. 1st.—There are no further developments in the live hog situation, but the tone of the market is firm at the improvement in prices noted. The offerings were smaller, but they were quite ample to meet the requirements of the trade, and sales of long-run selected lots were made at $18.50, and short-run stock at $17.75 to $18.25 per 100 lbs. weighed off cars. The Winnipeg market yesterday was unchanged, with selected lots selling at $17.75 per 100 lbs. wegihed off cars. On account of the cold weather prevailing there was an improved demand for dressed hogs, and the undertone to the market was firmer. A fair trade was done in a wholesale jobbing way in abattoir fresh-killed stock at $23 to $23.50, and in country dressed at $20.50 to $22.50 per 100 lbs.

The condition of the market for smoked and cured meats was unchanged, prices generally being steady under a fair demand for small lots for local consumption and for shipment to country points. The demand at present is principally for bacon, of which supplies were ample and sales in a wholesale jobbing way of breakfast grades were made at 42c to 43c per lb. Windsor selected bacon at 45c to 46c, and Windsor boneless bacon at 48c to 50c. The trade in hams was rather slow, as is usual at this season of the year, with 8 to 10-lb. size quoted at 37c per lb., 12 to 15 lbs at 35c to 36c, and heavier weights at 34c. Now that colder weather has set in the prospects are that there will he an improvement in the movement of barrelled pork. There was no change in prices to note, car lots of American bean pork being quoted at $41 per barrel, duty paid; short-cut clear pork at $46, and clear-cut fat back pork at $56.

The demand for lard continues fairly good, and a fair trade was done in a jobbing way. Supplies were ample to meet all requirements, and prices ruled steady, with sales of Canadian pure leaf grades at 31c to 31½c to 31per lb. in 20-lb. wood pails, and at 32c to 32½c per lb. in 1-lb. blocks, while American compound lard sold at 27c per lb. in 20-lb. wood pails.

The receipts of provisi ns today were 810 packages lard, and 1,608 tinned meats.

HIGH BUTTER PRICES

Chicago, Dec 1st.—Investigations into the reasons back of the present unprecedented high cost of butter and eggs have brought forth assertions from produce dealers in Chicago that the farmer is receiving nearly eighty per cent. of the above-normal increase. The remainder was said to be divided among manufacturer, jobber, wholesaler and retailer. The best quality of butter in Chicago is selling retail at 73½ cents a pound, with strictly fresh eggs at 78 cents a dozen.

J. W. Low, president of the Chicago Butter and Egg Board, in a statement today, said the present high prices were the result of market conditions, and denied a charge of profiteering by either the producer or dealer.

MILLFEED AND ROLLED OATS

Montreal, Dec. 1.

A good steady trade continues to be done in all lines of millfeed, and the market is active, with no change in prices to note. There is considerable inquiry for car lots of most feedstuffs, but on account of the heavy demand for supplies at this season of the year from all over the country, millers generally are confining sales to mixed car lots, and they state that they have all they can do to fill the orders coming forward for the same. Car lots of bran were quoted at $37.25, and shorts at $42.25 per ton, including bags, ex-track, and bran at $39.25 and shorts at $44.25 per ton, ex-warehouse, including cartage, less 25c per ton for spot cash. Sales of broken lots of pure grain mouille were made freely at $68 to $70, pure oat mouillie at $64, barley feed at $60 to $62, and mixed moullie at $50 per ton, including bags, delivered to the trade. There was no change in prices for rolled oats today, on account of the reaction in the market for the raw material. The demand for broken lots was steady and sales of standard grades were made at $4.85 to $5 per bag of 90 lbs., and Golden cornmeal sold at $5.40 to $5.60 per bag, delivered to the trade.

New York, Dec. 1.—Butter, firm. Receipts, 6,543 tubs. Creamery, higher than extras, 67c to 67½c; creamery, extras, 92 score, 66c to 66½c; firsts, 60½ to 65½c; packing stock, current make, No. 2, 39½c. Cheese, strong. Ceceipts, 1,983 oxes. State, whole milk, flats, fresh, specials, 35c to 36c; do. average run, 34c to 34½.

THE N. B. BREEDERS CONSIGNMENT SALE

(Continued from page 134)

Minas Hero, 133505, contributed by L. M. Anderson, sold to B. Briggs, Pinder, N. B., for $100.00.

Baronet, 122468, contributed by L. M. Anderson, sold to Burton Agricultural Society for $100.00.

Bull calf, contributed by P. L. Fairweather, Rothesay, N. B., sold to W. P. Gallagher, Centreville, N. B., for $100.00.

Shorthorn Females

Lady Gray, 115998, contributed by L. M. Anderson, sold to F. R. Taylor, Rothesay, N. B., for $125.00.

Ruby, 103849, contributed by P. R. L. Fairweather, sold to W. S. Harding, Hammond River, for $220.00.

Heifer calf, contributed by L. M. Anderson, sold to F. R. Taylor for $36.00.

Heifer Calf contributed by L. M. Anderson, sold to F. R. Taylor.

Holstein Males

Faforit Csampion, 36849, contributed by Harding Bros., Welsford, sold to Arnold Carpenter, Carpenter, N. B., for $510.00.

Mercena Bill Abbekerk, 34308, contributed by Jas. Bremner, Jr., Chatham, N. B., sold to B. Briggs, Pinder, N. B., for $100.00.

Bull calf contributed by W. S. Harding, Hammond River, N. B., sold to Centreville Agricultural Society for $125.00.

Dickie Netherland, 26372, contributed by Thos. Caldwell, Florenceville, N. B., sold to A. E. Trites, Salisbury, N. B., for $100.00.

Holstein Females

Minnie De Kol Fayne, 60732, contributed by Harding Bros., Welsford, N. B., sold to C. C. Edgar, Three Brooks, N. B., for $86.00.

Heifer calf, contributed by Harding Bros., sold to Robt. Gray, Kingsclear, N. B., for $55.00.

Dutchess De Kol Faforit, 60731, contributed by Harding Bros., sold to Robt. Gray for $87.00.

Ayrshire Males

Gladstone Masterman, contributed by C. P. R. Farm, Fredericton Junction, sold to Murray Patterson, Lincoln, for $50.00.

Duke of Lakeville, 60057, contributed by E. M. Morse, Lakeville, N. B., sold to A. E. Trites, for $75.00.

Springbrook Prince Charles, 55901, contributed by McIntyre Bros., Sussex, N. B., sold to Frank Jardine, Quarryville, for $125.00.

Springbrook Prince George, 55902, contributed by McIntyre Bros., sold to L. J. Donovan, St. John, for $300.00.

Springbrook Doryeas, 60992, contributed by McIntyre Bros., sold to H. V. Dickson, Hammond River, for $120.00.

Ayrshire Females

Labelle D., contributed by McIntyre Bros., sold to Jasper Burnett, Fredericton for $75.00.

Springbroo kLily, 55900, contributed by McIntyre Bros., sold to Thos. Chatfield, Fredericton, for $80.00.

Mollie of Glenvale, contributed by McIntyre Bros., sold to Thos. Chatfield for $110.00.

Olive of Glenvale, 57238, contributed by J. A. Hughes, Petitcodiac, N. B., sold to H. T. Douglas, Stanley, for $135.00.

Ayrshire Cow, contributed by McIntyre Bros., sold to Thos. Chatfield for $185.00.

Sheep

Pair Oxford Ewes, contributed by Burder Goodwin, sold to A. C. Taylor, Salisbury, for $46.00.

Cheviot ram, contributed by N. B. Department of Agriculture, sold to T. G. Hetherington for $30.00.

Cheviot ram, contributed by N. B. Department of Agriculture, sold to Allen Turner, Dorchester, $36.00.

Cheviot ram, contributed by N. B. Department of Agriculture, sold to Allen Williams, Harvey Station, for $42.00.

Cheviot ram and nine ewes, contributed by N. B. Department of Agriculture, sold to Geo. King, Sussex, for $615.00.

THE SHEEP TICK—WHAT IT IS

(Continued from page 143)

a preparation having lasting properties, the sheep may subsequently pick up more ticks, but they will suffer little or no harm. It is the ticks that will suffer, finding the dip-impregnated fleece too unpleasant an abiding place, and, in consequence, they will do little harm to the sheep or to the wool.

When, however, the Ticks are allowed to become numerous and vigorous by neglect to dip with an effective

and lasting dip, they bring down the condition of the sheep, and check the growth of wool, causing much to be rubbed away and staining what remains.

Ticks and Lambs

The passing of Ticks from ewes to lambs at shearing time is a particularly serious matter, constituting one of the greatest losses in sheep farming. Ticks play havoc with lambs, giving them, at a crucial period of their lives, a check from which they never entirely recover.

It is necessary, therefore, to dip lambs at the shearing of the older sheep, before the Ticks which have migrated from the ewes have had time to deposit eggs in the lambs' fleeces. The importance of this practice is being increasingly recognised, as is only natural in countries where the lamb and mutton trade is of such vast importance.

As it is believed by some (though entirely erroneously) that poisonous Dips are too strong for young lambs, non-poisonous preparations are coming into use for them, and may suffice so long as the dipping is done before the Ticks have had time to deposit their eggs; but it is necessary to dip the lambs again before winter in a Dip, in order to secure the advantages of the protective qualities of which non-poisonous Dips have none, either against fresh Ticks coming on, or Ticks hatching in the fleece.

The soundness of this practice must be apparent to longwool and crossbred sheepowners, who will have observed how much more acute the Tick trouble always is amongst undipped hoggets as compared with adult sheep.

In dipping lambs at shearing time, especially when non-poisonous preparations are used, there is always risk of a certain percentage being disowned by their mothers. To avoid this contingency many sheepowners now defer dipping the lambs until after weaning, and their experience shows that the cost and trouble of this practice are trifling in view of the resultant advantages. Many sheepowners always thus dip lambs intended for ferezing before turning them on rape, and find that they derive immense benefit from it, avoiding, as they do, the loss of as much as a fortnight's feed.

It is scarcely to be expected that lambs, which are notoriously so sensitive and subject to the attacks of Ticks, con, when harassed by their presence, yield fully satisfactory returns for any feed on to which they may be put.

How Long Sheep Ticks Survive Separation From Their Hosts

Fully developed ticks were removed from a sheep, and protectively placed on grass, on October 22nd, 1910. On the evening of the 23rd, they remained alive, but on the morning of the 24th, they were all dead. On the 29th October, more ticks were removed and similarly placed. On the evening of the 30th, they were all alive, but on the morning of the 31st, some were dead, and in the afternoon, all were found dead. Tests, so far, therefore show that **sheep ticks can only live apart from their hosts, aobut two days.**

Age at Which the Sheep Tick is able to Produce the First Pupa

Experiments on this subject, so far, show that **a sheep tick becomes fully developed when about 12 days old.**

The Certainty With Which a Good Dip Will Kill Ticks

Two sheep, badly infected with ticks, were received into the pens provided for them, on the 3rd October last (1910.) One sheep was shorn and dipped, the second was dipped in its wool of nine months' growth. The shorn sheep was immersed for one minute, in a dip prepared from an arsenical dipping powder, according to directions on the packet, at 9 o'clock in the morning. At noon of same day, about 30 ticks were found dead upon the floor of the shed in which the shorn sheep had been placed. The following day (October 4th) a few live ticks were found on the sheep. On the 5th, one tick was seen alive, but on October 6th, **three days after the dipping, the sheep was found to be free from ticks.**

The sheep was inspected every day for 10 days, when it was artificially hand infected with live ticks, **all of which, in 26 hours, were found to be dead.** A week afterwards the sheep was again infected with live ticks, but after watching them 2½ hours, **it was seen that these ticks would not keep upon the sheep,** so they were killed.

The dipped unshorn sheep was perfectly free from ticks—with one immersion. Most of the pupae, (tick eggs) were rendered sterile, and the few that incubated, died.

These sheep were sent to the Quarantine Station on November 7th, 1910, where they were, at the date of the Report (July 21st, 1911), **absolutely free from ticks, and their wool in splendid order.**

The Protective Properties of a Good Dip

On the 2nd November (1910), two more ticky sheep were received. One was shorn and dipped in the same preparation, with the same time of immersion, with the same result—**all ticks died in 30 hours.** The other sheep was not dipped, but kept in the wool with the ticks on it.

After a lapse of ten days, and many inspections of the shorn dipped sheep, **which remained free from ticks** it was placed in the pen, with the undipped ticky sheep, and in half-an-hour, three Ticks were found on the dipped sheep, which was then placed by itself, and **in elss than 26 hours two of these Ticks were found dead and the other very sick.** The shorn dipped sheep was again placed with the undipped ticky sheep for three weeks, and **was not again found to be infected.**

Good Advice

After disproving the theory that ticks are spontaneously bred on the sheep, the Report concludes with the following pregnant advice to sheepowners—advice which, in the interests of their own pockets, they cannot too closely follow:—

"They (sheepowners) should not forget to be thorough in their work, and collect every sheep, and dip in an effective dipping preparation."

The practical results of the experiments described in the above summary, give singular force to the closing recommendations of the Chief Stock Inspector of Tasmania, who has probably had a longer and greater experience in cleansing sheep than any othr official in Australasia.

Observe the protective effects of **thorough immersion in a good Dip.** The sheep was rendered **immune from tick infection.** How often are flocks just "run," and even rushed, through the bath? It is not enough to merely wet the sheep in dipping; to secure lasting effects, **they must be thoroughly saturated with the Dip right down to the skin.** They must also have sufficient growth of fleece to carry away and hold the effects of the dipping; and these experiments also show that instantaneous destruction of the insects at the dipping is no criterion of efficiency. Indeed, a slowly acting dip is incomparably more lasting in its effects than preparations which mix instantly and kill instantly. Quick action and lack of lasting powers go together, especially in the action of sheep dips. Powder Dips are slow but sure.

Lasting protective properties, to ward off re-infection, are, therefore, the first essentials in the choice of a preparation for economic sheep dipping; and, in the dipping operation, immersion to saturation is indispensable to efficiency.

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CANADIAN FERTILIZER CO., Ltd.

CHATHAM, ONTARIO

CONSERVING THE FARMER'S GREATEST ASSET IN MAINTAINING SOIL FERTILITY

(Continued from page 133)

much as it is convenient to store before hauling it to the field.

Value of Liquid Manure.—The figures in the accompanying tables, which are taken from Bailey's **Cyclopedia of American Agriculture,** clearly emphasize the wisdom of taking every precaution to prevent the loss of liquid manure. The amount of liquid manure produced as compared with solid manure will vary much according to the kind of feed being used and the age of the animal being fed. In some cases, the weight of the urine will be greater than the weight of the solid manure. In any case, the amount is sufficient to warrant the closest attention to prevent it being lost.

Saving Liquid Manure.—The simplest way to save liquid excrement is to absorb it by the use of plenty of bedding. Many materials may be used for this purpose but straw is likely to be the most common and available absorbent in Dundas county. It is quite commonly thought that straw in the manure is not as valuable as clear manure, but if the straw has been used to absorb the liquids it is more valuable than is generally supposed. Marsh grass, leaves, sawdust and shavings may be used for the same purpose. The two last mentioned should not be used in large quantities as they have no fertilizing value and lower the value of the manure. It is a good plan to have a quantity of fine dry soil or dried peat or much on hand to use in conjunction with the ordinary kinds of bedding. These earthly materials are valuable as bedding and have the added value of possessing the power to absorb ammonia gas as well as the liquids and so prevent the loss of nitrogen and help to keep the air of the stable sweet. Collecting the liquid manure and distributing it upon the fields by means of a tank with a sprinkling attachment has been practised to some extent, but this plan has not been found to be generally practicable. Ordinarily, more satisfactory results are obtained by using absorbents and plenty of bedding.

SOME ADVANTAGES OF DAIRYING

1. The sale of dairy products furnishes a steady income throughout the year. The farmer who depends upon crop sales for his income usually makes the bulk of his sales during one or two months of the year, while during the rest of the year he has no cash income. Such a system requires long credits in the community.

2. The market of dairy products fluctuates very little year by year as compared with other farm products.

3. Through the return of manure to the land the fertility and physical condition of the soil may be maintained at a high level and crops increased. Even after many years a properly maintained dairy farm has constantly increasing crop yields, instead of decreasing ones.

4. In dairying, labor may be utilized at a more uniform rate throughout the year than in nearly any other farm business. The grain growers, for example, may have to employ much additional labor at harves time, but as far as the dairy is concerned the dairyman has about the same duties to perform every month of the year. Thus, less help is required seasonally and permanent employees may be kept.

5. Through the dairy cow many unsaleable roughages may be transformed into products from which cash may be utilized. Grass, hay, corn fodder, and other roughage which may not have a ready sale, are economically utilized by the dairy cow. Land which is not suitable for cultivation can be utilized for pasturage for dairy cows. —U. S. Department of Agriculture.

PROVIDE FOR LIGHT AND VENTILATION IN DAIRY BARN

In the construction of a dairy barn, too much emphasis cannot be laid on the providing of proper light and ventilation. These two items are paramount as preventive measures against diseases, especially those of the respiratory tract, according to Wm. H. Feldman, of the Colorado Agricultural College. Mr. Feldman says: "Three to four square feet of window surface should be provided for each cow and the glass should be kept clean and not allowed to become covered with dirt and filth.

"A coww requires 59 cubic ft. of air per minute, or ',540 cubic ft. per hour. To provide such a quantity demands that a proper number of inlets and outlets of the right size be installed. To find the minimum number and size of the outlets and inlets, proceed as follows:

"By dividing the total cross-sectional area by the number of inlets and outlets the cross sectional area of each inlet and outlet may be determined.

"The ventilating system as devised by the late F. H. King is to be recommended.

"Multiply the number of cows by 59, divide by 300 and multiply by 144. The result will be the total cross sectional area of inlets and outlets required in inches."

BEST METHODS TO CLEAR LAND OF TREE STUMPS

Stumps occupy valuable land; foster the growth of weeds, for in order to keep the land in their vicinity clean much hard labor is necessary; mar the appearance of otherwise smooth fields, and hence reduce the selling price of a farm. They furnish shelter for harmful insects and animals and prevent the efficient use of modern machinery. The bulletin tells how they may be removed by burning, by explosives, by mechanical means, or by the combination of any or all of these three methods. There is no "best method" of ridding land of stumps, and the selection of a method for their removal should be determined only after a consideration of the facts involved.

Timber land that is not producing a profit and which is to be cleared is usually utilized as pasture for several years before stumps are removed. During this time the under brush is cleared up and many small stumps will entirely decay. If the weeds and sprouts in a pasture are kept under control native grasses will gradually establish themselves, even if no seeding has ever been done.

Care Needed in Burning

Destroying stumps by means of burning is an economical method and is widely practiced, but care should be exercised if this method is used in order to destroy the roots, so that they will not interfere with cultivation.

A common method of preparing a stump for burning is to dig two holes on opposite sides of the stump to a depth of about 30 inches. Generally connection is made at the bottom of these holes by digging away the wall of earth between them. Any adhering earth is scraped from the tap root and a fire started in one of the holes. If the fire is kept up it will burn most of the objectionable underground parts of the stump. Another method successfully used in the long-leaf pine area of the south is to dig a hole on one side of the stump, and with a 1½ inch or 2-inch auger bore a hole diagonally through the tsump from the opposite side to the bottom of the hole. A fire is then started in the excavation and the auger hole serves as a flue. A method largely used in the Northwest is to bore a hole horizontally into the base of the stump to a point a little ebyond the centre. Another hole is started as high up on the side of the stump as possible and bored

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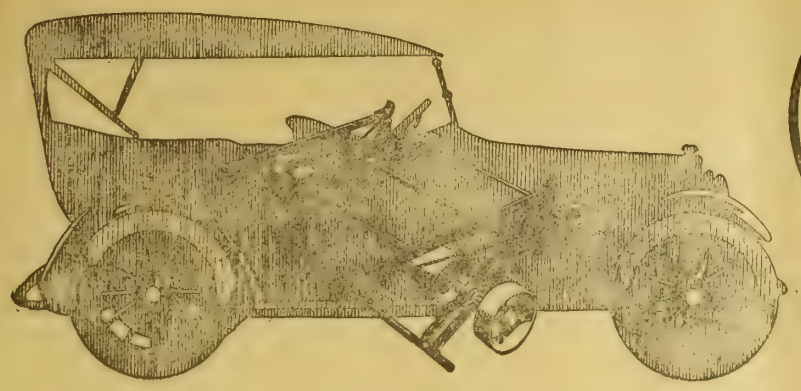

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downward at an angle until it meets the first boring. A fire is started at the interception by the use of oil pitch, coals, or by dropping a hot iron attached to a wire into the hole. After the fire is started brush is piled about the stump.

Dynamite on Wet Ground

Dynamite is frequently and successfully used in removing stumps. Small charges are found useful in splitting stumps which can then be burned more readily. Larger charges are used to break the stumps in pieces, so that they may be pulled easily, or sometimes to remove them from the ground entirely. The best time to blast stumps is when the ground is saturated with water, and the electrical method of firing blasts is recommended.

Where a large number of stumps are to be removed it may require the use of a stump puller. There are two general types; those that pull the stump from the side, such as a capstan type, and those that lift the stump vertically out of the ground by the use of a tripole. U. S. DEP. AGRI.

PROTECTING NEWLY PLACED CONCRETE

Many beginners in concrete work make the great mistake of not properly protecting their concrete work after having gone to a great deal of trouble and expense to have the best of materials and have it well mixed and laid.

Freshly placed concrete must be protected from sun and rain until it has well hardened. After it has its preliminary set, the chief thing to watch is to keep it from drying too quickly. This may be done by keeping it well dampened, either by frequent sprinkling with a fine spray, by covering entirely with water as in the case of a sidewalk, or by covering with rags, chaff, sawdust, sand, etc., and

It is usually not advisable for the amateur to undertake concrete work in cold weather; but it can be done if necessary, if the proper precautions are taken to warm the water and other materials, and to protect the finished work properly. This is sometimes done by covering with canvas and keeping some artificial heat going, or by covering lightly with sand after the preliminary setting has taken place, and then putting on a good coating of stable manure.

No paint or other protective coat should be used to protect the concrete from the weather, as none is needed. The application of such a coat to fresh concrete will cause serious injury and probably peeling off of the outer surfaces. If a tar or asphalt is applied to the interior of a silo or water tank to assist in waterproofing, it must not be done until the concrete has thoroughly hardened.

CARE OF CANARY

A bath is required three times a week.

The bird should be fed at a certain hour each morning.

The room should never be overheated.

Place the cage so that no draught of air can strike the bird.

When birds are moulting keep them warm and avoid all draughts night and day.

Give nothing to healthy birds but rape, hemp, canary seed, water, cuttle-fish, bone and gravel paper or sand on the floor of the cage.

If tempted to feed, no harm can be done by giving some summer rape seed, a little hard-boiled egg mixed with some fine biscuit crumbs or some crisp lettuce once or twice a week.

Two Cents a Word.

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President, Secretary,
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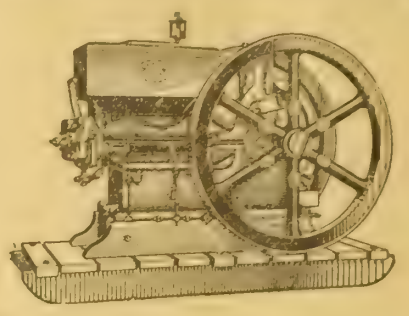

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Our spring litters of Berkshires are all sold. Are expecting several summer and fall litters. Parties wishing to purchase please get in touch with us.

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Farms Wanted !

The Department of Agriculture wishes to publish a more complete list of farms for sale during the coming winter. All persons having improved farms for sale are requested to communicate with

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Feeding the Human Machine

By W. A. Freehoff

With butter sixty cents a pound in many cities, with milk from twelve to sixteen cents a quart, and with cheese at least thirty-five cents a pound, it was but natural that the housewife used as little butter, cheese, and milk as possible. In the place of butter she began to use the various vegetable and animal oleomargarines, the milk order was cut as sharply as possible, and in some instances cancelled entirely, while cheese practically disappeared from her table.

This tendency was accelerated by the early attitude of the food administration. We were told to save fats, and, therefore, not to use butter for cooking, and we were allowed to believe that oleomargarine was the equivalent of butter for all purposes. The bakers were ordered not to use milk. Mr. Hoover did, however, urge the free use of dairy products for children, but did not explain why.

As the farmers themselves believed that there would be a serious shortage of milk and dairy products, the food administration cannot be altogether blamed for trying to conserve our dairy stocks. It so happened, however, that at this writing, June, there was a great surplus of milk in the country. Not only had the number of dairy cattle increased, but exports were reduced because of lack of ships, and consumption had been reduced because of the effort at economy, and the work of the food administration.

Whenever there is a surplus of any perishable food product, the market is held steady only with the greatest of difficutly. Consequently, the dairy industry is, today, facing the greatest crisis of its history. Feed is high, labor is high and scarce, and the market for milk is not of the best. Thousands of dairy farmers are seriously considering the advisability of going into other lines of farming where the market is steadier, and the chances of profit greater.

The natural inference on the part of the housewife is, why not let him do so? If there is too much milk produced, why wouldn't it be better for some farmers to produce more wheat and other crops, now greatly in demand, and of which there is an actual shortage? Would not everybody be benefited all around?

This sounds reasonable, and ordinarily would settle the difficulty. There happen to be two great reasons, however, why the dairy industry should not only be protected, but fostered. One has to do with the welfare of the people in the cities, and the country also, and the other has to do with the permanent welfare of American agriculture. First, we will touch briefly upon this latter phase.

It is well understood that no farmer can take wheat, or any other crop from his land, year after year, and manitain the productivity of the farm without adding fertilizers. A well-conducted system of dairy farming enables the farmer to maintain the fertility of his holdings, and for this reason the dairy industry should be maintained at a high level in this country. When the American farms begin to wear out, it will not be long before food stuffs of all kinds will rise sharply in price.

The second reason, and the most important one, is the fact that milk and its products supply an element absolutely essential to good health, and nothing else will supply that element. Were the dairy industry to die out in this country, there would be an immediate deterioration of the race.

This may appear a grossly exaggerated statement, but its truth has been recognized by scientists for a number of years. Possibly the greatest authority in the world on this question is Dr. E. V. McCollum of John Hopkins University. Dr. McCollum is at present engaged in an active campaign to arouse the nation to the seriousness of its dairy problem, both from the standpoint of the farmer and the consumer. He tells why milk and all dairy products are so absolutely essential in our daily diet, and he also is trying to arouse the farmers to a realization of their task in preserving this great industry.

Dr. McCollum points out that there are certain diseases peculiar to a faulty diet. Among these are beri beri, scurvy, rickets, pellagra, and even tuberculosis. We in America have not had to cope with many of these diseases, for this has been a land of plenty, with great stores of cereals, meats, and dairy products available, at moderate prices. Accordingly, our diet has been so liberal and so varied that we are well nourish, even if by accident rather than design. In the Orient, however, where meats and dairy products are few, and the people are restricted to a diet of cereals and leaves, not only are the diseases just mentioned a dreadful scourge, but the whole vitality and stamina of the various races have suffered.

We are just beginning to come up against this problem in our own country. In 10 years, 165,000 cases of pellagra have developed. In some of the tenement districts of the large cities, rickets, with all its accompaniment of deformed bones, has overtaken practically 100 percent of the children of these sections. Tuberculosis of a dietery origin is scourging certain cities, notably the black belt of Baltimore. We are coming face to face with the very problem, only in a more minute degree, that has afflicted the Orient for centuries.

Naturally, our congested centers of population are the first to suffer. The people in our slums are wretchedly poor; they cannot afford to buy a liberal variety of foodstuffs; and they have not the necessary culinary knowledge to prepare properly what they do buy. But as this war is progressing, there seems to be an increasing tendency, on the patr of the middle classes, to economize at the table, not wisely, but too well.

So long as this economizing takes the form of eating less, the health of the nation will improve, for we have undoubtedly been too liberally fed for our own good, especially with meats. We have been wasteful, and thrown large portions into the garbage can.

But a very distinct effort has been made in every large city to keep down the price of milk, butter, and cheese. Very little murmuring was done when other items of food advanced in price, but as soon as milk went beyond 10 cents a quart, the daily press began a clamor, which was taken up by housewives leagues and other agencies. The farmer was pilloried as a robber, who wished to take an unfair advantage of the war to boost his profits.

Now, all men familiar with dairy farming know that it takes a heavier investment, longer working hours, presents a graver labor problem, and is operated at a lower margin of profit than cash-crop farming. The only reason farmers have been able to stay in the dairy business, at all, is due to the fact that they were able to raise hay, corn, and other feed at less than market price. But the cost of producing this feed has gone up more rapidly than the price of milk, and the dairy farmer of this country is becoming very much discouraged. When a misinformed public accuses him of being a profiteer, he is so disgusted that he doesn't care whether he stays in the business or not.

But aside from the effect this unintelligent treatment of the milk situation has upon the dairy industry, it has an equally serious effect upon the health of the cities. It has been conclusively proved by Dr. McCollum and his colleagues, that there are two elements which must be present in the food we eat in order that we may be correctly nourished. The presence of these elements cannot be determined by chemical analysis, for animals have been fed on rations that were chemically balanced, and were exactly alike, as far as analysis was concerned, and yet slowly starved to death.

The story of how these unknown elements were discovered is a long one, and out of place in this article. But by a series of feeding experiments, extending over a period of many years, it was discovered that livestock of all kinds, and laboratory animals, like guinea pigs and the domestic white rat, would do well on certain feeds, and die on others that analyzed alike. By a series of careful eliminations, it was finally determined that there were, at least, two elements that were essential to growth and normal health.

Dr. McCollum prefers to give these elements no name at all, until more is known aout them. He does this because the names in chemistry are always given in such a manner that the name tells something about the property of the object named, and not enough is known about the physical property of vitamines to give them an accurate name. Therefore Dr. McCollum calls them merely fat-soluble A and water-soluble B.

Fat-soluble A is so called because it is found almost exclusively in whole milk, cheese, butter, and cream, and to a lesser extent in the yolk of eggs, and in liver fat and in kidney fat. About the only way we get fat-soluble A in our diet is by the use of milk and dairy products, as it is not found in any vegetable fat, with one or two rare exceptions. The absence of this unknown substance will not make so much difference with the adult, but it is absolutely essential for the well being of the growing child. Thus those parents who, by reasons of economy, or because they have allowed themselves to boycott milk and butter, reduce the amount of milk given to their children, and replace butter with one of the many brands of vegetable or animal oleomargarines, are in grave danger of doing their children irreparable physical harm. Rickets, sore eyes, impaired eye sight, and stunted growth are only a few of the possible effects.

Even skim milk will not supply this fat-soluble A, as has been proved by the experience of Denmark. Because of the high price of butter fat, many of the dairymen of Denmark were tempted to substitute skim milk for whole milk. Very soon the children receiving this skim milk had serious eye trouble: the eyelids became swollen, there was more or less hemorrhagg around the eyes, and blindness gradually set in. As soon as these children were put on a whole milk diet, this eye trouble quickly disappeared.

Originally, of course, this fat-soluble A is found in the leaves of plants. It is not practical, however, for a human being to eat enough leaves and similar "roughage," because his stomach and digestive tract is not fitted to handle such a bulky diet. The cow, however, which lives very largely upon the leaves of plants, has a digestive system capable of assimilating vast quantities of rough feeds. Now, as this fat-soluble A has the peculiar property of dissolving in butter fat, it becomes at once apparent how important a part the dairy industry plays in keeping up the health of the nation.

In other words, milk and its by-products, is the first great "protective" food we have. The word protective is used to indicate that the deficiencies found in lean meat, cereals, tubers, and roots, all articles of universal diet, are connected. Milk is the greatest of all protective foods.

The second great class of protective foods is the leaves of plants, and in them is found water-soluble B. This class is of vital importance, but to a lesser degree than fat-soluble A. The human system obtains its water-solu-

(Continued on page 188)

New Brunswick's New Secretary for Agriculture

In the last issue of the Maritime Farmer, we chronicled the resignation of Mr. W. R. Reek, Secretary of Agriculture for the province of New Brunswick. In this issue we are pleased to introduce his successor to our readers.

The Minister of Agriculture, Hon. J. F. Tweeddale, has appointed E. P. Bradt, B.S.A., of Morrisburg, Ontario, to conduct the policies of his department.

Mr. Bradt comes to the Department with a reputation for achievement and we bespeak for him the hearty co-operation of the farmers of the province. To succeed in rounding out the policies of the Department of Agriculture in all its important branches co-operation between the farmers and the Department maintained for their benefit is essential. Mr. Tweeddale has been untiring in his efforts since he took over the important portfolio of Agriculture. Good results have been accomplished and in Mr. Bradt we believe he has secured the services of one, who, if his past reputation as a worker is any criterion, will materially help to carry on the work so well begun.

Mr. Bradt comes to the province of New Brunswick at a time when the eyes of the outside world are turned to note the rapid progress that is being made and he will have every opportunity to continue to make good.

Mr. Bradt was born on a farm near Cayuga, Ontario, in 1885. After completing the courses of education in the public and High Schools of that place in 1903, he engaged in farming until he entered the Ontario Agricultural College, Guelph in 1908, from which institution he graduated and also from Toronto with the degree of B. S. A. in 1912.

Left—E. P. Bradt, New Brunswick's newly appointed Secretary for Agriculture. The other young men are his 1917 champion stock judging team.

During the years 1906-08 he had charge of the home farm. While an undergraduate he was for one year Assistant Agricultural Representative for Lanark County.

He received his appointment as Agricultural Representative, under the Ontario Department of Agriculture, for Dundas County in June, 1912, which position he has held up to the time of his acceptance of the call to New Brunswick. He has at the same time held the position of Secretary to the Dundas Board of Agriculture and Secretary-manager of the St. Lawrence Valley Fruit Grower's Association.

A summary of the work accomplished in Dundas County during Mr. Bradt's term of office besides the regular Agricultural Representative work as gleaned from reports of the Ontario Department of Agriculture, include:—

The organization of ten Farmers' Co-operative Associations.

The organization of the Dundas-Greenville Ayrshire Club and the Dundas District Holstein Club.

The organization of four Junior Farmers Improvement Associations.

The organization of one hundred schools with 1400 children in Rural School Fair and Home Garden movements.

The organization of three Horticultural Societies and the organization of six egg circles.

In the photo which appears in this issue Mr. Bradt is shown with the Dundas County trio of young men who carried off the coveted championship for 1917 as stock judging team in Ontario.

Mr. Bradt instructed these young men and their success is to a great extent due to his thorough coaching. Mr. Bradt is a young man's man, and as such will find ample room for development in the province with which he has cast his lot.

Milk, Its Composition, Care and Food Value

By Frank Herns, Chief Dairy Instructor for Western Ontario, at the Recent Women's Institute Convention, Fredericton

Madam President:—

It is indeed a pleasure for me to come to New Brunswick. I wish to thank Miss McCain and Prof. Reek for their very kind invitation to address you and to give me the opportunity of wishing the Women's Institute in this Province every success.

When I decided to accept this invitation I fully realized from past experience that there is no more critical audience before which a "mere man" can appear than one made up of the members of the same Women's Institute. You have had so many opportunities of listening to prominent speakers of both sexes that I am sure you will give me, "A practical man" your sympathy in my humble efforts to bring before you a few facts about "milk". I shall endeavor to eliminate so far as possible the use of scientific terms and to avoid complicated references. The study of milk carries us far into realms of science, especially chemistry and bacteriology and it would be impossible contract to deal fully with the milk question in one talk. It would require many hours of labor to cover this subject or to give a faint idea of the tremendous amount of research work that has been done, the scientific knowledge that has been acquired by the hundreds of men and women who have devoted most of their lives to prying into the hidden secrets of the apparently common fluid which we call milk.

Even after years of research by some of the best scientific minds of the world, there are yet a great many things not yet known about milk and itis only within the past fifteen or twenty years that many of the real facts concerning the importance of milk and milk products as a food have been learned. Truly it has been said that the Dairy cow is the "Foster Mother of the race" and a "National asset."

Milk

If milk producers and consumers have some knowledge of the composition of milk and of the chief causes for the changes which milk undergoes after it is drawn from the cow, the producers should be in a better position to more intelligently produce pure milk for the factory or for household purposes and the consumers should know better how to take proper care of the milk after it is delivered to the home.

Composition

Milk varies in composition and is a very complex material. It is composed of a number of solid substances dissolved or suspended in water and has a specific gravity (water 1) of 1.029 to 1.034.

100 lbs. of normal milk contains about 87 pounds of water. If this water is evaporated the remainder will consist of about 13 lbs. of total solids which are chiefly made up of:—

1st. Fat—about 3 to 3.6 lbs. contained in 100 lbs. of milk but varies considerably. Chemical research has shown that milk fat is made up of several different fats, chief of which are, Palmitin and Stearin (hard fats) Olein and Butyrin (soft fats). In the spring time when cows are fed on soft foods and it is early in the period of lactation, there is a greater proportion of the soft fats, such as Olein, present in the milk fat and therefore cream is churned more easily and quickly than in the fall and winter when the cows are getting a large quantity of hard foods and are in a later period of lactation which causes the milk fat to contain a greater proportion o fthe hard fats, such as Stearin. The butter made from the milk of some cows is hard and firm while from other cows, even upon the same food, it is naturally soft no doubt due to the different proportion in which the various fats are present. It is the decomposition of the fat Butyrin, which although present in a small quantity, causes butter to turn rancid.

Fat is present in milk in the form of little tiny "dots" or globules, several millions in a drop of milk. The globules of fat are so small they cannot be seen with the naked eye, and when the milk stands for some time the fat rises in the form of cream, the fat makes up the lightest portion of the milk and after the milk is at rest the natural law of gravity forces it to the top. The same result when milk is put through a cream separator. The fat being the lighter portion of the milk, is forced to the centre and is discharged through the cream screw outlet and the skim milk through the skim milk tube. Cream then, consists of many millions of tiny, little fat globules in drops in a portion of the milk Serum or skimmed milk.

Churning is simply a matter of concussion. When the cream is sufficient

(Continued on page 190)

Legislation Affecting Dairy Farmers Planned for Near Future

Subjects of far-reaching importance o the dairymen of Canada, which may e followed by rather drastic legislaion were discussed at the Dominion Dairy Conference, held in Ottawa reently, which was attended by repreentatives from all parts of Canada f the various associations affected. The conference was called by Hon. . A. Crerar, Minister of Agriculture, ut owing to his absence the delegates ere welcomed by Dr. J. H. Grisdale, cting Deputy Minister of Agriculture, ho alluded to the part dairying must lay in assisting Canada to wipe off er national debt.

The work of the conference will be ound embodied in a series of resoluions which appear in another column nd ended in the formation of a Naional Dairy Conference, composed of wo representatives from each provnce to be a producer of milk, with ower to add to their numbers as fol-ows:

Four representatives of the cheese ndustry, three from the east and one rom the west.

Three representatives of the butter ndustry, two from the east and one rom the west.

Three representatives of the milk istributors, two from the east and ne from the west.

Three representatives of the cream nd milk producers for city trade, two rom the east and one from the west.

Two representatives of the ice ream manufacturers, one from the ast and one from the west.

One representative of the condenaries.

And that these thirty-four repreentatives elect from among themelves a president and four members f the executive to form an eastern xecutive and a vice-president and hree members of the executive to orm a western executive.

The eastern executive will deal with natters which are of interest to the astern district only, and the western xecutive will deal with matters which oncern only the western district. When matters of mutual interest are o be considered both the eastern exutive and the western excutive will eet at the same time and communiate by wire.

The following were named by the elegates to the Dominion Dairy Conerence as representative of the reective provinces on the National airy Council: British Columbia, E. . Clark, S. H. Shannon; Alberta, E. . Love, P. Pallesen; Saskatchewan, . W. Anderson, A. H .Salmon; Manitoba, W. J. Cummings, Alex. McKay; uebec, Jas. Winter, J. B. Vincent; ew Brunswick, P. Simmons, W. H. uggard; Nova Scotia, H. Faulconer, W. Murray; Prince Edward Island, A. Jones, J. T. Profitt.

Representatives of the various branes of the dairy industry were apinted as follows: Cheese, J. P. Cox, ue.; T. Boyes, Ont.; W. Olmstead, lt.; W. W. Prevey, Alberta. Butter, Pare, Que.; W. G. Medd, Ont.; W. Wilson, Sask. Milk distributors, J. Joubert, Que.; J. Bingham, Ont.; M. Carruthers, Manitoba. Milk and eam producers, A. P. Hillhouse, ue.; R. G. Leget,t Ont.; J. A. Berry. itish Columbia. Ice cream, J. W. rlyle, Alberta; W. J. Foaster, Ont. ndenseries' representatives yet to named.

The council elected the following ofers: President, E. H. Stonehouse, eston, Ont.; Vice-President, A. Mcy, Winnipeg. Eastern executive: E. Stonehouse, F. Boyes, J. Pare, J. ham, J. Walker Jones. Western ecutive, A. McKay, P. Pallesen, J. Berry, O. W. Anderson.

The appointment of a secretary was t to the executive, Mr. Geo. A. Putn acting pro tem.

The discussion as to the proper thod of paying for milk which was oned by a resolution moved by W. F. Stephen, Huntingdon, Que., secretary Canadian Ayrshire Breeders' Association, was largely a one-sided affair, the delegates freely expressing opinion favorable to the producer being paid for milk for all purposes of manufacture and human consumption on the basis of its butter fat content. Mr. T. A. Thomson, secretary Eastern Ontario Dairymen's Association, was the only delegate who opposed the resolu tion. He did not bring forward an amendment, but stated that though he was in favor of the principle expressed in the resolution, he failed to see how any method could be devised to attain the end sought. The resolution was seconded by B. A. Bull, secretary Jersey Cattle Breeders' Association, and was carried by acclamation.

In view of the great increasing demand for dairy products and the fact that the industry is badly crippled for want of suitable labor it was moved by W. F. Stephen and seconded by Mr. Jas. Winter, Armstown, Que., that the conference memoralize the Government to release at the earliest date possible all soldiers in any way connected with the dairy industry. It was conceded that the question of labor was desperate in the extreme; it was a condition that dairymen had been up against in pre-war days and war conditions had made it exceedingly more acute. The discussion brought out the question of cost of milk production, it being as necessary to arrive at some basis as regards cost and a remunerative selling price as it is in the case of wheat, which has been given the attention of the Government. The enforcing of better sanitation, better buildings, etc., more expensive items in the programme of house cleaning considered necessary on the average dairy farm, and the lack of available labor was a large factor in delaying such work, were some of the arguments advanced by the delegates.

A resolution relative to the action of bacteria under modern conditions of creamery butter-making was moved by Prof. Dean, O.A.C., Guelph. The resolution, which was carried, recommended the pasteurizing of cream at a minimum temperature of 150 degrees, but the finding of the meeting was that this was too low a temperature. It was perhaps difficult, it was argued, to meet the requirements of local and short time trade but for export and long time keeping it was insufficient. For the local trade, usually immediate consumption, such a high temperature is not necessary, but as it is difficult to know how long the local trade some times keeps the butter on hand or in what market either local or export, it ultimately finds its way, the higher temperature is essential. The final test in asking the butter itself, which was the safe temperature to adopt in pasteurizing is got by the Storch test, which was fully explained in a demonstration given by Mr. C. Marker, Dairy Commissioner, Calgary. It is used by the trade in order to test butter as to its keeping qualities.

Among the most interesting and practical topics was the "Compulsory Pasteurization of Dairy By Products," introduced by Dr. Torrance, Veterinary Director General, Ottawa, relative to the alarming sperad of tuberculosis in hogs. The three methods by which tuberculosis in pigs is spread is first by drinking the milk of tubercular cows, secondly by pigs getting unpasteurized whey or milk from a creamery and third by following cattle in a yard. It is not generally understood that the manure heap will carry tuberculosis to pigs from cattle so affected. He condemned the practice of giving pigs the chance to eat the carcasses of cattle that died from whatever cause. It was also largely spread through garbage feeding which practice also gave rise to hog cholera. Some municipalities enforce the cooking of all garbage fed to swine. But the main source was the milk from the tubercular cow. In the abattoir killed pigs, to the number of 2,129,682, it was found that 19 per cent. were diseased at an annual loss of $255,561, and counting those killed in uninspected slaughtering such as at farms and local slaughtering places, the loss would be double that figure or an estimated loss of half a million dollars.

From statistics of the pig industry in Ontario the hog tuberculosis runs from 4 to 6 per cent. and tuberculosis is most rampant in the counties that are given up to dairying.

The best method in freeing the country of tuberculosis was first to get rid of it in cattle, but as this must necessarily be a huge as well as a slow undertaking, the next best way was to pasteurize all by products, on farm and at creamery given or sold as pig feed.

"Market investigations" was a subject of exceptional interest, and the resolution moved by K. G. MacKay, and seconded by E. T. Love, recommended that the conference of Dominion dairymen appoint a commission to investigate the requirement of the export market. It was recognized that the only market today worth any thought was that of the United Kingdom, and no matter what the tastes, or prejudices, or practices in handling or making butter in Canada the tastes of the export market must be realized and consistently catered to. From authentic reports it is clearly gathered that there is not enough imported cheese or butter in Britain to hitherto meet the demand that country. All qualities and varieties of butter are to be found on the Canadian market, some heavily salted, as is done in the United States; some less so, and many are of a nondescript character. The variety in demand in the United Kingdom is of a sweet, creamy flavor, with very little salt, and this condition will have to be studied by butter makers before the large surplus expected in Canada can be freely sold in this export market. The resolution was carried unanimously, and special emphasis was placed upon the advisability of having no delay in the investigations and issuing report.

The resolution re the "Improvement of Dairy Herds" brought out the basic facts underlying the economic production of milk. It was generally admitted, in the discussion, that the most important factor in building up a dairy herd was by the medium of a properly bred prepotent sire. Two regrettable features admitted to be followed by large numbers of dairy farmers were the using of pure bred sires without obtaining any reliable information regarding the milk producing qualities of the dams of the sire; and that too many dairymen apparently did not realize the importance of the value of knowing something about the milk producing qualities of the sire's ancestors. It was also pointed out, as one of the greatest needs at the present time and the greatest problem confronting the dairymen of Canada today is how to eliminate the unprofit-

(Continued on page 187)

Resolutions Adopted at Dominion Dairy Conference

At the Dominion Dairy Conference, held in Ottawa recently, the following resolutions were adopted:

"Resolved, that this conference place itself on record as favorable to the producers being paid for milk for all purposes of manufacture and for human consumption on the basis of its butter fat content, and that the various Provincial Governments be requested to enact such legislation at as early a date as will bring such payment of milk into effect."

"That the by-products of cheese factories and creameries should be rendered harmless by pasteurization or sterilization before removal from such factories for feeding purposes, and that the Dominion Government be requested to make it compulsory to pasteurize or sterilize all dairy by-products."

"That, in taking milk samples, the samples to be tested be divided into three equal portions, each properly sealed, one to be handed to the vendor, one to be tested by the municipality and the third to be held for testing by an independent authority, should occasion require it."

"That the Government be memoralized to release at the earliest possible moment all soldiers in any way connected with the dairy industry, which includes producers, cheese and butter makers, milk distributors and others."

"That the order permitting the manufacture and sale in Canada of oleomargarine be rescinded, and its manufacture and sale in Canada be declared illegal after six months from the date of the declaration of peace; further, that the National Dairy Council be consulted before any legislation be enacted affecting the dairy industry."

"That the Dominion Government be asked to appoint a commission composed of butter experts to investigate the requirements of the various export markets, and report their findings and recommendations at the earliest possible date."

"That the system known as pasteurization of milk or cream in the manufacture of all butter made in Canada be recommended and adopted at once by all creameries which are not already using this method, the standard temperature recommnded to be 170 degrees F., holding for twenty to thirty minutes, or 176 degrees F., by the flash method."

"That owing to lack of uniformity in the scoring of butter and cheese throughout Canada, that a uniform score card and certificate with a new scale of points for scoring both cheese and butter be used."

"That to support the National Dairy Council each delegate pledge his association for a grant of $100; that $10 of this amount be paid at once and the balance on or before February 1st."

"That the National Dairy Council make a request to the Dominion Government for a grant of $5,000 to assist in the work of organization, and that this amount be available within sixty days."

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DATES OF ISSUE.

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DECEMBER 17, 1918.

NEIGHBORS GETTING TOGETHER

This in essence is the soul of the movement for community betterment in the country and from it radiates larger practical benefits to the individual, better farm living conditions, and a better manhood and womanhood. When conceived on the basis of an "uplift", efforts to accomplish these ends will never succeed; but in Massachusetts they have not sought to organize rural communities by a prearranged plan, but they have gone out to learn from the people themselves and then to aid them in their self improvement by their own community. After several years of experience in being taught, the Massachusetts College of Agriculture deems the time right for publishing the results of its work along these lines and offering a plan of operation. This it has done in a bulletin entitled, "Mobilizing the Rural Community", by E. L. Morgan.

"It ought to be stated just as strongly as possible," says President Butterfield in his introduction to this bulletin, "that this work is not in the nature of an 'up-lift'. It is not even 'social' in the narrower sense. It is somply a method of organization by which we seek to assist the town to bring into co-operation all the agencies, individuals, and institutions in the community, in order to get the full measure of capacity of the town at work developing the community, industrially, socially, and in every other way. The work has fully as much to do with the so-called 'practical' or business phases of agricultural development as it has with any other. Indeed, its principal achievements are in the practical field. We believed from the beginning that the local community should be built up to its fullest possibilities; that it should study itself, make its own plans for its highest development, gain the co-operation of all its people to carry out this plan. This sort of organized effort we believe is the key to rural progress everywhere."

With this sort of an introduction one can read on with assurance that he will not meet with the maudlin sentimentalist who would go out into the poor, ignorant country to "uplift" it out of its sloth and degradation. A movement conceived and promoted as an unlift, even when the idea itself may have value, is at once condemned as futile by every person well informed concerning farmers and agriculture. The farmer is rightfully suspicious of the self-appointed, smug custodian of his welfare, and his independence holds in righteous contempt this kind of mendicant charity.

The bulletin fulfills its introduction, and its scope is further explained in the further quotation from President Butterfield's introduction as follows:

"The 'community idea' is not a new conception. This bulletin is simply the story of the facts and an outline of the principles and advice that have grown out of the experience of nine years of study and effort in applying the idea to the rural towns of the state. This effort has been, however, not merely an experiment. It has been also a demonstration, because it has been a real success. We believe that not only is the main idea sound, but that the methods suggested are sound. Of course, these must be adapted to various communities. No two communities can work exactly in the same way."

What we particularly enjoy in this bulletin is that the author keeps his feet on the ground, and does not soar off into the misty heights and clouds beyond he ken of his reader. The plan has succeeded in Massachusetts, which is its best recommendation.

BRED BY EXHIBITOR

One of our most prominent Shorthorn Breeders who bred, showed and sold good stock, used to head his advertisement in the columns of The Maritime Farmer, "We breed our Winners and Sell them too". His motto may well be emulated.

The Breeder's Gazette has a splendid editorial on "Bred by Exhibitor", and we fully endorse it in the main. Its logic is sound and unanswerable. It is all inclusive and most comprehensive. The idea to offer 25 per cent extra for every animal bred by the exhibitor is unique and excellent. The Gazette might have mentioned one element in the show business that is more or less of a nuisance and sometimes a real hindrance to local progress. There always has been at least a moral protest against the business of the "dealer in live stock exhibits". (We do not mean the legitimate importer who buys to exhibit, breed or sell, or do all three, as each is honorable.) We mean the "professional show man" who picks up from the importer or buys at large and goes the rounds with half a dozen different breeds. This unwelcome guest not only produces nothing but really stands in the way of the hard-working, ambitious breeder and exhibitor. Of course, there is a sort of legitimate selfishness in the whole exhibition business. There must be competition, however, to draw out the best in breeding and exhibition of all animals, and we must put up with some unhappy features of the business.

We are republishing the article in question from the columns of the Gazette, and recommend it to the consideration of all our Fair boards.

BUY A BULL

No dairy farmer should hesitate now to purchase a pure-bred dairy bull. Improved blood has always been a splendid investment, but the world's shortage of dairy products and the increasing demand for good dairy cows makes the investment more inviting than ever. Hoover informs us there is a world shortage of fats and milk. The shortage of fats amounts to three billion pounds and it would require 1,500,000 cows, with a production of 200 lbs. of fat per cow a year, to produce that amount of fat.

improved cows, cows capable of producing 250 to 300 lbs. of fat in a year, will be in larger demand in the future than they ever have been in the past. Cow testing associations are increasing rapidly and these organizations are revealing to the farmer the fallacy of keeping poor cows. The farmer who is raising high grade cows will find a ready market for them and at good prices. Good grades now are selling for $150 to $225 apiece. Further, the grade herd is returning a larger profit at the pail. A farmer who has not purchased a pure-bred bull to head his herd is losing money and will never be in position to take advantage of a grade cow market. Nondescript cows will not sell within $50 to $100 of as much as the grade.

For an absolute sure investment and a large rate of interest, nothing can beat a pure-bred dairy bull.

IDLE MACHINERY IS EXPENSIVE

With the labor problem the most acute in the history of farming, the farmer must depend upon machinery to supplement the labor he will find unavailable. The Government is taking steps to insure that there will be no delay in delivering the thousands of cars of new implements needed during the war period and thereafter. In this connection here are a few pointers which the farmer woud do well to keep in mind.

"Machines make money for you when they are in use; they cost you money when they stand idle.

"A machine makes the greatest possible profit for its owner when it is used continuously in profitable work till it is worn out. Then it is really worn out—it does not rot or rust out.

"The average farm implement is only about half worn out by use alone. The rest of the wear is due to rust and decay.

"Acres count in the life of a machine—not years."

HUB OF THE FARM

The barn and outbuildings are the farm factories—the hub of the farm around which all its activities centre. They should be centrally located, and easily accessible from all part sof the farm, and so arranged with relation to one another and to the dwelling that the oft-repeated chore can be done with the fewest steps and the least time. Good, natural drainage for the building site is, of course, highly desirable. If that cannot be had, tile must be resorted to, though they do not always give the desired result because the ground in the barnyard becomes puddled by the tramping of the stock and the water does not really drain off.

ATTENTION ST. JOHN HOUSEWIVES' LEAGUE

On another page of this issue will be found an article entitled "Feeding the Human Machine", which we are republishing from the columns of one or our Amrican Exchanges.

The article in question deals with a subject that is of vital importance to the consuming public in our towns and cities. It is passed along with the hope that it may be read by the members of the Housewives' League, St. John, who have developed such antagonism to the milk producers, who supply the lactic fluid to the city of St. John in general, and particularly to those of the latter class who are fortunate enough to be residents of the good old County of Kings—the Denmark of New Brunswick.

* * *

Stumps occupy valuable land; foster the growth of weeds, since in order to keep the land in their vicinity clean much hard labor is necessary; mar the appearance of otherwise smooth fields, and hence reduce the selling price of a farm; furnish shelter for harmful insects and animals; and prevent the efficient use of modern machinery.

"BRED BY EXHIBITOR"

Inseparably joined with the necessity which confronts fair managers of greater liberality on the financial side of their prize lists is the question of extending larger recognition to the breeders of winning animals. Closed classes defeat the prime objective of an exhibit of seed stock breeding animals. Any artificial barrier which prevents in any way the presentation of animals of the highest excellence, of whatever origin of birth or fashion of conditioning, will inevitably lower the standard of arenas in which the essential object is to demonstrate the highest type that genius can breed or money can buy. It has been many a year since the state fair closed its classes to the outside world, and the sadly erroneous idea is not apt to have the breath of life breathed into it again. Additional rings of state-limited specials are yet occasionally found in prizelists, given under the erroneous impression that breeders can lift themselves over the fence by their own boot-straps, but the general intelligence of showyard management has come to apprehend the fact that the prime object of a stock show is educational, and not the distribution of prize money among breeders of any one geographical or political division. These shows reach their highest degree of efficiency only as they set standards that approximate the supreme ideals of breeders. Only by measurement with such standards can a breeder accurately estimate his own animals and elevate the plane of his production. Merely to beat his neighbor in a restricted county or state competition tends to give a breeder an entirely false idea of the merit of his own animals and hence retards his proress toward success.

For this reason the supreme contributions from breeding herds on any continent are welcomed at our shows, and the most skillful conditioning meets with its reward. Fitting can be and is sometimes carried to an extreme that is reactionary, and this condition is found alike in cattle, both beef and dairy, and in sheep, swine and horses. The fitting of show stock is not the job of a novice, and rare talent is required to tell just when the finishing touch has been applied. When it has been bestowed by master hand on animals home-bred or imported from the foreign nurseries of breeding stocks, our shows reach the maximum of their usefulness.

Men of means have from time out of mind been drawn to the breeding of pedigree stock, and have made liberal expenditures for the satisfaction of demonstrating in the showring the superiority of their stock. Against them the ordinary breeder has found it difficult to show, as unlimited means have picked and chosen here and there the tops of herds on both sides of the water, and exhibition animals of rare strength have in this way been assembled. But every one of these men who lavishly invest in superior show stocks and who find full satisfaction in the prizewinners of their animals, is yet more profoundly pleased when animals of his own breeding finally come on to win. Rarely do they fail to sense in full the joy of constructive creation. Men of this stamp have been foremost in holding aloft the highest standards in our showyards and thus encouraging others to shoot at the mark. And others have shot successfully, as showyard history is full of the triumphs of breeders who have met successfully the importations and purchases of rich men with high ambition to win.

It seems wholly reasonable that the genius of the breeder who thus rises to notable heights in his operations should be rewarded. It is a common saying that any one with money can buy show animals, but that few can breed them. It is not an accurate statement, as it requires seasoned judgment as well as an open purse to select winners in the fierce competition of these latter days. But it is undeniably harder to breed a champion than to buy one, and the reward of production should bear some relation to the genius and effort involved. The tendency is marked to offer specials in recognition of the breeder, but danger lies in that direction. Our classifications are already about as complete as is practicable, and further additions complicate the situation. Usually the young herd competition is limited to animals bred by the exhibitor, and is generally the only restricted class. It is readily possible to offer adequate recognition of the genius of the breeder without increasing the number of classes or special competitions. It may easily be done by adding a certain percentage of the regular prizemoney in case the winning animal has been bred by its exhibitor. In view of the hot competition which breeders have faced from imported and home-bred animals, selected with the special view to exhibition, it would be quite in keeping with the merits of the case if 25 percent were added to the regular cash prize for every animal that is bred by the exhibitor. The glory of winning with an animal bred by the exhibitor is well enough, and is not without its tangible returns, but in view of the almost unlimited expenditures made in pursuit of prizewinners, a substantial and superior financial reward should be reaped by the breeder who sends a winner into the arena. Such a plan would not in any way interfere with the purchase of show stock by those who select the short-cut to arena renown. It would not tend to lower the standard of our shows, but on the contrary would hold out substantial encouragement to the breeder to invest in high-quality stock with a view to winning the most coveted of all prizes, "bred by exhibitor."—Breeder's Gazette.

FERTILIZING THE ORCHARD

There has been considerable discussion as to the plant food requirements of fruit trees, and experiments would indicate a wide variation in the results obtained from the application of various commercial fertilizers. The amount of plant food actually required by an orchard must, because of the natural variation in soils, necessarily vary. Former soil treatment is also a big factor and it is exceedingly difficult in reading results to determine just how far previous management and natural favorable soil condrtions have influenced the results.

The check plots should enable one to determine the effect of the fertilizers applied fairly well, but the tendency is to leave too few check plots, for as all soils show much variation within even limited areas, local environment may happen to be favorable to the check, and the check plots should b echecked up by other check plots. The wide variation of individual trees in an orchard is well illustrated if one keeps a record of the trees in an orchard for a few years, some trees producing annually abundantly and others failing to give reasonable crops, all managed in the same way.

This variation must be due to some environmental condition and may be the result of some treatment many years previous. There may have been many contributing factors, and it would be impossible to trace out and find the real cause. It is wise, therefore, to use larger areas for fertilizer tests and conduct a smaller number of experiments. This represents more expense and involves much more work but would lead to more definite results.

All experiments would seem to indicate that of all plant food constituents required by the tree, nitrogen is of first importance. A lack of nitrogen leads to unthrifty growth and lessens the capacity of the tree to produce profitable crops. An unthrifty growth may force the tree to fruifulness, but unless the tree can at the same time maintain its vegative development, the crop produced may each year become of lower grade and less profitable. This is well illustrated by a girdled tree which is an extreme case as all vegtative growth has ceased and fruit only is produced. The checking of the vegetative growth in a tree may, while tending to bring about fruitfulness, lessen ultimate production. On the other hand an excessive use of nitrogen may result in too much vegattive growth which may tend to lessened fruitfulness, or delay ripening of the wood running the risk of winted injury. The normal vegetative growth of apple trees is made during May, June and July, and all fertilization and cultivation should be given with the idea of encouraging vegetative growth at this time. Unfavorable conditions later may not seriously affect the tree, in fact may tend toward a better ripening of the wood and the development of fruit buds, as anything that tends to check vegattive vigor naturally forces the tree toward reproduction.

In orchard fertilization, therefore, the aim should be to start off the tree with a strong, active growth, and to do this a plentiful supply of nitrogen early in the season is required. Results would show that all nitrogenous fertilizers should be applied so that the tree can get it at the start of growth and during the blossoming period, for at that time the heaviest drain is being made on the vitality of the tree, and the available soil nitrogen supply is at its lowest. It can therefore be stated with assurance that quickly available nitrogenous fertilizers such as nitrate of soda should be applied during the period from the 15th to the last of May. It would seem also that no form of nitrogen can take the place of nitrate of soda giving an annual application at the rate of 150 pounds per acre of area actually occupied by the tree. One half ounce per square yard is approximately 150 pounds per acre. This may be increased to 200 pounds if the trees are greatly lacking in vegetatiive vigor. Nitrogen in nitrate of soda is available when it comes into contact with soil waters, whereas the nitrogen from decayed vegetable matter in the soil or stable manures may not be available nutil broken down by decay which is slow in the spring of the year. Soil nitrates particularly in leachy soils, or soils deficient in humus are likely to be pretty well washed out of the land and the trees suffer from not having this necessary element, hence the importance of applying a readily available nitrogeous fertilizer. Stable manure should be applied early and worked into the soil and annual light applications will be found more beneficial than periodical heavy applications. The orchard as a whole should produce reasonably uniform crops from year to year and for that reason uniform annual application should be given. One ton of well preserved stable manure contains about 10 lbs. of nitrogen, and the average manure would contain from 5 to 8 lbs. Three tons of manure would therefore give appriximately the same amount of nitrogen as 150 pounds of nitrate of soda, but as above stated the nitrogen in the stable manure would not be available until complete decay had taken place, and annual application of six tons stable manure, approximately three pounds per square yard, applied just as early as possible and worked into the soil will give the necessary nitrogen and furnish the trees with all the plant food they will require for the season.

Menton has been made of the possible loss of nitrogen from leaching as a result of heavy fall and spring rains. This brings up to the importance of using cover crops to trap any excessive plant food not taken up by the tree, and it also should interest us because by using a leguminous cover crop much nitrogen may be trapped, and the expense of furnishing so much nitrogenous fertilizers are done away with. Vetch or crimson clover makes an excellent cover crop. Red clover would be the best only that it cannot make the growth in the average season necessary to enable it to enrich the soil much with nitrogen unless planted about the middle of June. If we could do our cultivation early in May and again in June and follow at once with a cover crop of red clover, it is possible that we would get the growth desired. The tendency, however, is to delay the cover crop seeding, giving an opportunity to make a late June cultivation, which may in some seasons be necessary, but on the whole earlier seeding of cover crops, if the early cultivation has been what it should, will be more profitable in the long run.

Phosphorus and potash are two essential elements, and, even if stable manure is used it is advisable to supplement it with a fertilizer carrying phosphorus. Acid phosphate is the principal phosphatic fertilizer, and has the advantage over the other forms in that the phosphorus is more readily available. Annual applications of 500 pounds per acre will be found satisfactory and this may be applied broadcast the last of May. Slag is a good orchard fertilizer. The phosphorus, however, is not so quickly available and unlike the acid phosphate may not give the necessary plant food early. The usual practice is to apply this early at the rate of 600 to 800 pounds per acre. Slag carries considerable free lime, often amounting to 40 per cent., and on some soils this is a very important factor, for they are so deficient in lime that clovers will not do well and a good clover growth is about impossible without it. In case acid phosphate is used, ground limestone at the rate of 2 tons per acre is applied every three yeasr, thus ensuring a vigorous clover cover crop. The animal fertilizers will carry phosporus the bone fertilizers furnishing the largest percentage. This may be used at the rate of 400 pounds per acre to advantage.

We have been forced to get along without potash during the past four years,and while this has not been appreciablymissed, yet it seems reasonable to suppose that available soil potash is running low, and as this is one of the essential elements of plants, and one drawn upon reavily in fruit production, we should see to it that a reasonable amount is supplied. Well kept stable manure with all liquid retained by using plenty of absorbents contain about as much potash as they do of nitrogen, and if it is used the trees will have a reasonable supply of this element. It is estimated that a bearing orchard should have 50 lbs. of potash per year. If a 50% muriate of potash is used, one hundred pounds per acre would be necessary to furnish what is required. Cover crop of clover will assist very greatly in making use of inert soil potash. Clovers draw heavily upon this element, and particularly the red clover, if a vigorous growth has been made, will make use of much subsoil potash that other more sallow feeding plants will not get. Cover crops of clover for this reason alone should be considered essential.

It is exceedingly difficult to treat this subject except in a general way. If stable manure is available, annual applications of six tons per acre as stated above with the addition of 300 to 400 pounds of acid phosphate should supply the wants. If the orchard is unthrifty,annual applications of nitrate of soda 100 to 150 pounds per acre should be given until such time as this may be considered unnecessary, owing to a reserve of available nitrogen being held in the humus. Another feature of cover cropping is that the humus is gradually increased in the soil and greater reserves of available plant food will be carried without leaching.

If ever cover crops are making a vigorous growth and the soil thereby built up in nitrogen, it may be advisable to drop even the manure as too strong a vegetative growth may result.

(Continued on page 188)

HORTICULTURE·

PRUNING THE BEARING TREE

(By C. I. Lewis, Chief Division of Horticulture, Oregon Agricultural College, Corvallis.)

In treating the question of prunoing it is wiser to deal largely with principles and allow each grower to work out his own special application. However, the field of pruning is so large and the time is so short before the pruning season begins that I am going to deal very largely this time with some applications of the general principles of pruning, choosing such applilations as I feel would perhaps reach the larger number of our Western growers, and giving as little atention as possible to the question of principles.

During these war times the problem of cost of labor is uppermost in the minds of most fruit growers. Labor is so high and so scarce that it must be utilized to the best advantage. We must not, however, carry the question of economy to such extremes that it will prevent our producing high-quality fruits, as there seems to be a good market at profitable prices for such fruits.

One of the questions which is very important at this time is, how early can I safely begin my pruning? If the pruning period can be spread over a long time it will mean hiring less labor because the grower can do more of his own work . Under normal conditions the best practice seems to be to wait until the danger of severe freezing is over, which is most apt to occur during December and January. One probably runs a less chance of injury by pruning after that period in those sections subject to freezing winters; however, in most districts of the Pacific Northwest there has been only one winter in the last twelve years, namely that of 1908, when much damage occurred from early pruning. During that winter considerable die back and heart rot was started, due to the fact that the early-cut surfaces were easily damaged by the severe winter, and rots got a foothold in the trees. With the present great scarcity of labor one would probably be justified in beginning as soon as most of the leaves are off the trees. It would be better, however, to confine such pruning to the older, more mature trees and the portions having the better air drainage. We should also remember that it is unwise to prune trees when they are frozen. By beginning early the grower would have late fall, all winter and a portion of the spring up to the time the leaves are breaking through in which to do the pruning.

In pruning our bearing fruit trees, the bud and the fruit spurs are two parts which we should give special study. Some investigations that we have made at this experiment station would indicate that the percentage of spurs that bloom from year to year decreases as such spurs get older, and that the percentage of spurs which bear fruit decreases at an even faster rate as they get older. In other words some spurs may have the vittality to produce a bloom but have not reserve energy enough to set or, after setting, to mature a fruit. Our investigations have shown that the amount of growth that a spur makes for a given season has a close relation to its bearing the following season. There is also a correlation between bearing and length and diameter of spur. Branches that have a large diameter have stronger spurs and bear more fruit. From these results it would seem that the spur to a large ertent acts as a barometer, and that a study of their vitality and the nature ow the wood on which they are borne will determine to a certain degree what pruning should be given such trees. One should attempt to develop a fair amount of new wood annually in order to provide for the necessary increase of new buds and spurs essential to the best tree development and should constantly keep in mind the revitalizing of some of the older spurs on the trees.

General pruning practices will mean either a heading back, a thinning out, or a combination of these two. If one simply desires strong sprouts and a new top, so to speak, then heavy heading back will produce that result, but if one really desires more development of spur and bud in the immediate future, then a moderate heading back would be more desirable, since one would be removing a much smaller number of sprouts, which in turn would require heavy heading back. Likewise heavy thinning out would naturally remove more buds than a moderate or light thinning out. Let us apply this idea of heading and thinning to some of our standard varieties. Ttake the Jonathan and Wagener as typical of varieties which often bear large quantities of fruit from auxiliary buds, which would be found on the one-year-old wood. It is evident that a heavy heading back of such varieties would remove a large percantage of the crop, and this is just what is happening in many an orchard in the Pacific Northwest. The tonnage is being greatly reduced by such pruning. Take these varieties from six to ten years of age for example, and they could go without heading for several years to good advantage, and would bear bushels of fruit to the tree which otherwise would be sacrificed. Of course one can carry the non-heading to the extreme. When heading is done with such varieties, it is often wise to do it soon after the apples have formed, we would say in early June. In this way a good crop of apples can still be saved and new wood develpoed for the next year's crop. The Newtown, however, offers an entirely different problem; severe heading in of this variety does not so much remove fruit buds which are already on the tree, but it has a tendency to force out an excessive number laterals. As a result many of our Newtowns are nothing but brush-heaps, and while they continue in this condition will produce little or no fruit often until they are twelve or fifteen years of age. Reduce the heading to little or nothing for a few years and have the pruning consist more of thinning out, and the trees will begin to bear. In thinning out some of these thick Newtowns, however, two plans can be followed. One is to thin out much of the lighter brushy wood, and the second is totake out bodily a few of the large brancehs which sooner or later should be sacrificed. Generally speaking, I believe that the latter practice would be the more practical, as it stil opens up the tree and does not remove as many fruit buds. Some of these smaller branches of Yellow Newtons are the first branches to bear and the constant thinning out of such wood deprives the trees of a large percentage of their buds and spurs and keeps them constantly producing vegetative growth instead of buds and spurs which produce fruit. The Spitzenberg represents another type. Here we have a tree, the branches of which become long and rangy, producing few laterals, thus having too small a bearing surface. This tree also has weak spurs. A large percentage of the spurs on any Spitzenberg tree becomes devitalized after three years. The Spitzenberg needs much heading in in order to force out the laterals and to constantly bring out new wood which will have plenty of bearing surface. I had the opportunity to inspect some Spitzenbergs forty years of age, and I could see by looking over these trees what was going to happen to a large percentage of our Spitzenbergs unless we change our methods of pruning. The trees largely grow much as does the peach, forcing out long, naked branches on which a few twigs bearing weak spurs are borne. I fear too many growers are prone to leave too many scaffold branches in their Spitzenberg trees. I would try to combine my summer and winter pruning in such a way as to produce shorter, stockier main branches, each bearing more laterals. Various parts of the tree should from time to time be headed in or thinned out so as to renew the spurs or revitalize spurs in that portion of the tree. The Ortley represents another type of tree which naturall ygrows stocky, bearing its fruit and spurs close together on the older wood. Here some heading can be practiced without disturbing the tree, and occasionally where a tree becomes somewhat rangy it is wise to head it in and force out a few laterals which in a course of time will become thickly studded with fruit buds and spurs.

In our pruning we must constantly remember that it is desirable to study each branch of our tree and determine its relation to the whole tree. If some of the main strong branches of the tree are growing at the expense of short or weaker branches that we would like to develop, suppress the strong branches by heading them back ro otherwise reducing their leaf surface; this will encourage the weak wood by giving it a larger percentage of the leaf area, which means more growth. Pruning should be well distributed throughout a tree, as a direct stimulation coming from a cut is found close to the point where a cut is made, and if we want a general simulation of the fruiting system of a tree we have got to make numerous cuts. An example of the above can be nicely ilustrated as fololws: If you have five main branches on a pear tree and head in strongly or dehorn one of these, the result will be that just below the cut long suckers or watersprouts wil develop, but on the uncut branches little or no change will be seen in the suprs. tI is largely by distributing our prunings so as to include the other branches that we can get a revitalizing of their parts.

It would probably be well to say a few words in regard to trees six to ten years of age. I have already indicated such trees are generally overpruned. Thinning rather than heading will bring better results, and this thinning may be done in winter and also to good advantage in early summer. By confining our pruning to summer and winter thinning and a little summer heading occasionally most varieties can be made very productive.

As many growers have pear trees a few words in regard to pears will be acceptable. The pear has a tendency to produce too many spurs. Anjou, Bartlett and Winter Nelis often produce a very large number of spurs on a small quantity of wood. Gradually these spurs become weaker and weaker and often set their fruit very poorly, and we say we have a pollination problem on our hands. Our experience has shown that a thinnh out of such spur clusters seems to r vitalize those which are left on t tree, they begin to make a bett growth, the fruit on the trees becom larger and close to the cuts ne shoots are grown out which will turn form new spurs. This is a go illustration of the statment recent made that the stimulation from a c comes nearest the cut and freque cuts are needed to revitalize the sp system of a tree. This work can oft be done to best tdvantage with ha shears. There seems to be a genera feeling that pear trees should neve be cut very much; that it mabes sappy growth susceptible to bligh and there are many evidences tha there is much truth in the last stat ment. It is very interesting to vis the orchard of Mr. Sawyer of Topper ish, Washington. Mr. Sawyer has on of the largest pear orchards in tha country, is in an irrigated section an has had his orchard in alfalfa sod fo eighteen years. He prunes very hea ily and as a result he gets a goo growth, has little or no propping t do and has a heavy yield. He is in section where blight occurs, but h seemingly has little trouble with thi disease. Mr. Sawyer may be uno th dox, nevertheless his ocrhard is good testimonial of the soundness his views and is worth the seriou consideration of pear growers.

Since there is a great interest the Italian prune, a few words to ou prune growers will be of some aid t them. There are three kinds of woo on the average prune tree. First, th upright strong branching wood o staghorn wood, so to speak. Thi wood has a mighty bright future. Se cond, there is the wood which grow out horizontally. This wood has ha a wonderful past, a fair present bu an unpromising future, and, third, th drooping wood; all it has is a pas In other words, the staghorn wood beginning to bear, and in the nea futur ewill not only produce the mos of the prunes on the tree, but also th largest ones. The horizontal wood while still producing lots of prunes, i setting less and less blossoms and i tending to produce small fruit. Th drooping wood may bloom, but is generally too weak to produce fruit of it does produce, the fruit will found to be of inferior quality. Th problem of the prune then, is to kee plenty of staghorn wood coming in the tree and keep removing the droop ing wood. Such a removal would im mediately revitalize the remainin spurs and buds left on the trees; mor fruit, larger sizes and new, vigorou wood is the result. Much of thi drooping wood can be most cheaply and easily removed by putting on a old pair of gloves and simpyl breaking

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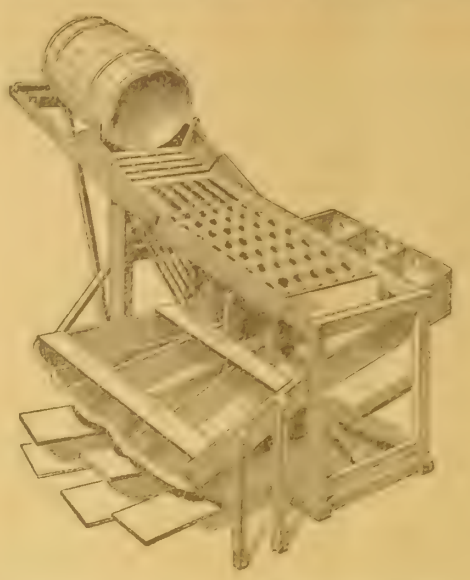

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out. Where a good, vigorous sprout ppears on a prune tree, remove some the older wood next to it and give he sprout a chance to develop. Badly evitalized trees can be dehorned and ew sprouts developed into fruitful ps in four years, but this should not e done unless necessary, as a vigor- us thinning will often revitalize many ees without the loss of the crop for ree or four years. Most of our stone uits such as the prune and the cher- es are often short lived owing to eart rots which develop. These eart rots fungi get their foothold in ounds. The wounds in not only such ees but in all trees should be care- lly protected. Coper nails could be sed where they are easily procured, riving them into the cut surface, the opper killing out the decaying fungi. his is a practice that is being used parts of Californa. The Bordeaux aste, however, as recommended by he Plant Pathology Department of is institution, is very good and made s follows:

Bluestone Solution.—Dissolve 1½ ounds of bluestone (copper sulphate r blue vitrol) in 1 gallon of water in wooden, earthenware or glass ves- el. This is best done by suspending he chemical in a bag of loosely-woven loth or burlap, at the top of the ater, or by pounding the lumps into mall bits and dissolving by use of hot ater. This solution attacks metals ctively.

Lime Paste.—Slake 3 pounds of uick lime with 1 gallon of water, in he ordinary manner.

Mix in Equal Parts.—When the lime s cool enough, equal parts of the blue- tone solution and lime paste should e mixed together thoroughly. Mix nly enough at one time for a day's se. Apply like whitewash with a rush. The stock bluestone solution nd stock supply of slake lime can be ept indefinitely if not mixed together rovided water is added occasionally o keep solutions up to the original olume.

Apply this paste to all wounds and trive in every way to keep decay rom entering the trees. Many a rune tree which looks all right from he outside has really only a few years eft owing to the fact that the decays ave riddled the wood of trunk and ranch, and in a strong wind, some lay, such a tree will be sacrificed.

THE CABBAGE BED

Cabbage growers can afford to take o chances. New York State is far in dvance in cabbage production of any ther State in the Union, and Cortland ounty is one of the leading sections f the State. The Cortland County arm Bureau is giving some brief cab- age pointers that are valuable to all nterested in the crop, having gleaned he lore from exhaustive tests made n 18 farms of the county by Allen S. Merchant, manager of the Farm Bur- au. These tests all coincide with the xperience and teachings of Reed Brothrs of Cortland, who are recogniz- d as the leading growers of the State. The pointers may be usmmed up brief- y as follows:

1. Back seed carefully. Cabbage diseases usually date back to the seed. Home-grown seed where a systematic selection of the best type heads is made is far preferable, being a great factor in developing a heavy yielding strain of cabbage. Most of the com- mercial cabbage seed is grown from immature heads, and absolutely no sel- ective system is practiced.

2. Treat all seed for disease, unless it is positively known to be free from all infection. Two years ago one batch of seed used in this county and not treated ruined the crop on many hun- dred acres—entire fields of eight to 10 acres not having a salable head, when other cabbage fro mclean, home- grown seed produced heavy crops, with other conditions equal. Soak the seed for 15 minutes in one pint of warm water, in which a corrosive sub- limate tablet, costing 2c, is dissolved. Dry on a white cloth quickly in a cool, shady place; a very quick, inexpensive operation which absolutely insures against black heart or stump-rot, the worst foes of the cabbage grower.

3. Prepare a fine, deep seed bed for both the plant bed and the field crop, plowing early, and harrowing at least once a week until setting time, or June 15, to secure fine pulverizing and to kill all sprouting weed seeds.

4. Fertilize well. Cabbage is one of the heaviest feeders grown. Experi- ments on 18 farms in Cortland County showed that 750 lbs. of acid phosphate (16%), with 10 tons of manure, gave the greatest net profit, or over $58 per acre for the fertilizers. Apply broad- cast one day to two weeks before planting.

5. Locate seed bed carefully, away from disease. Avoid the use of man- ure if made from diseased cabbage. Avoid manure from an old barnyard, or land which is flood washed, as such may contain mustard, which is pretty sure to bring club-foot. An old sod in pasture is best—and hen manure free from weed seeds is best for the seed bed.

6. Fertilize the seed bed with 100 lbs. of complete fertilizer and 100 lbs. of lime or wood ashes to the 2,000 sq. ft. necessary for one lb. of seed. This will set two acres of cabbage if it is an open bed. Sow the seed broadcast, mixing it with about equal parts of sharp sand, to increase the bulk and secure evenness of distribution.

7. Sow the seed early, as soon after May 1 as possible.

8. Screen the seed bed if possible, or at least one-half of it. This has been found to be most important in guaranteeing large, well-developed plants regardless of weather condi- tions, ready for transplanting by June 15. Last year was a very backward season, and those who did not screen their beds were two to four weeks lat- er in transplanting, and had far infer- ior plants. Cheesecloth is high this year, but at a cost of 2c per 1,000 plants fo rthe firts year the plants can be screened effectively, and if proper- ly cared for the cloth can be used four to six or more years. Last year some Cortland beds were covered with cloth which had seen five years' use, and was good for another year anyway. Drive down 10 to 12-inch stakes which are two inches square, at distances of about six feet apart, and enclose the outside of the bed with six-inch to eight-inch boards, well banked with earth on the outside to keep out in- sects. The cloth should be sewn to- gether o nthe sewing machine, with a strip of paper run through with it to give the material body and help to feed it, then tack closely to the board sides. A few tightly drawn wires across the center of the bed will keep it from sag- ging on to the plants, and if the wind causes it to whip up and down lay a strip or two of light board across the top. Remove the cloth a week to 10 days before transplanting, to allow the plants to harden off. The plants will grow twice as fast if screened in this way, as the moisture is more even and the temperature under the cloth is 10 to 18 degrees warmer. Also only one- half the seed need be used to set the same area to cabbages, as the germin- ation is much better. At $4 to $12 a pound for seed one can save the cost of the cheesecloth on the lessened a- mount of seed needed in a short time.

9. Transplate into the field not lat- er than June 15. July is far too late. The ground gets too dry, and the plants are handicapped for the whole season, often making less than half the weight per acre, all other condi- tions being equal. Late-set plants grow soft heads, with far less of them of marketable quality, while all are lighter in weight.

10. When transplanting dip the plants all over in a ¾-pt. Black Leaf 40 solution, with 4 lbs. dissolved soap to 60 to 80 gallons of water, and ¼-lb. arsenate of lead to each 14 qts. of the solution. This kills the cabbage lice which are such a pest later—also the cabbage worm—by poisoning the first hatch or crop. The later crop will then be so small as to be unimportant. A sticker made of 2 lbs. resin and 1 lb. sal soda boiled to an amber color in one gallon of water will insure the sol- ution's not washing off in rains.

11. Be sure the soil is very finely pulvrized and not too dry when trans- planting. Squeeze up a handful of soil, and if it will retain its shape it has moisture enough. Do not trans- plant just ahead of a big rain, as a crust forms about the plants, holding them back.

12. A variety of cabbage-setting machines is used in the county. One home-made barrel setter has been in use 25 years, and still does fine work. Perhaps the best results are obtained by the use of the Masters hand-setter, which sets the plant, waters it, and leaves a dust mulch about the plant. This permits of check rowing—about 21 ins.x34 ins. being the ideal distance for setting. This allows of two cultiv- ations the narrow way, and no hand- hoeing is needed.—Rural New Yorker.

1918 New Brunswick Field Crops Competition

GLOUCESTER COUNTY	Wheat		Oats		Potatoes		Turnips	
Name and Address	score	awrd	score	awrd	score	awrd	score	awrd
Henry Nichol, Robertville	96.3	2.38	93.2	2.75				
Stanley R. Roy, Petit Rocher	94.7	2.34	87.8	2.59			85.0	2.01
Horace Hornibrook, Stonehaven	94.4	2.34	86.0	2.54				
Rev. Thos. Albert, Shippigan	93.1	2.33					93.3	2.20
John W. Dempsey, Grand Anse	92.6	2.29	91.2	2.69	80.5	41.04		
Robert Sealy, Canobie	91.5	2.26	92.3	2.72	83.3	4.19	8.80	2.08
Thos. Loan, Turgeon	91.5	2.26	80.6	2.38	85.7	6.30	94.8	2.24
Perkins Hornibrook, Stonehaven	90.0	2.23						
Zotique Lanoit, Belle Dune	89.8	2.22			88.0	7.42	84.0	1.98
Howard Good, Clifton	89.8	2.22	85.1	2.51			90.5	2.14
Peter Landry, Lucre Sett	89.8	2.22						
David O. Henry, South Tetagouche	89.8	2.22					84.8	2.00
Albert McCurdie, Belle Dune	89.5	2.21	87.6	2.58			86.0	2.03
John B. Nichol, Robertville	89.4	2.21	93.1	2.74				
Willie Burke, Mid. Ste. Louis	89.3	2.21	85.0	2.51				
Andrew Hachie, Robertville	89.1	2.20	87.0	2.56				
Apaulinaine Frenette, Robertville	88.7	2.19						
Ed. Cormier, Robertville	88.6	2.19	88.8	2.62				
Alfred Cormier, Robertville	88.2	2.18					82.5	1.95
Allan Hodgins, Belle Dune River	88.1	2.18						
Orville Dempsey, Stonehaven	88.0	2.18	83.0	2.45				
Walter Killoran, Belle Dune River	87.9	2.17					85.5	2.02
Samuel Porier, Grand Anse	87.8	2.17	87.9	2.59			89.5	2.13
Joe De Gruchie, Robertville	86.9	2.15	92.0	2.71				
Antoine Blanchard, Lucre Sett	86.0	2.15	85.3	2.51				
Thos. T. Boudreau, Dunlop	85.5	2.12					82.5	1 95
J. Bte. Cormier, Elm Tree	84.7	2.10	92.5	2.73			89.4	2.11
Sam. Robichaud, Pt. Brule	83.0	2.05	89.2	2.63			92.5	2.19
W. W. Smythe, South Tetagouche	82.9	2.05						
Congregation of Notre Dame Caraquet	81.5	2.02					93.3	2.20
J. B. Cormier, Elm Tree	80.8	2.00	92.1	2.72			88.0	2.08
John Luckman, Mid. St. Louis	80.0	1.98						
Harris Colpitts, Belle Dune River			92.5	2.73			91.6	2.16
R. W. Melanson, Bathurst			90.2	2.66				
Augustine Roy, St. Rosette			88.3	2.60			85.0	2.01
Amede Ache, Savoie Landing			87.1	2.57			89.3	2.11
Michael Shannon, Turgeon			86.2	2.54	80.0	4.02	82.5	1.95
James Comeau, St. George			84.4	2.49				
Maxime C. Robichaud, Shippigan			83.3	2.46			96.1	4.77
Patrick Robichaud, Savoie Landing			82.0	2.42			83.3	1.97
H. G. Ellis, Belle Dune					80.2	4.03	87.5	2.07
Ambrose Killoran, Belle Dune River							96.1	4.77
Adelard Savoie, Shippigan							89.2	2.11
Willie Hammond, Six Roads							88.3	2.09
Gervais Herbert, Shippigan							88.0	2.08
Xavier Cormier, Caraquet							84.2	1.99
Martin Savoie, Savoie Landing							84.0	1.98
Adelard Leger, Caraquet							83.5	1.97
Joseph L. Blanchard, Caraquet							82.0	1.94
Louis Dugas, Caraquet							82.0	1.94
Augustus Robichaud, Shippigan							80.5	1.90
James T. Blanchard, Caraquet							80.0	1.89

An additional $3.00 goes to Henry Nichol and an additional $2.00 to Stanley A. Roy and John B. Nichol, when they exhibit their grain at the Provincial Seed Fair.

SHEEP IN ORCHARDS

Sheep are very apt to gnaw the bark from young fruit trees, and if girdled it will kill them. We sometimes fence the young trees, and I have washed the trunks of the trees as high as the sheep could reach with a mixture of cow manure and water, quite thick. This can be done with an old broom and should be applied twice during the grazing season. I think sheep are beneficial to an orchard, but not as much so as hogs. Twelve shep could be pastured for the season, six months, on three or four acres if good pasture, but the ordinary pasture will do well to keep two sheep to the acre. There seems to be a notion that sheep will thrive on any old pasture, and that they will eat anything and thrive just as well as they will in a meadow. Sheep will not eat the red raspberry bush, but will kill black raspberries. Cattle are much better browsers to kill out bushes than sheep, but sheep will eat most weeds.

Woodlots and pastures do not go well together, and should be fenced apart, as the stock kill the underbrush and the wind blows the leaves away, leaving the roots exposed, as they are deprived of the leaf mulch, and the manure is dropped in the woods and the field grows poorer. I have seen this tried. A fence was made between the woods and the cleared land with the result that both improved rapidly. We do not feed grain when our sheep are on pasture unless there is a drought, when it is better to feed a little grain than to let the sheep run down.

Keep salt in a box for the sheep all the time. The box should have a cover and an opening at one side for the sheep to get at the salt. Salt the sheep a little each day in the morning, if not frosty, until the sheep get all they want, then you can give them what they want at all times.

Sheep need dry land as they will not feed on wet land if given a choice. My sheep alway winter better after a dry season. I think they have fewer parasites and the hay that grows the dry season seems to have better feed- ing value.

H. R. PERRY,
Rensselaer Co., N. Y.

DAIRYING.

PREVAILING MILK PRICES

From reports of the U. S. Bureau of Markets we take the followng prices per quart of "standard grade" milk received by producers and paid by consumers in several widely scattered sections of the country during the month of October:

	Producer Receives cents	Consumer Pays cents
San Francisco, California	7.7	14
Denver, Colorado	6.7	12
Washington, D. C.	11.0	17
St. Petersburg, Florida	10.5	15
Augusta, Georgie	9.0	18
Chicago, Illinois	7.1	13
Fort Wayne, Indiana	5.9	13
Des Moines, Iowa	7.8	15
Kansas City, Kansas	7.0	14
New Orleans, Louisiana	9.5	16
Boston, Massachusetts	9.4	15¾
Detroit, Michigan	7.3	15
St. Paul, Minnesota	6.9	12
St. Louis, Missouri	8.2	14
New York, New York	8.3	15½
Cleveland, Ohio	8.1	14
Eugene, Oregon	7.5	14
Pittsburg, Pennsylvania	8.7	14
Philadelphia, Penn.	9.0	13
Memphis, Tennessee	8.5	16
El Paso, Texas	8.6	18
Salt Lake City, Utah	7.2	12½
Spokane, Washington	7.9	15
Milwaukee, Wisconsin	7.9	12

The prices quoted for producers selling to Chicago and Detroit are for milk delivered at the country shipping station, while the others are F. O. B. city and to get actual price the various transportation costs must be deducted. The average test required of producers is 3.5%, but it varies for the several cities from 3.25 at El Paso to 4% at Philadelphia. From four to five cents per point fat is paid per 100 lbs. milk for tests higher than that required. The consumer's price is for milk bottled in quarts and delivered.

FEEDING VALUE OF SKIMMILK

Experiment station trials on 740 pigs show that when properly fed as a supplement to cereal grains (say, 1 lb. grain to 3 lbs. milk), 100 lbs. of skimmilk will replace 28 lbs. of grain that would otherwise have to be fed without the skimmilk. Using this as a basis the Michigan College of Agriculture figures out the relative value of 100 pounds of skimmilk with grain at varying prices:

Cereal grains Price per 100 lbs.	Relative value of 100 lbs. skimmilk
$1.00	$ .23
1.25	.35
1.50	.42
1.75	.49
2.00	.56
2.25	.63
2.50	.70
2.75	.77
3.00	.84
3.25	.91
3.50	.98
3.75	1.05
4.00	1.12
4.25	1.20

Use your gifts faithfully and they shall be enlarged. Practice what you know, and you shall attain to higher knowledge.—Arnold.

COST OF MILK PRODUCTION AND FARMERS' PROFIT

The principles of cost acocunting used in manufacturing shcuild be applied to agriculture, not that the farmer may always sell above cost, for at times he sells below cost, but that he may know that the average selling price will at least equal the cost anl thus allow him tto break even. Were the results of such cost accounting for the business of milk production known to the farmer as well as to the consumer, the former would bestir himself to reduce his costs, while the latter, recognizing the narrow margin of profit upon which the farmer is working in producing a staple food product, would cease his blind criticism and be willing to pay a fair price for milk which is one of the cheapest foods.

According to the Central Experimental Farm, to find the cost of milk productiin is no sinecure in accounting, because of the complexity of the conditions surrounding the industry, but the importance of the product has led to many investigations with the following average results, using present day feed and labor charges:

Expenditure per Cow	
Feed at cost prices	$ 82.90
Labor per cow including nandling of milk	55.27
Interest and depreciation on herd per cow, $110 at 11%	12.10
Interest, insurance, repairs and depreciation of buildings	8.72
Depreciation of equipment	.50
Losses from abortion, tuberculosis, pneumonia, etc.	1.95
Veterinary services and drugs	.86
Cash sundries	1.96
Added interest of owner in excess of that exhibited by the hired help	6.00
Total	$170.26
Receipts per Cow	
6,167 pounds of milk at 29c per gallon	$178.84
12 tons manure at -2.00 per ton	24.00
Total	$202.84

Uunder the above conditions milk costs the farmer 27.6 cents per gallon, or 6.9 cents per quart. At most he is seliing fore 29 cents per gallonn or 7.25 cents per quart. The profit left to the farmer is very little over the value of the manure for his farm. In one investigation conducted on twenty-five dairy farms, keeping on an average of 460 cows, the average profit per cow per year was $8.23, while out of the twenty-five dairies 28 per cent. reaped no profit whatever.

While 6,167 pounds of milk per cow per year seem a small yield to some farmers, it is in reality a very good average, exceeding the average for Eastern Canada by 2,000 pounds. The farmer's remedy lies in increasing the average production of his herd.

A word to the consumer.—Comparatively speaking, milk is one of the cheapest foods. Instead of being regarded as a luxury, it should be regarded as a necessity. Based on food values, it has been estimated that if porterhouse steak is worth 30 cents per pound, milk is worth 16.5 cents per quart; if eggs are worth 30 cents per dozen, milk is worth 21 cents per quart; if fat fowl are worth 20 cents per pound, milk is worth 20 cents per quart; and if whitefish is worth 18 cents per pound, milk is worth 32 cents per quart. No common meat food is cheaper tha nmilk at 15 cents per quart. Moreover, milk is an already prepared food, requiring no fuel to cook it, a most important consider ation under present fuel conditions.

The question is, "Who is getting the best deal?" Certainly it is not the farmer.

WHEN LIKE DOES NOT PRODUCE LIKE IN DAIRY BREEDING

There are some who do not believe very strongly in a carerul, scientific breeding. There are many scrub cows that are enormous producers both in quality and quantity of milk. Then there are many pure-bred cows that are poor producers. A case has come to notice of a pure-bred cow which produced about twelve thousand pounds of milk in a year, mated with a sire whose dam produced eleven thousand pounds in a year, and the result was a daughter which was capable of producing less than six thousand pounds of milk in a year. It is because of occurrences like that that some dairy farmers look with some suspicion on scientific breeding of dairy cows.

The principle of atavism, which is breeding back to some primitive type, is well shown in such cases. The principle is frequently shown, not only in the breeding of cattle, but in the breeding of all other animals. In such cases the sire and dam that bred back should never again mate. It may be that the fault was not exclusively in either, but in the combination of blood. The intelligent breeder will see to it that such offspring is sent to the shambles.

The experienced breeder can usually see before the calf is two weeks old whether it will be suited to dairy purposes. She dairy animal will have a thin neck. There is a peculiar softness in the skin of a good dairy animal that all experienced animal breeders will quickly notice.

It is a fact that a great deal depends on the way calves are brought up. The best heifer calf may easily be spoiled by being fed fattening food, or by semi-starvation before it is a year old. Both of such procedures are injurious to the calf's digestion. If this is ruined in calfhood, the cow will be a poor producer, no matter what the sire and dam may have been.

It would also seem to go without saying that a great deal also depends on the way the mature animal is fed Fine blooded animals require the best of care and treatment if they are to do their best. If the owner is not able or prepared o give his cows the required treatment, or is too negligent to do so, his fine-blooded cows are certain to sink to a level, if not below, that of the scrub cows. And so it often occurs that the best bred animals are often branded as cheats, only because their owner did not properly treat and sustain them.—A. B.

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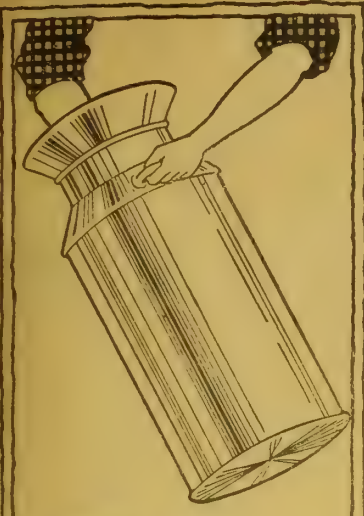

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IN BUYING CATTLE LOOK FOR POINTS THAT SHOW UTILITY

The value of an aninmal depends upon what it possesses. The better it can meet all the requirements of its function the more it is worth. In purchasing dairy stock the buyer must consider all things which influence their performance, and be able to measure their value. An animal with a pedigree may be a poor investment, for there are worthless pure-breds. A high grade of good appearance and conformation may be a law producer, and therefore an unprofitable animal.

The purchaser should consider on the buying of cattle whether they are free from disease, whether they are sound in every respect, regular breeders, capable of making or have made good records in production, and, if pure-breds, whether they conform to their breed characteristics.

It is very important not only to secure healthy animals, but from healthy, clean herds. The losses from diseased animals amount to many millions of dollars annually, and it is sustained very largely, if not entirely, by cattle owners. If right practices are followed, diseases of all kinds can be materially reduced, and many can be eliminatel. This can never be acccomplished if we all remain indifferent to them and take no interest in building clean herds.

Whether an animal is sound in everry respect does have a direct bearing upon its value. A cow or bull may have certain physical defects and stil not interfere with their functions. The cow may have lost one quarter of her udder and still be a large producer, but would not be worth as much as a cow equal in every other way with a sound udder. Just how much a defect depreciates the value of an animal must be left to the judgment of the purchaser. It it highly desirable that an animal be a strong and a refgular breeder, for, unless it will reproduce itself it is worth just what it will bring for beef, na matter what kind of a pedigree it may have or the kind of company it may have kept.

Dairy cows are valuable in proportion to their abilities to produce milk and transmit these qualities to their offspring. The many records which have been made the past few years are giving assistance to buyers in determining the value of animals in this respect. It is to me urged that the production of the animal be given careful consideration. The value of a bull lies in the productive powers of his ancestors, and his ability to transmit these qualities to his offspring. The cow's own record and those of her ancestors influence her value.

The buyer must be well informed upon facts influencing the value of dairy cattle, and then use the information when acquiring new blood for improving his herd. No advancement is going to be made by men who are indifferent to disease, reproduction and production.JHoard's Dairyman,

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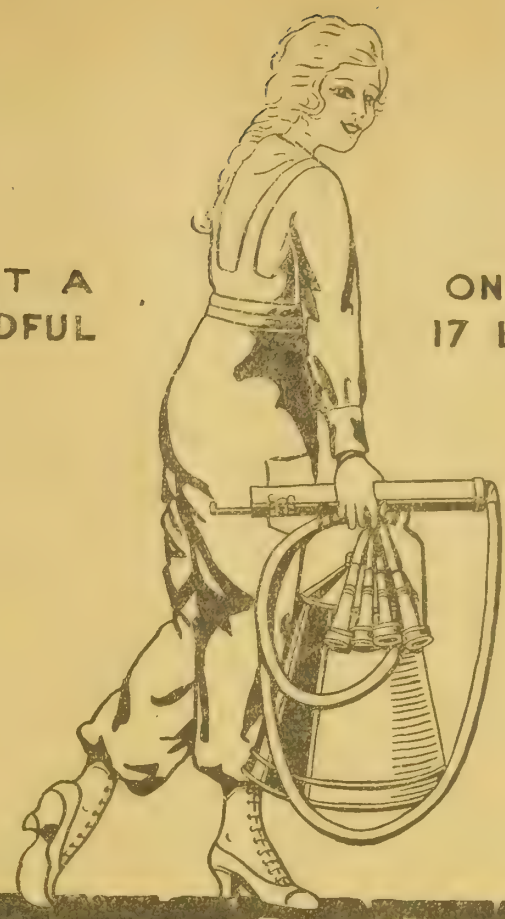
GATHER UP OLD BARB WIRE

It is needless to say that barbed wire at the present time is very expensive. The Germans use it in tryinw to stop the Allies, and the Allies use it in stoppinf the Germans. As a consequence barbed wire is not easily obtained. On many farms there is a lot of old barbed wire lying around, serving no useful purpose at all. This it true whether it is lying around in the yard or whether it is fastened onto posts and hanging loose about the pasture fields. A cow is very likely to try to crawl through a fence made up of two or three loose barbed wires, This is especiaal true if there is some sort of tempting food on the other side of the fence in the next pasture. Such a wire fence should be stretched and stays should be put on between the regular fence posts. This may save much trouble with sore teats and udders, besides it may prevent considerable loss of both feed and ocws. A number of cows may go through the looses wire fence into the alfalfa field, eat too much of it and bloat and die over night. They may get into the cornfield, eat too much corn and waste a lot if it.

In case a cow does cut a gash in the teat or udder do not forget to wash it out thoroughly with a disinfectant. Soak it about 15 minutes in about a 2 per cent. solution of coal tar dip. Then apply some good salve. Vaseline is suitable. If no salve is at hand use a good grade of lubricating oil and even ordinary axle grease is good. Most any of these will keep the germs from getting in and it will keep the air from reaching the raw sore.

When a cow with such a sore udder is milked use care not to reopen the wound. Put the sore side of the teat against the side of the hand. I have seen milkers who have deliberately put the end of their fingers diectly on the sore. If the cow kicked she was punished severely. One cannot expect a cow with a partially healed barbed wire cut on her teat to stand absolutely quiet when it is being bruised in that manner,

It is always safe to tighten up the small wire fence and to pick up the small pieces of barbed wire lying around on the farm. Also remember that barbed wire is worth money nowadays.



Show me the Cows

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CAKED UDDER IN HEAVY MILCH COWS

A simple congestion of the udder is usually noted in heavy milking cows shortly before and after calving. The udder becomes inflamed and causes discomfort. The swelling disappears in a few days and milk secretion becomes normal. In severe attacks, however, rub the udder with lard or camphorated oil several times daily. Leave the calf with the cow in most cases, as the kneading the udder receives from the suckling calf tends to reduce the swelling. Care should be taken to keep the cow from drafts and the udder is benefited by stripping and massaging. In severe cases applications of warm water hasten recovery.

A more serious form of caked udder results from exposure, inpury or excess of protein in the ration. This is known os mammitis. The labored breathing, dry mu zle and poor appetite soon attract the notice of the skilful herdsman, and examination will show one or more quarters agected. If the chill is noted, give a hot drench of one ounce of ginger in warm water, and blanket well. If the cow is costive, give one-pound doses of Epsom salts til normal conditions of the bowels return. Replace the grain mixture with ground oats and bran and. if possible, place the cow in a box stall. Bathe the udder with hot water frequently and if severe pain is evident apply extract of belladoona and support the udder with a bandage over the hips. Mercurial ointment is useful in softening the udder and relieving pain.

Should it be evident that an abscess is forming or danger of gangrene setting in, a veterinarian should be called at once, as loss of the quarter or death may result.

A heavy loss is sustained by breeders from the practice of "bagging" cows when going on sale. Cows in this condition should be handled very carefully and milked out as soon as possible.—G. F. S.

LIVE STOCK.

WHAT THE LIVE STOCK MARKET DEMANDS

The livestock breeder must always remember that market demands really determine to no small degree the policy of his breeding and feeding operations. The tastes of the consumer must always be catered to, if highest returns are to be reaped. We are speaking of beef cattle, sheep and swine, the ultimate end of all of which is the butcher's block, and the butcher is regulated by the customer. Markets in different large centres of the world differ because the demands of the different peoples differ, and changes, gradual though they may be, are ever taking place. Readers will remember when the bulk of the heavy cattle fed were finished for export to Great Britain, and in those days a considerable premium was paid for the heavy steer, as compared with his lighter brother. Steers weighing 1,400, 1,500 and 1,600 were finished in those days at three years and sometimes four years of age. The heavy steer has for several years been in the minority on our markets, but recently there has been, owing to war conditions, an increased demand for heavy shippers, and they have been selling at a considerable advance over the price paid for the best butcher's stock on the leading markets. No doubt when conditions are normal again, the market will revert to pre-war status and the well-finished butcher's steer will hold pride of place on most of our markets, with the exception of the few extra well-finished, heavy cattle which may find their way to Buffalo, Chicago or the Old Land.

The heavy steer has been largely replaced on our markets. Why? There are two main reasons. First, the consuming population in Canada has grown very rapidly during the last two decades, and, owing to various reasons, among them the high cost of living and the increased price of meat, has demanded smaller cuts, which come from smaller cattle. Second, the feeder has found that it pays him better to finish his cattle at an earlier age and put them on the market at from one to two years old, rather than from three to four years of age. The young animal makes most rapid gains, and, provided the calf fat is never allowed to slip off it, develops into a higher quality carcass, with more profit to the feeder. With meat very high in price, the average family is in such a position that the provider feels that he cannot afford very large cuts of this seemingly expensive food. However, he must have some meat, and what he buys, he wants good. The present-day market demands high-quality meat, which means high finish on the cattle. In times like these the feeder is in a quandary. He hesitates to feed high-priced concentrates, which may be needed for human consumption, to his cattle, and without a fair measure of these in his ration, he cannot get prime finish. Consumers should remember that the feeder never gets too much for his finished livestock. When meat is high, feeds are scarce and dear, and when meat is cheap, there is little profit, even if feeds be low in price. The feeder manufactures raw material into the finished product at a percentage profit which would not appeal to the city manufacturer, and yet he finds it good business to feed a large percentage of what he grows on his own farm and often has to buy more. Such a man has skill and deserves pay for it.

What are the market demands for cattle at the present time? A steer of the right beef type, compact, low-set straight, deep, thick and carrying an even coating of firm flesh and weighing over 1,200 lbs., would be considered a heavy-finished steer on our Canada markets and would command a premium of fifty cents or more per hundred over the good steer, not so highly finished and, therefore, no so heavy, weighing aobut 1,000 to 1,200 pounds and classed as "good." Then there is the less high-finished steer of the same wight and not showing so marked beef type and breeding. He is designated 'common.' Following this is the "good" steer of breeding and finish weighing 700 to 1,000 pounds, and the "common" or less breedy individual of the same weight. About two cents per pound is usually the difference in price between the 1,000 to 1,200-pound steer and the 700 to 1,000 pound steer.

Heifers may be divided into "good," "fair" and "common." The first named weighing over 1,000 pounds and fat, showing good beef breeding and type; "fair" being lighter and not quite so well finished, and "common" light, poorly finished and weedy.

Cows are "good" and "common" according to size, finish and quality, as is the case with the heifers. Heifers bring from a cent to two cents less per pound than steers of equal weight and finish, and the best cows are worth about one to two cents per pound less than the best heifers.

Bulls of size, quality, substance and breeding, big fellows, 1,800 lbs. or over, and well finished, may be classed as good or heavy, and sell about on a par with heavy, well-finished cows. All other lighter, poorly-finished bulls may be classed as "Common."

Veal calves are sometimes divided into "good" and "common" or into "choice veal" and "grass calves," the former being generally calves which have sucked their dams and been fed grain besides, and the latter older, grass-fed calves.

So far, we have been speaking of finished beef. Besides this, there are stockers, light, thin, young cattle, weighing 450 to 800 pounds. "Good" stockers are square, breedy youngsters, showing plenty of quality and constitution with the best beef type, while "fair" and "common" are the less breedy, scrub stuff.

Feeders are generally about a year older than stockers and in a little higher flesh, weighing say, 800 to 1,000 pounds. These may be divided into "good," "fair," and "common," according to quality and breeding.

The heaviest finished cattle which have been going out of Canada in recent months have gone to American markets. Buffalo gets a goodly number. Canadian cattle rarely show the finish that the heavy bullocks coming from the corn-belt states do and generally sell for about one to two cents less per pound on the Buffalo market. Although that market is often high enough to pay the drover for taking his heavy cattle across the line.

The main difference in butcher's steers and shipping steers is in the weight. The shipper desired is always a heavy steer, highly finished. A heavy home demand for high quality butcher's cattle has helped turn feeders to the "baby beef," the prime youngster marketed before fifteen months of age and weighing anywhere from 700 to 1,000 pounds, and to the lighter, earlier maturing steer.

There is another market term applied to beef cattle and with which all are familiar, viz., "canners and cutters." Canners are generally thin old cows no use for anything but canned beef. Cutters are cows in a little better condition—good enough to cut up on the block and sell out to the poorer trade at a comparative low price.

The biggest demand for young cattle is found in stockers weighing from 700 to 800 pounds and in feeders around 900 pounds. Beef-cattle feeders are catering to their home market demands. Lighter cattle should never mean that there can be any let up on finish. Every bullock marketed, large or small, must be deeply, evenly and smoothly finished, and this condition only comes with good finish.

Before leaving the cattle, there is another point which should be emphasised. It pays to dehorn all feeder cattle. This should be done when the calves are young by smearing the scurs with caustic potash, which prevents the growth of horns and does no injury to the calves. This is the best time to dehorn, but if not done then, it should be done before the cattle are put on finishing rations.

The heavy sheep seems to have had its day. Present-day market demands are keenest for the eight-pound lamb and the light ewe and wether. The range in weight sometimes given for choice lamb is 78 to 95 pounds; but lamb marketed weighs 90 to 110 pounds. The light sheep, 110 pounds to 135 pounds, is favored, but most of those of good breeding run heavier. Breeders of good sheep find it difficult to finish lambs and sheep at these weights. Our recognized breeds get heavier before they are done growing. Market demands in sheep and lamb are scarcely compatible with breeding practice. All market lambs and sheep should be compact, blocky, deep, thick animals, with a strong, wide, deeply-fleshed back and loin and with a large leg of mutton.

The Canadian hog market is divided into five classes, known as "selects," "heavies," "lights," "sows and stags." A select bacon hog, in normal times, weighs from 180 to 210 pounds. Under the first-mentioned weight he is light and over the last he is heavy. Sows and stags require no explanation. At the market the buyer sets the price on the car of hogs, according to the percentage of selects the car contains, buys them after they are unloaded in his own yards. This is rather unfortunate as we all believe that the only type of hog the Canadian farmer can breed and market successfully in competition is the bacon hog. It requires skill to produce the choice bacon hog with his long smooth side and his neat trim ham and the breeder and feeder is deserving of a premium when he produces the best. Cattle are classifi d. So are sheep. And both are bought and sold accordingly, but the farmer sells all his pigs, outside of the osws and stags, at a flat rate, regardless of bacon quality and proper weight and there is little encouragement for him to take extra pains to produce the highest type of bacon under such conditions. There may be difficulties in the way of buying according to a classification, but these should easily be overcome and packers and farmers alike would ultimately benefit from the change. As it is, the man who produces the best is often paid a smaller price than he should get and the feeder who puts out "light" or "thick fats" gets more than he should in order that an average may be struck and all paid alike. Pigs should be bought at the farmer's pen according to classification, and should be sold on the market in the same manner. Until this is accomplished, the bacon hog can never make the strides he should in this country, which, situated as it is, should produce none other.

Remember, in feeding and finishing, that breeding counts, and, starting with an anim laof the right type, plan to fatten and finish to the highest state possible at the weight which tops the market.

BREEDING EWE LAMBS A POOR PRACTICE

Many flocks of sheep have been established during the past year, and beginners in the business are in doubt as to whether or not it is advisable to breed ewe lambs. To these I would say that this is a condemnable practice, and that the most successful sheep breeders in the country today would not think of doing such a thing, no matter if the flock be large or small.

Common sense tells the reasons why. A sheep makes its best growth in the first year of its life. When the lamb is bred, and is obliged to take up a mothers duty, this growth is checked, and later when nourishing a lamb there is no time for the mother's further growth and proper development. Consequently she never attains to her full growth. The percentage of lambs raised from ewe lambs is generally very small, as nature has not as yet provided the lamb to become a mother at this early age. It is a poor practice indeed to try to raise lambs from lambs.

Even if lambs are well developed, and receive good feed and care, this evil practice of breeding ewe lambs will naturally result in the degeneration and ruination of a flock in the course of a few years. Many such instances have come to my observation, and it was astonishing to note how flocks once made up of strong, robust ewes, capable of producing a big, healthy crop of lambs, and yielding a heavy fleece, had degenerated because the offspring of these ewes were bred as lambs. The size of the individual was reduced, poor constitution resulted, and stamina and vigor were lessened. The quantity of the wool taken from such sheep was one-third less per head than that from sheep which were not bred as lambs.

Successful sheep breeders usually breed their ewes when about one and one-half years old, so that they will bring forth their first lambs when about two years of age, at which time they have almost reached their full maturity.

Frank Kleinheinz.
University of Wisconsin.

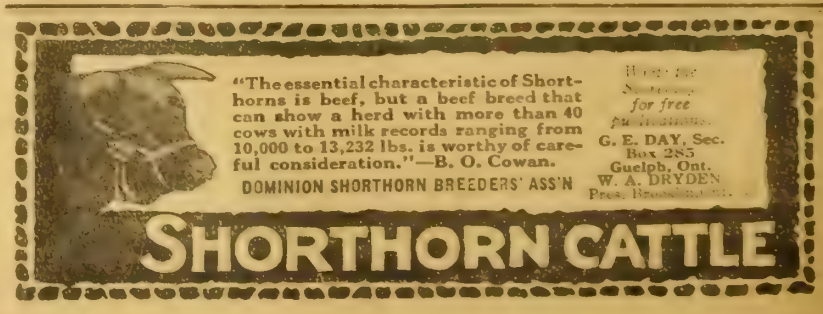
CROSS BREEDS OF SHEEP NECESSARY IN VERY FEW AND ONLY EXCEPTIONAL CASES

There seems to be an idea abroad amongst farmers interested in keeping a flock of sheeep that better results can be had by crossing breeds than by keeping strictly to pure breds. Many inquiries have been made relative to the question of what breeds make the best crosses. It is evident from the letters of inquiries that no satisfactory cross has been discovered and the results do not astonish the skilled shepherd.

Not Much Necessity for Crossing

Cross breeding like pure breeding must be done intelligently. Indiscriminate work in cross breeding will lead to degeneracy of stock and consequent loss to the breeder. There is not much necessity for crossing breeds of sheep at all. There are so many different breeds, each adapted to fit the different soils and climates found in pastoral and farming countries. Great Britain, where nearly all the breeds originated, is peculiarly adapted as the propagatng home and nursery for so many, fitting each breed with a constitution that can fully correspond with their peculiar surroundings. The Cheviot and Highland blackfaces can live and thrive on the mountains of Scotland where pasturage consists of rugged heathland. The Down breeds of which there are many, live and thrive on the upland fertile lands, while the lowland flats have produced the Leicester, Cotswold, Lincoln and similar breeds.

However, farmers who find that their time will not permit them to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follow after the breeding of pure bred sheep, will obtain the best results by keeping a pure bred Leicester ram at the head of their flock of common ewes, especially if they are of the Down variety. In Scotland they are pre-eminently chosen as the best type for crossing. The grey-faced lambs from Highland ewes, and the half-bred lambs from Cheviot ewes by a Leicester sire are unrivalled either for fat, the lamb trade or for carrying over as one-year-old "wethers," as they are termed in the country. In New Zealand and Australia also, where mutton rams have been extensively used to improve the common Merino flocks, to uspply the demand for dressed meat, and also meet the conditions of the wool mrakets, the Leicester has been extensively used, and the cross has given fully better satisfaction than any other. The merits of the Leicester for crossing purposes is its aptitude to fatten, hardihood and soundness, from a mutton standpoint, giving both weight and quality, while its heeece is also of a high quality. For crossing with the fine wooled stock, the Leicester is considered the best where crossing and grading of sheep has been given extensive trials.

To get the first crosses, which are the only crosses that on the average are worth while, a farmer must be prepared to keep two distinct pure breeds for his breeding stock. Haphazard crossing and re-crossing for two or three years with crossbred stock is generally the plan with most farmers who go in for cross-breeding, and a gradual lowering of the sheep standard is the result. To keep ewes for breeding from a flock of half breeds (Leicester-Cheviot crosses) will have good results if a Leicester or half berd ram is again chosen as the sire of their lambs.

The Half Bred Crosses

With only one exception, no cross-bred ram is ever used in Britain, the exception being the first cross between the Leicester ram and Cheviot ewe. The quick fattening quality of the Leicester, together with the size and weight of the fleece that it gives, is supplemented with the vigor and the fine milking qualities and wool of the Cheviot. The reason for these two varieties of sheep blending so well together is perhaps due to the large infusion of Cheviot blood that was introduced in the building up of the Leicester breed. The term Border Leicester is derived from the fact that they originated in the border counties near the home of the Cheviot sheep.

If it is found necessary to use cross bred ewes by any farmer who finds it impossible to procure the breed of the kind required, it is only wise for him to use crosses that are a first cross; that is between two pure breeds. Again, the ram that is chosen for the cross bred ewes will give better results if he is chosen from one of the pure breeds of the breed from which his ewes are crossed. But all crossing of sheep if done to get the best reults, necessitates extra expense in purchaing pure ewes at intervale to keep up steady improvement. To keep ewe flocks pure, without buying, necessitates the purchase of other rams and the flock must be bred in two parts, one part being mated to rams of tehir own breed to furnish fresh ewes to keep up the breeding flock.

Keeping Ewe Flock Pure

There is a popular idea amongst farmers that the crossing of breeds has the effect of giving greater vigor and more rapid growth than characterizes eithe rof the parent breeds. But this has never been proven by actual experiment and the variety of breeds are so many that they are equal to the varying conditions found in Easteren Canada, so that crossing, unless in exceptional cases, is not necessary. Where extreme conditions exist, as there are in Britain, the crossing a Highland with a Lowland breed has its possible advantage, but crossing can only be followed when the main ewe flock is kept pure.

The Balanced Ration Pays

Which one of these bacon hogs would you rather get paid for? Imperfect feeding will get you a *certain amount of bacon*, but it is one of the causes of soft, flabby quality. On the other hand, the use of Monarch, a properly mixed and balanced ration supplying everything the hog requires in exactly the right proportions, will get you *far more bacon* to take to market. Experience has shown that hogs make larger and more economical gains when fed with

Monarch Hog Feed

The quality of bacon will be firm and of good texture, which is essential if you wish to get the highest prices. Monarch Hog Feed is properly mixed and is very palatable; no single feed can equal it. Its high protein content is splendid for growth, and the nutrients are so mixed as to supply every requirement for growing pigs. It gives them stamina, energy, vigor and size.

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TAKING TIME TO TRIM

The percentage of ram lambs among arrivals of native lambs at the markets this year has been larger than ever before. It is conservatively estimated that only about 15 percent reaching Chicago this season have been wethers. Farmers who raise a few sheep do not generally take time to trim the lambs. On the other hand western sheepmen universally trim and dock, and in consequence get a higher price. When native lambs have been bringing $16 to $17.25 per cwt. at Chicago, western lambs have sold for $17.75 to $18.40 on the same days. As proof that the principal difference is in the trimming and docking, a load of native lambs prepared like westerns sold recently at $18.50 which was the extreme top at that time. This was $1.50 per cwt. above the top for shipments of native lambs that included rams instead of wethers.

Market men have always insisted upon the big returns for the little time it takes to perform the simple operation on ram lambs. It is just as necessary as to alter pigs and calves. Many men are putting in breeding ewes this fall for the first time and they should remember this demand of the market. When lambs are a week or two old the operation is easy and very successful. The wether lambs carry more flesh and finish in the fall and dress out more attractive carcasses than ram lambs. The contrast is very great on lambs marketed after July 1. Of course they sell higher.

Failure to attend to such simple but important matters is commonly a farmer's trait. Rush of work causes delay from time to time. Only a determination to figure on the profit of each duty in the care of animals, and do the thing that will eventually make the most money, will keep a busy farmer in line to give his stock every necessary attention. The time spent at such work may easily bring in $50 to $100 per day. This is the pay for brains, for management, for raising lambs instead of having lambs that "just growed."

HOGS AND DISHWATER

It does not pay to take a chance feeding hogs swill which contains strong soap or some of the washing powders. This is particularly true of dishwater which may contain washing powder or soap. The writer is convinced that table slop of this nature caused the death of a brood sow. Table refuse now fed to hogs is carefully scraped from the plates, kettles or utensils, and soapy water is thrown away. This trouble also occurs in feeding hotel slops, which in many instances have caused loss of hogs because of the harmful contents in the dishwater. If it were possible to have the table scraps kept separate from the dishwater, hotel and restaurant refuse could be economically used in pork production. A Cornell bulletin has been issued on the subject, and it is interesting to note that it says: "It seems better to abandon altogether the habit of giving dishwater to hogs. Although the feeding of garbage is generally condemned, the scraps of vegetable refuse could, perhaps, if properly collected, be used with safety. But certainly pure water is a much more wholesome drink, even for swine, than dirty dishwater. When the subject of 'swill feeding' as a business is studied, and the conditions as they exist are understood, the wonder is not that some of the hogs die, but rather that any of them live."

SELECTING THE RAM

In buying a ram the man to avoid is the man who is not a breeder but a dealer. One who picks up his rams here and there, fits them up and sells for several times their real value.

If one can buy or get in exchange a ram that has been used so his lambs can be seen it is of the greatest advantage. The na man knows what he is getting.

Cattle and sheep in Scotland remained practically unchanged in number last June compared with June, 1917, according to the agricultural returns, but swine declined 4 per cent on account of diminished feeding stuffs.

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THE HORSE

SUPERPURGATION

Superpurgation, or over excitement of the intestines from undue action of purgative medicine, is a condition of the bowels frequently seen. The susceptibility of horses to the action of purgatives and other medicines vary greatly. While in a majority of cases this is governed to a great degree by size and breeding (hot blooded horses being more susceptible than those of cold blood, hence require smaller doses in proportion to age, weight, etc.), we find that horses of like breeding exhibit various degrees of susceptibility. It is not possible to tell with certainty by the general appearance of a horse just how large a dose of aloes or other purgative medicine it will require to give the desired action, which usually is moderate purgation. In some cases where an ordinary dose has been given, one that is in proportion to the size and breeding of the animal, practically no purgative action is produced, while in another case of apparently the same nature, in a horse of apparently similar characteristics, severe purgation may be the result. Hence we can readily understand that the most observant and skilful may be disappointed in the operation of a purgative. Some horses, without showing any indications, are particularly susceptible, while others are the reverse. Then again, the susceptibility of a horse varies at different times, owing largely to the general condition of the digestive tract, which may not in any way be indicated by his general appearance. At the same time in cases where reasonable care and intelligence is exercised in regard to the size of the dose and after treatment it is seldom that serious results occur. It is possible that untoward results may occur in any case. The results of a purgative depend, not only upon the size of the dose and condition of the animal, but largely upon the quality of the drugs and upon the treatment of the animal both before and after administration.

When the necessities of the case permit, the patient should be prepared by not allowing anything but a little bran to eat for twelve to eighteen hours before administration. Afterward no solids but bran should be allowed. Water should be given often and in small quantities (if the weather be cold the chill should be removed from the water) until purgation commences. After this solid food should be given in small quantities. Gentle exercise the first few hours after administration hastens the action of the purgative, but on no account should the horse be exercised or worked severely, nor should he be given any exercise during the action of the dose. It is customary, and good practice to allow perfect rest after the administration of the dose until the action has ceased and the bowels become normal.

While there are, in most cases, more or less nauseation and distress, caused just prior to, and during the visible action of the drugs, these are often so slight as to escape observation. But irrational treatment such as allowing solid food, copious drinks of water, fatiguing exercise, etc., increase the irritation and distress. It is good practice to administer a little ginger with the purgative, especially with aloes, as this tends to prevent griping.

The usual symptoms associated with the actions of a purgative are slightly hurried breathing and impaired appetite (not always noticed), when purging is about to commence, and the patient usually becomes more or less nauseated and suffers from slight griping pains. If the purging, however, does not proceed to an undue extent these symptoms soon subside,and the nausea is succeeded by a desire for food. Should the patient be constitutionally weak, or be driven or ridden for a considerable distance, or worked while the purging continues or too soon after purgation ceases, or if the dose was too powerful in the first place, or if two or more of these circumstances operate, the purging will probably become excessive and long continued, and the life of the animal will thereby be endangered. While under ordinary conditions purgation should commence in eighteen to twenty-four hours after the administration of the dose, and continue for a like period, it is not unusual for a longer period to elapse before its action is noticed, and its duration may also be extended beyond the normal time. A purgative dose should not be repeated (except in exceptional cases) for at least thirty-six hours, and then only a small dose given when the first has not operated. We are assuming that the drugs given are of good quality, as, of course, no dependence can be placed upon the action of drugs of inferior quality. Purging may continue for a long time, but as long as the patient is kept quiet and the appetite remains good, the pulse normal or nearly so, little or no donger need be apprehended. If, however, the appetite fails, the pulse becomes thready, and the animal weak. prompt treatment is necessary. The symptoms indicating too violent and long continued action of a purgative are. staring, glassy eyes, frequent indistinct or intermittent pulse, voilding foul smelling or bloody fæces, distended abdomen, with or without evacuations of gas, well marked loss of appetite, and general weakness. The patient usually stands still, or paws and wanders about, but seldom lies down. Horses suffering from any acute disease of the respiratory organs are particularly susceptible to the action of purgatives, and in such cases even reasonable doses act violently.

Treatment.—As stated, when the appetite and strength remain practically unimpaired, even though purgation continue an abnormal length of time, it is not necessary to interfere; but should the symptoms noted be observed, means must be taken to check the purgation. This, however, should not be done too quickly. Care should be taken not to allow water to be taken in large quantities at a time, as the thirst is usually great, and the horse will drink inordinately. The addition to the water of about one-quarter of its bulk of lime-water gives good results. He should be allowed small quantities of anything he will eat. Dry food, as hay and oats, are preferable. If very weak, stimulants as 4 to 6 ozs. of whiskey or brandy should be given every few hours. If purging continues treat as for diarrhoea, viz., give 1½ to 2 ozs. of laudanum and 4 drs. each of powdered catechu and prepared chalk in a pint of cold water as a drench every four or five hours until purging ceases. Care must me taken to not continue the latter treatment after purging ceases, as there would be danger or causing constipation.—J. Hugo Reed, V. S.

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AZOTURIA

While azoturia is not a disease of the digestive organs it is a dietitic disease and quite a common and serious ailment, hence we may be excused for discussing it in this connection.

It is a disease peculiar to the horse and the mule, especially the former. It is characterized by partial or complete arrest of the power of locomotion caused by partial or complete paralysis of the posterior or anterior limbs (usually the former) with a morbid change in the character of the urine. While in all cases the kidneys become involved it is not primarily a disease of these organs. Some authorities call it a disease of the blood. while others class it as a disease of the nervous system. As it occurs after a period of idleness accompanied by high feeding we feel justified in classing it as a "Dietetic disease." It would not be wise to discuss the various views as to the nature of the disease here, as a knowledge of this is valuable only from a scientific standpoint. Besides, as opinions of scientists differ we would gain nothing by the discussion. We shall confine our discussion to the conditions under which the disease occurs, the symptoms and treatment, both preventive and curative.

Causes.—It is a disease of the well kept horse. It does not appear in poorly kept and neglected animals. The predisposition to the disease is produced by idleness and good food. An attack is always preceded by a period of idleness, the period varying to a considerable extent—some say from two days to two weeks or longer. A few days' idleness is more likely to be followed by an attack than a longer rest period. We cannot cal to mind a case that occurred following a rest of less than three or more than ten days. Just why this is a fact cannot be satisfactorily explained. During a period of complete rest and good feeding the equilibrium between repair and waste is altered or partially suspended and plethora is established. The various excreting organs in some cases become more or less inactive. Certain products of the food which should be eliminated by said organs accumulate in large quantities, but no physical symptoms are noticeable that will lead the attendant to suspect danger until the animal is put in motion. Then these products, which are supposed to be of a nitrogenous nature, are converted into various substances, chifly uric and hippuric acids, and are thrown upon the kidneys for elimination or excretion. The kidneys being unable to perform the increased function these materials are practically thrown back upon the system, causing a form of blood-poisoning of the muscles. This produces paralysis, either partial or complete of the muscles involved, depending upon the severity of the attack. It is probable, if the period or rest be extended beyond ten days or two weeks, that the ssytem becomes accustomed to this condition. The excretory organs then regain their activity and eliminate the materials which at an earlier stage in the period of idleness would have caused the disease, had the animal been subject to exercise.

We cannot tell why some animals suffer from the disease under conditions to which several have been subjected, and the others go free. Neither can we tell why a horse may be sub-

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d to such conditions many times impunity and another time be ked with the disease. We know such are the facts, but cannot in them.

e notice that horses accustomed pasmodic exercise, or, in other ls, accustomed to standing idle a few days at a time and then ed or driven, seldom suffer from ria. Most victims are those that accustomed to regular work and food, and from some cause spend e days or more in idleness, and ive their usual amount of grain, are then given exercise. Exer- following rest is necessary to e the trouble. Cases have been ed by horses becoming halter-cast a few day's rest, the exertion ng the efforts to rise having the e effect as exercise or work. It is m that a horse that stands in a stall is attacked. In most cases akes sufficinet voluntary exercise eep the excretory organs active, e prevents an accumulation of products noted. As the disease ways serious (especially in heavy es) and in severe cases often , it is obvious that preventive ment is advisable. This, of se, consists in giving daily exer- to well-fed horses, even if for a few minutes. If conditions e this impossible the grain rations ld be largely reduced and suppde- ted by bran, or, if possible, the e given a roomy box stall during period of idleness.

mptoms.—After a period of rest horse is hitched and, of course, is ly feeling in higher spirits than l and anxious to go. After be- driven a variable distance, from a hundred yards to several miles, symptoms have been noticed in cases very early, and in rare s not for a few hours), he begins se ambition, hangs back, sudden- es stiff or lame, either in a hind re leg (usually the former.) It is thought that he has picked up ail. He perspires freely; the les of the loins or croup, or the leg, those of the forearm and lder, become enlarged and hard- . The respirations become labor- he expressions becomes anxious, pulse frequent and strong, he bles, looks around at his sides, rently suffers pain, and he may own, roll and regain his feet. His becomes arched, he staggers, kles at his fetlock joints, he is g coontrol of his limbs, the whole shakes, he tries hard to retain standing position, but eventually . He may rise on his forefeet, rarely regains the standing pos- , or drag his hind part along upon d fetlocks, and fall again. He rally struggels violently, often be- e sdelirious, and frequently un- rolloble. If he voids urine, or it drawn with catheter, it is noticed e thick in consistence and very in color, very strongly resembl- strong, thick coffee in appearance. is totally unable to rise or stand fted by the use of slings or in r ways, but his power to struggle ery well marked, and it is often ult to prevent him injuring him- and his attendants.

ese are symptoms of a severe , and, of course, are more or less ified in cases of less severity. In cases the patient is able to retain standing position, but the partial omplete loss of power to control limbs is noticed. The lassiitude, rgement and hardening of the cles, anxious expression, and ap- nt colicky pains, and the marked ge in the appearance of the urine, are more or less marked in all cases.

Treatment.—In most cases, when the first symptoms appear, if the horse be allowed to stand still for a few hours and is made as comfortable as possible he will recover without treatment. Hence, as soon as the slightest symptoms of the disease are noticed in a horse that is being driven, ridden, or worked or exercised in any manner after a period of idleness, the driver should not attempt to get him home or to a veterinarian, but quietly lead him to the nearest comfortable quarters (if in fine weather a field or fence corner will do) and send for the nearest veterinarian. If the patieit has trouble in standing, care should be taken to support him, if possible, for a few houds, when he will probably have regained sufficient power to support himself. It is good practice to administer a purgative of 7 to 10 drs. of aloes (according to the size of the uatient) and 2 or 3 drs. of ginger. If the weather is cold, clothe heavily and keep warm. If he can be kept on his feet for a few hours a recovery will take place, and he lan be moved to his own or other comfortable stable in tewenty-four to forty-eight hours or in some cases sooner; in rare cases it requires a longer period of complete rest. If the patient falls and is unable to rise he should be loaded on a boat or truck and moved to some roomy and comfortable place and made as comfortable as possible.

If the services of a veterinarian can be procured it is always wise to do so in severe cases of this disease, as he will follow treatment that can be given only by a veterinarian who has the proper instruments and understands the use of the drugs that are used in treatment.

When such can be procured it is good practice to administer a purgative and follow up with the administration of 1 to 1½ drs. of iodine of potassium every five hours for about twenty-four hours. Injections of warm, soapy water per rectum should be given every few hours to hasten action of the bowels. The urine should be drawn off with a catheter every six to eight hours, and if the kidneys become active ½ oz. of the nitrate of potassium (saltpetre) should be given three times daily. It is necessary for an attendant or two to remain with him, and in some cases it is necessary to hobble his feet to prevent injury to himself or attendants. If the bowels and kidneys can be kept active, and delirium does not increase, there wil be reasonable prospect of recovering, but if the symptoms continue to increase in intensity death will result, usually in from two to three days.

When recovery is about to take place and the patient attempts to rise, he should be assisted. In some cases it is wise to use slings to get him on his feet, but if he cannot stand when raised he must be let down again.

During treatment he should be allowed water frequently, but should not be allowed to drink large quantities at a time, and, if he will eat he should be given bran and a little good hay, or grass if it can be procured. At any time during treatment, if colicky pains be shown, it is food practice to give an anodyne as 1 to 2 ozs. tincture of belladonna or 1 to 1½ ozs. chloral hydrate.

As stated, in all, except very mild cases, it is wise to employ a veterinarian, as complications are liable to arise which he will probably be able to combat and which would not be understood by an amateur.—J. Hugo Reed, V. S.

Everybody interested in road improvement ought to do all he possibly can to spread that interest among others. It is the easiest problem that is before the people to solve, if the people only get thoroughly interested. Where there is a will there is a way.

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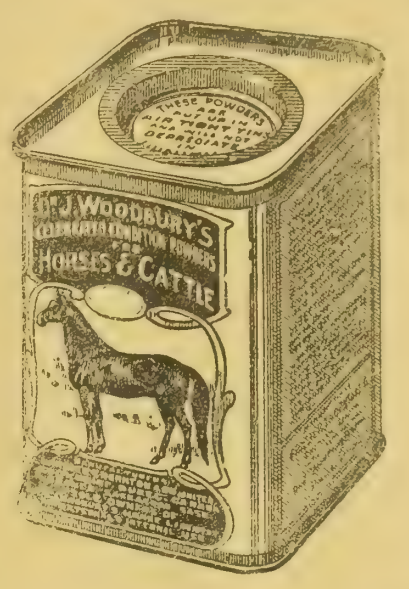

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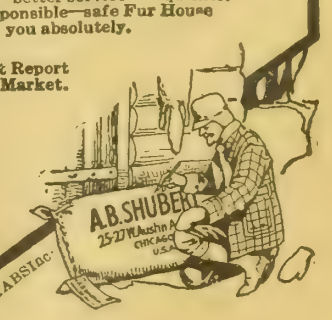

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POULTRY.

THE N. B. PROVINCIAL POULTRY SHOW

The Westmorland Poultry and Pet Stock Association and the York County Poultry Association are now combining efforts and propose holding a union or a Provincial Show in Fredericton on January 7th, 8th and 9th, 1919. Previously each of the above Associations held a separate show, but by combining a larger show than either will result and the members of both Associations are exerting every effort to make the exhibition this winter a record one. The show is conducted largely by the York Co. Poultry Association, of which Mr. M. E. Hagerman of Fredericton is secretary, on the understanding that next year the Show be held in Moncton.

There are several departures from previous shows in the matter of judges, classes, prize money, etc. It was felt that in the interests of the poultry industry a disinterested judge from outside the province should be secured, by which means local breeders would have an opportunity of learning how their birds compare wtih those seen at the larger exhibitions in the West. Professor W. R. Graham of the Poultry Department, Ontario Agricultural College, Guelph, will judge all classes. Professor Graham has a wide reputation as an authority on exhibition poultry as well as the utility side of the business. He has had much to do in years past with the making of the present standards for exhibition poultry and is well acquainted with this part of the business as it is conducted in practically every part of the cointnent. Professor Graham is at the head of one of the largest poultry Experiment Station in America, and has an international reputation of being one of the most thorough and up-to-date experimenalists in his line. He has developed one of the heaviest laying strains of Barred Plymouth Rocks in existence and the influence of his stock is being widely felt not only throughout the Province of Ontario, but every Province of the Dominion.

Approximately $600., it is expected, will be paid out in prize money. The money on the various classes has been increased in most cases from 50 to 100% over previous years which should be considerable inducement for the exhibitors to put up strong classes. The majority of the varieties of poultry recognized by the American Standard of Perfection are in the premium list, and breeding pens are catalogued for the more important and widely bred varieties.

Unlike previous years classes are included for utility chickens of our more important general purpose varieties, e.g. Barred Plymouth Rocks, White Wyandottes, Rhode Island Reds, Orpingtons and Sussex. This will give the farmers who do not wish to breed exhibition chickens and come in competition with the expert breeders, an opportunity of taknig part, and it is hoped that many will avail themselves of this opportunity. Classes are also provided for the members of the Boys and Girls Poultry Clubs organized under the direction of the Department of Agriculture during the past spring. Many of these amateur poultry raisers will no doubt take a keen interest in the Show and have large and excellent displays. Utility poultry is placed on exactly the same basis as exhibition poultry. The same prize money is paid and the same entrance fee required. By developing the utility side of the poultry business the greatest results from poultry raising will accrue. Classes are also provided for dressed poultry and eggs on which liberal premiums are paid.

A large list of Specials have been provided by the two poultry Associations. This includes a large number of silver cups, some of which are donated by individual members of the Associations and others by interested citizens. Mr. Jas. S. Neill of Fredericton donates a silver cup for the largest and best exhibit of Exhibition Plymouth Rocks, Wyandottes or Rhode Island Reds. Mr. A. C. McCulloch, Provincial Poultry Superintendent, donates a silver cup for the largest and best display of utility Barred Plymouth Rocks. This is open to both members of Boys and Girls Poultry Clubs and other breeders. Two incubators will be donated by the Department of Agriculture for the largest and best display by the Boys and Girls Poultry Clubs. Other Specials include bronze medals by the Canadian Poultry Review of Toronto, and others by various interested Poultry Supply Houses, etc.

During the exhibition Professor Graham will give two lectures. One on "The Economics of Poultry Raising." The other on "The Marketing of Poultry Products." Both of these should be of unusual interest to anyone interested in poultry raising. Arrangements are also made for two or three lectures by Mrs. Jas. Stoddard of Mount Lenson, Nova Scotia. Mrs. Stoddard has for some years conducted a demonstration flock under the direction of Mr. Landry, head of the Poultry Department of the Agricultural College, Truro, N. S. Mrs. Stoddard has made an unusual success of her work and comes prepared to give the details of her business as she has conducted it. Mrs. Stoddard is an extremely interesting lecturer and her addresses are well worth hearing.

Mr. M. E. Hagerman, Secretary of the York County Poultry Association, will be glad to furnish premium lists and any other information possible to interested parties.

KILLING MARKET POULTRY

There are different ways of killing a fowl but one of the best is to bleed it by severing the arteries in the neck. From the ceiling of the room in which the killing is to be done, the fowl is suspended by the feet at about the height of the shoulder. Any stout cord with a short stick in the end will do to wrap round the bird's feet. The wings are crossed at the back so that the bird cannot flutter. In that position it is ready to be bled.

For this purpose a particular kind of killing knife is necessary. The blade of the knife should be of a heavy piece of steel, about 2 inches long, ¼ inch wide, and ⅛ inch thick on the back. It should be round to a sharp point with a straight cutting edge, the slope of the point being taken from the back edge rather than from the front edge. The handle should be fairly stout so that it can be grasped readily.

It takes but a fraction of a second to suspend the bird for killing, and when all is ready the head of the fowl is taken in the left hand and the killing knife in the right hand. With the thumb and forefinger of the left hand the mouth is forced open by pressure and the knife is inserted into the mouth with the blade pointing toward the back of the head. The knife is then forced up to the juncture of the head and neck where the arteries come down on each side of the neck; these are severed, which causes the fowl to bleed freely.

Immediately after the fowl has been bled the knife is forced into the roof of the mouth. This is done by withdrawing the knife from the juncture of the head and neck, turning it over so that the back of the knife now passes along the upper beak into the groove in the roof of the mouth. It is immediately forced into the brain cavity, so that the brain is pierced. If the brain has been pierced properly the bird will squawk and it will also make a convulsive movement which tends to loosen the feathers located along the feather muscles. Proper piercing of the brain makes plucking much easier, whereas if the brain has not been properly pierced, the feathers ar hard to pluck and the skin is frequently torn badly.

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Just as soon as the bird has been bled and the brain pierced, a blood-can, which is weighted in the bottom, is hooked on to the lower mandible to catch the blood; it also prevents the bird from moving its body too much.

The sooner the bird is plucked the better. Experts can pluck a fowl in less than one minute. The birds are always plucked dry; it gives them a much nicer appearance and they will keep longer.

In dry plucking, rapidity of movement is necessary. Different pluckers have different ways of plucking, but we have found the following order to be convenient and rapid: Neck, breast, wings, legs, back and body.

As soon as the blood-can has been hooked on the beak, a squeezing motion with the fingers round the neck from the base toward the head removes the feathers of the neck. The soft feathers covering the breast are removed readily by a sort of rubbing motion, rubbing the opposite way the feathers normally lie. Then the wings are held firmly in the left hand and the main wing feather are removed with one jerk by the right hand and the main tail feathers are given a slight twist which should remove them with ease. The thighs and legs are easily plucked in much the same manner as the neck; then finally the back and body of the bird are plucked. After plucking has been completed pin feathers may be removed by using a dull, round-bladed knife. Care should be exercised not to tear the skin. Even small blemishes lower the market value of the dressed bird.

After the bird has been dressed the head and the feet should be washed with a stiff brush. The vent should be squeezed, and if any food remains in the crop an opening should be made just above the shoulder and the food taken out.

The head should be wrapped in parchment paper. Then the bird should be plcaed where it will cool properly, because it is necessary that the heat pass out of the body as soon as possible after the fowl has been killed. Proper cooling prevents bacteria from developing and tends to keep the fowls much longer.—M. A. J.

FLEAS IN HENHOUSE

Will you tell me how to get rid of fleas in my chickenhouse? Spraying does not seem to do any good. I have heard of some chemical which, when burned, gave off a poisonous gas. What is this, and how much would you need for a house 12x30, eight feed front and four feet rear? M. R. S.

Ordinary sulphur is sometimes burned to rid poultry-houses of parasites, and is probably as effectual as anything that you could safely use, though few poultry-houses are sufficiently tight to make fumigation a practical method of exterminating vermin. Thorough cleansing of a house, after removal of all loose litter, and painting or spraying with a coal tar disinfectant or other suitable insecticide is usually more satisfactory in results than attempted fumigation with poisonous gas. If you wish to fumigate, however, close all cracks of the henhouse about windows and elsewhere and burn several pounds of sulphur by making a conical heap of it in an iron pan over a tub partly filled with water, turning a little wood alcohol upon it and touching a match at the top. Five pounds of sulphur does not cost much and will make quite a smudge while burning. It will not kill poultry parasites, however, unless the resulting gas is closely confined to the building, and the poultry-house will require considerable airing before the fowls can be readmitted.

TONICS FOR HENS ADD TO PROFITS

To get the best results from the poultry yards, great care must be used to protect chickens from diseases induced by changes in the weather, by poor ventilation, exposure to drafts and other things. One means of securing such protection is the use of tonics. A tonic of tried quality is suggested by N. E. Chapman, poultry specialist of the agricultural extension division of the Minnesota College of Agriculture. It is made as follows: Magnesium sulphate, 10 ounces; magnesium oxide, 1 ounce; iron sulphate, 2 ounces; ground ginger, 2 ounces; sulphur, 3 ounces.

One tablespoonful of this mixture in moist mash is a dose for twelve birds. Such a dose should be given each morning for three mornings, and then discontinued for a week or ten days.

Permanganate of potash may also be used in the drinking water—as much as can be piled on a ten-cent piece, in a gallon of water.

Apparently chickens are subject to much the same ills that afflict human beings at this season of the year—colds, catarrh, bronchitis, pneumonia, diphtheria and roup.

The careful poultryman will visit his roosts at night and look and listen for signs of colds. He will at once remove any birds showing symptoms of disease in order that the rest of the flock may not be infected. Labored breathing, wheezing, rattling in the throat, gaping and sneezing are symptoms to be looked for. The bird showing these symptoms should be treated at once with one of the following mixtures: Zenoleum and kerosene, equal parts; sweet oil and kerosene, equal; or chloroform, one part, and cotton-seed oil, three parts. The head of the chicken should be immersed in the mixture for a moment or a small amount of the mixture should be injected through the nostrils and mouth. This should be supplemented with the tonic already recommended, or with epsom salts in moist mash—one teaspoonful to each bird. The bird should then be kept in dry quarters and fed bread soaked in milk, and cabbage leaves.

If the roup develops, with a fetid odor, infected birds should be killed and burned, and all birds and chicken houses should be thoroughly disinfected.

SIMPLE FATTENING GRATE

The simplest way of fattening chickens is to place them in a crate six feet long, sixteen inches wide and eighteen inches high. The bottom, back and top are slatted lengthwise and in front the slats are placed upright. On the bottom they are an inch and a quarter apart and one the back, top and front two inches apart. The slats are seven eighths of an inch

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thick. The crate is divided into three compartments and each one opens up separately by a hinged top. A trough for feed is placed on strips in front. The crate is strengthened by having slats there-quarters of an inch thick and an inch and a half wide in each corner of the crate, running lengthwise. The ends and the partition can also be made of solid wood in order to strengthen the crate. Ordinary inch mess wire nailed to the bottom of the crate will answer the purpose of a floor better than a slat bottom, as there will be less accumulation of droppings, therefore making the crate more sanitary.

IT PAYS TO FINISH POULTRY

Even with the present high price of feed no one can afford to sell birds and especially cockerels, in a thin condition. The good prices received for poultry meat more than pay for the extra feed, and if there ever was a time when birds should be finished, it is now.

As a war measure, the marketing of thin chickens should be prohibited. The most expensive part of the bird to produce and that, which is of the least value for food is the frame. The cheapest weight for the feed fed is the flesh as it is all edible, the necessity of putting this flesh on is evident.

The most profitable weight at which to finish cockerels is when they weigh about 4 pounds, but even earlier birds may be fed with profit, as several experiments conducted at the Experimental Farm this summer go to prove.

Poultry meat of all kinds has been a good price. Hens have been selling as high as roasters and broilers have paid well. Leghorn cockerels at the Experimental Farm have been sold at about 2 pounds each, and because of being specially finished on milk, brought good returns and paid well for extra feed. Four different lots marketed in August, 152 birds, weighed 280 pounds, they were fed for about ten days during which time they gained 60 pounds, weighing at the end of the feeding period 340 pounds. They consumed 180 pounds of mash and 24 gallons of buttermilk. The mash was composed of 2 parts cornmeal, 1 part middlings, and 1 part buckwheat screenings.

The cost of feed was 180 lbs. at 4c. per lb., $7.20, and 24 gallons milk at 5c. per gal., $1.20, making a total of $8.40 for feed and milk. Add to this the value of the birds at the start 280 lbs. of thin chickens that would bring 35c. per lb., $98, and it makes a total cost for thin chickens and feed of $116.40.

The weight of the finished chicks was 340 lbs., having gained 60 lbs. in the 10 days' feeding. The value per lb. was increased because of the quality of the flesh to 50c. per lb., making the total value of the birds, $170.

This meant a revenue of $54 for the care of 152 birds for less than two weeks. It also showed that for every pound increase on the birds it took 3 lbs. of mash and 4 lbs. of milk or an average cost of 14c per lb. of gain.—Experimental Farm Note.

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DESTROY THE VERMIN

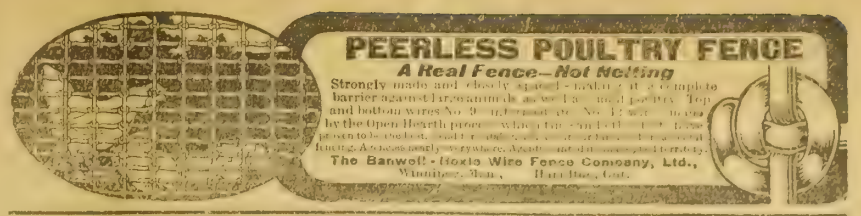
Cornell (Lawry) powder, made with gasoline, crude carbolic acid and plaster of Paris, is effective in controlling body lice on poultry. The insecticide is made by mixing three parts of gasoline and one part of crude carbolic acid with as much plaster of Paris as the liquids will moisten. Allow the powder to dry before it is used. If kept in an air-tight container, it retains its strength for a long time. It must be kept away from fire.

Infested fowls should be thoroughly dusted, especially about the vent, in the fluff, and under the wings. About a pound of the mixture is needed to dust 10 mature fowls. Gloves should be worn during the dusting process as the powder may injure the skin.

This powder is not as effective in combating head lice on poultry, and is not recommended for mites and fleas. The body lice are small, wingless, chewing insects commonly found among feathers. They eat bits of feathers, scales of the skin and dried blood resulting from wounds, but do not puncture the skin and suck blood as the mites do. They may, by constantly biting at the skin, cause severe irritation.

FATTENING FOWLS

In fattening poultry they should be confined in a small pen or crate. Exercise produces hard muscles which means tough meat whiel non-exercise leads to a softness of the muscles which are tender when cooked. Soft feed should be fed as a lack of exercise interferes with the proper digestion of whole grain. The feed should



be finely ground and mixed with water, milk or buttermilk. The following proportions have been found very satisfactory:—½ finely ground corn, ¼ shorts and ¼ ground oats. Use the foods that are reasonable in price. Corn is rich in fat forming elements, but barley and good plump oats can form a larger part of the ration where they can be secured cheaper. The fattening period should last not over two weeks, if continued longer there will be a loss of vigor in fowls without exercise. This fattening will increase the weight considerably as well as improve the quality. Roosters not to be carried over and the poor layers should be culled out and fattened. Put them in the fattening pen.—N. D. Agricultural College.

EARLY PULLETS FOR WINTER EGGS

When we take into consideration that the average egg production on the Canadian farm is 75 or 80 eggs per hen, and when well-managed flocks average 120 to 180 eggs and individual hens even go higher than 300 eggs in the 12 months, it looks as though improvement might be made in the class of stock many keep. In the first place, pure-bred stock is best. They should be from a good laying strain. They should be from good healthy parentage, and for Winter egg production pullets only and early pullets should be kept. In an experiment conducted at one of the Branch Experimental Farms where four different ages of birds were in competition for Winter egg production, it was found that early pullets produced eggs at an average cost of 16.7 cents, late pullets 28.2 cents, two-year-old hens 95.1 cents, three-year-old hens $8.76 per dozen. Figures somewhat similar to these could be procured in larger numbers. The early pullet is the only bird that should be kept for Winter egg production, and it is the Winter eggs that pay. A dozen eggs at Christmas are worth two or three dozens in May or June. Early pullets mean early eggs and early chicks in the Spring, which, of course, means early pullets in the Fall. As a rule, the pullets that lay earliest are the best layers, so that every pullet that lays before Christmas should be marked. They are your best layers.

If you are killing off year-old hens, do not kill hens that moult late in the Fall. They are your best layers, and with your best layers should always be mated male birds from good layers. The male is more than half the flock. A male from a good laying strain, and especially from a goo dlaying mother, will do more to build up the laying quality of the flock than any other one thing. Don't use, then, for breeding purposes cockerels whose pedigree you know nothing about. Better pay a good price and get a good bird.

FEED SPROUTED OATS TO POULTRY

The poultry raiser who has not yet adopted sprouted oats as a part of the hen's bill of fare, especially during the Winter months, is not only depriving his hens of feed that would be relished and which is most valuable in feeding for egg production, but is also overlooking one of his best opportunities to save on the cost of feeding. Town folks who keep only small flocks have been quicker to eralize the advantages of feeding sprouted oats than have farmers, yet the latter are the ones who should be first to understand the food value and the results that might reasonably be expected from sprouted oats, ecause the oats sprouter is to the poultryman what the silo is to the dairyman. A few poultry raisers operate their oats sprouters the year around, having found sprouted oats to be an excellent feed for both laying hens and growing stock. This can be done very profitably when the chickens do not have free range, but is not necessary with the farm flock during that part of the year when there is plenty of natural green feed. The real advantage in feeding sprouted oats is that it provides succulent green feed when none other is available. In the sprouted form, none of the grain is lost or wasted. The hens eat all the tender green sprouts, roots and soft hulls. Every poultry raiser should add an oats sprouter to his equipment. It is just another one of those things that is needed in order to make the poultry equipment complete. It means only a small investment, but large returns.

THE DUST BATH

Folks of the old generation were more appreciative of the benefits of the dust bath than are the poultry keepers of to-day. I can remember when every farm woman, who had fowls for pin money, saw to it that a dust bath was provided in the poultry house. In this the old folks showed their wisdom. Fowls cleanse themselves of insects and dirt by dusting their feathers and then shaking off the dirt and the pests with the dust. The dust bath is, therefore, to the hen what the washtub is to the individual, to say nothing of the fast that she gets good exercise in the operation. Everyone who has ever set a hen knows that she comes off the nest regularly to dust, if she has an opportunity. Instinct teaches her that lice are the worst possible enemies of young chicks and in dusting she is taking the best method of getting rid of them.

We have found that sifted ashes, or clean road dust is just about the best thing possible for poultry to wallow in. The dust bath may be boxed off in a corner of the poultry house, but preferably it should be where the sun shines directly on it, thus making it an inviting spot for the hens in cold weather. —B. W. A.

GOOD WAY TO FATTEN CHICKENS

The most satisfactory method of finishing chickens for market is to confine them to small crates where exercies will eb restricted, and to fed heavily for 10 days or two weeks on a wet sloppy mash made with milk.

The advantages of the crate method of feeding over all other methods are that it is more sanitary, the fowls are more easily controlled, feeding is easier and greater gains are secured. In addition it is easier to avoid disease since every chicken fed is under individual observation.

EGG-EATING HENS

I have 20 hens, and they have a very large range to run in. But they lay soft-shelled eggs and eat them. What should I do with them. N. S.

These hens probably need more lime than they are getting in their food, and this lack may be supplied by giving them crushed oyster shells, as they are sold by all dealers in poultry foods, or, perhaps, old plaster, if oyster shells are not available.

WOMEN'S INSTITUTE SECTION

This section of the Maritime Farmer will be devoted to the interests of the Women's Institutes of New Brunswick. We respectfully solicit contributions from all branches, touching upon matters of general interest. We wish the members of all branches of the Women's Institute to feel that the Maritime Farmer wishes to fully assist them. The Maritime Farmer is the official organ of the Women's Institute of New Brunswick. We would suggest that YOUR BRANCH name a press committee, so that news from YOUR BRANCH may reach other branches.

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The dictates of that magic word,
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Caroline Louise Sumner.

A FOUR FOOTED SECRET

By Mary Talbot Campbell

Ann Brownlee's fingers underscored her meaning upon shrinking shoulders:

"Mark my words, William! If I catch that pest in the house again, chewing things, or digging up the lawn, it's good-by pup. That day will be his last!"

Billie wilted under the dreaded "William," promising the impossible, as troubled eyes sought his quiet father. These two understood each other and know when to seek shelter from the peace-wrecking havoc of her tornado-like temper. When left together, John Brownlee rallied the boy:

"Take a brace, Billie! It's all in the game. Mother never was a boy; never had a dog. Beats all how she catches, throws and runs like a kid! But we men are eternally up against this thing of woman's indoor rights, you know. Guess it's our job to try the President's policy of watchful waiting. Mother means business about the pup."

"Aw! what's the use? Happy'd have to be a deader, stuffed with glass eyes, on a wooden platform under a show case to suit Mother. Looks like I'd got to give him to Fatty Short. His mother's dippy 'bout dogs."

"Cut it out, my boy! A grouch never got anyone anywhere. Men don't ditch a friend at the first hint of trouble: Not much! They stick to the finish. This is a tug of war, with us three fellows against one determined little woman; but she's a housekeeper so we've got to pull together and pull hard. Perhaps the pup's teething, so he's got to gnaw and claw at something. Ever try my kid trick of giving a dog lockjaw with sticky, half-pulled molasss candy?"

Billie chuckled in anticipation but denied ever having done it.

"Just give him more'n he can chew, Dad?"

Wrap it round and round Hap's muzzle and he won't chew anything for a while. But don't neglect to run his legs off in the open at least twice a day. In between tramps we'll try staking the pup out, though it's some like tethering a mosquito that's pestering Mother—that is, we'll do it if there's a chain light enough to hold without hurting your scrap of a dog."

"They'll kid us, Dad! He's so little, not bigger'n a minute."

A good dog's worth some bad jokes. But better get busy filling up those graves he's dug in the yard, before Mother plants him in the deepest one, without waiting for more evidence. No doubt at all but you've got the latest model, perpetual motion, double-back-action dirt-flinger on the market. I'd back him against a dredge to dig a ditch. Trot now! I'll get Mother to show me her new dress."

Grinning his thanks, the boy slammed his way out of the house. Soon Happy had the disagreeable experience of feeling his pert, protesting nose jammed roughly into dirt of his own upturning, while blows instead of caresses fell to his lot.

"Grave digger! Your! own, too. Bad dog! Do you want to be planted, Happy? Cut it out, can't you?"

With beaverish activity, Billie labored to remedy the mischief, while the mystified pup sat in head-tilted meditation at a safe distance, trying to figure it out. A startling big sneeze from such an atom of being cleared the culprit's nostrils, though not his brain; but when Billie laughted at the scattering explosion, the puzzled pup understood. It was one of those two-legged, practical jokes, of course. Politely conceding a waggish appreciation to the far-fetched jest, Happy risked more doubtful humor by accepting a whistled invitation to a tramp.

Reaching the suburban railroad track, a short run from the house, Billie balanced on one toe upon the rail, while the perpetual-motion pup renewed a frantic scartching in a favorite spot of his between the ties. The boy idly watched the dirt fly, unmindful of the fact that the canine mind cannot discriminate between places proper and improper for digging.

It was the day before Christmas and Anne Brownlee came in glowing after a game of snowball with Billie, ending with a race around the block, in which the boy won by just a neck. Tall and lithe, the roses of exercise in her cheeks, she looked little older than the dark-eyed girl John Brownlee had married. The boy panted disconnected phrases:

"Gee, Dad!—Just skinned through! —She's some sprinter!"

"You can bet your bottom dollar on that! Didn't I stake all I had on her being a winner after she nearly made her get-away, long before either of us dreamed you'd be in the running? Your dad's been broken-winded for years trying to keep up with Mother. No doubt at all, Anne, but a bully fine boy was spoiled in the making of you."

"Poor youngster! But what would our boy have done for a mother without me?"

"The conceit of her, Billie! As if I couldn't capture another mother for you!"

"Not on your life, Dad! There ain't nobody but Mother could of had me! Mother's the best ever, 'cept not liking dogs."

Avoiding the discussion of her one maternal failing, Anne Brownlee with playful mystery opened a square box and stood transfixed with surprise. From its nest of tissue paper, she took hand. Finger tips stroked the lustrous plumage of a blue bird, brooding on the brim, as she faced her husband with her fresh-colored smile.

"John! an imported creation for me? And all in such perfect taste! What artist helped you in the clever selection? You dear old thing! Did they hold you up on the price? Poor boy, it looks deliciously expensive! Where did you get it? But, Billie, tell me, is it becoming?"

"Aw! you know you're a peach in it, but no usep kiddin', Mother, for you can't fool me! Don't I know who went with him? You're the hold-up on this job. But where do I come in if Dad's dead broke?"

"You, Billie? You surprise me! Your memory is certainly the thing you forget with. Some boy said to me, 'Mother, if you'll only let me keep Happy, I'll make him do for Thanksgiving, Christmas and New Year's.'"

The boy sobered, but stood his ground.

"Well? Who's crawfishing? He does do! Can't you take a jolly?"

But it provokes me to have your Christmas spoiled by that pup! He's a hopeless torment, impossible to train. Wouldn't you rather get the dog a good home than have him killed, after being caught, red-pawed, or trying to eat the telltale proof of his guilt? Happy's a great name for a poor little puppy prisoner, with death hanging over him at his first break for liberty! Come, be sensible, Billie. Mrs. Short says she'll gladly keep him, if you'll consent to give the pup to Fatty for Christmas. So it's what you call a 'corking' boy's Christmas, with your dreams come true, and a cat thrown in for good measure, or nothing but that pesky, yellow peril! Take your choice—but if you choose right, you and I go shopping together to-night, after another hold-up."

The boy's eyes flashed to his father, heart loyalty aflame, his words charged with explosive vehemence.

"Cats! Not much, Mother! Happy's got any other Christmas beat a mile! And he's growing out of prison faster'n he can dig out!"

Over Billie's head the parents telegraphed their amusement.

When Anne Brownlee left the room to add her hat to the growing display of presents in the parlor, the father was assailed by a whispered petition which proved too much for the elongated boy within him.

"Just for to-night! It's Christmas Eve! I'll scrub him with ivory soap and dope him with bay rum and he's all the Christmas I've got! On the square, Dad, didn't you never sneak off and sleep with a dog?"

John Brownlee cleared his throat and made an honest confession.

Sure thing. But Christmas Eve would be a fake without secrets, so here goes. Men are big bluffs, just kids playing the grown-up game. You came along and pushed me into the part, but I'll make my get-away to-night and help you commit the crime. Better be sure that your room door is shut tighter'n sticking plaster, or the plot will thicken to the danger point for Happy. We'll take no chances on Providence mothering us kids. There's another mother liable to take a hand in this. She's got nerves and dogs get on them. I've got to see that Anne doesn't—isn't—disturbed to-night. Understand? She's a light sleeper and I won't have her losing any rest—over—over possibilities. But with all the help I can give you, Billie, we're taking big chances, for if that four-footed secret gets out, he's a goner."

"I should worry if he gets out through me! But say, Dad, you're a corking good kid! I wish we'd got a even start. But I might of drew a bum father that way."

"Impossible. Mother's a dandy at picking them out."

"I thought the man always picked."

"Think again, Billie, before you're big. 'Propinquity is the splice of life,' they say. That means that by the time your turn comes, if the Great Potter has turned out another masterpiece like Mother, you just stick around handy so's to make it easy for her."

"Aw! I'd rather skin out. But say, I'm busting to tell somebody 'bout to-night—and Happy's dead safe."

Billie was off to confide the overwhelming delight to a bewildered doggie, whose ear twitched to the tickling breath of the great secret.

So it came to pass that through some thrilling smuggling by the conspirators, a sleek, yellow head of minute proportions, was snuggled close to Billie's brown one, after a great battle on the tented field of the bed, where utter weariness conquered at last.

Unconscious of the insurrection in her family, Anne Brownlee busied herself with a generous pair of stockings for unsuspecting Billie.

Happy was first to awaken on Christmas morning. After futile efforts to arouse Billie, he began an excited trip of discovery through the forbidden indoor world. In padded cau-

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Advertise in the Farmer

tion, punctuated by the click of claws on uncarpeted spaces, the puppy reached the door, left accommodatingly open by an unexpected Santa Claus. Pausing to nose a bulging pair of boyless legs, hanging from the knob, Happy slimmed through the crack, tap-tapping down the polished stairs and into the parlor Eden, from which he had been excluded.

Too late, Billie opened sleepy eyes to the drowsy joy of his lumpy stockings, but was fully awakened into blinding terror by the sound of a happy rumpus in the room below. A white-shirted, shivering figure crept stealthily out of the door, without giving a single questioning squeeze to the enticing joys dangling there.

Happy welcomed him noisily, between pawing efforts to rid his nose of annoying blue feathers. Billie captured the pup, smothering his protesting whines in the caught-up folds of his nightshirt. Cold, barelegged and chilled at heart, a youngster with anguished eyes regained his room.

The culprit was buried beneath the weight of bedding, while shaking fingers struggled with Billie's rebellious clothes. An excited upheaval rippled the counterpane, making for the edge of the bed; but a shivering hand thrust the minute, warm body back again, as it burst, bright-eyed and triumphant, from the restraining covers.

Billies's world had come to an end. He dared not dream of the doom awaiting Happy in the clutch of his mother's just rage. No, it was death for one or flight for both, though the boy knew himself blameless for the open door, which he had so carefully shut. But there was no faltering—though a fellow would like to say goodby to his father. One thing was sure, he would die, too, before Dad should catch it through him.

Dumb as the dog, Billie grabbed his cap and gripped Happy to him, circling the inquisitive nose with thumb and finger, to prevent telltale questioning from giving the alarm. The stairs creaked menacingly and the boy's underlip ached from the pressure of his teeth. Happy Clawed angrily at the clamping fingers, wriggling with all his slender might to be free.

At sound of movement in the kitchen, the runaway's breath stopped, the added weight on his chest crushing out hope. The stairs moaned as in sympathy and a voice called:

"Merry Christmas! Trying to get ahead of your mother, Billie?"

"N-no!" chattered the boy, his heart racking his body with its throbbing. A laugh and hurrying steps answered him:

"Oh! no, I suppose not. But why this creeping about?"

His mother stood at the foot of the stairs, lifting an amused smile of welcome, but the escaping criminal was silent.

"Did Santa Claus know what a boy about your size would like, Billie?" she persisted.

"You bet!" almost sobbed the child, for she blocked the narrow way to life and liberty.

"What ails the boy!"

Mrs. Brownlee peered up the shadowy stairway; Billie sniffed.

"Ain't something burning, Mother?"

But this duplicity stirred suspicion, for she had not started breakfast. Running up three steps for a nearer view of guilty Billie, Anne Brownlee discovered that the boy was terror-stricken and trying to shelter his four-footed companion in sin. Instinctively she turned to the parlor and her new hat.

There was a scurrying rush of stumbling feet and a pup's yelp of pain, as the fugitives were jammed against the door in making their escape. Billie's rough little coat slipped from his mother's clutching fingers and the race was on, as John Brownlee cursing his own folly, came to the head of the stairs.

Out of the back door, over the Christmas earth, through light drifts of new-fallen snow and wind-swept spaces of cleared ground, Billie ran for his dog's life. A great love abolished selfish fear, while the mothr's piercing cries penetrated more sharply than terror or cold. His devotion to her shrank achingly from this one ugly phase of her nature. With numb longing, he thought of his father, but when the man's clear shout rang out:

"Billie! Stop!"—the child's heart forced his eyes backward, sorry to disobey, though swift feet never slackened. A half-buried stick, unseen during this incident, tripped him, causing an unconscious reaching for balance, and Happy leaped into space. Fear-frozen, Billie's whistle failed him, but a hoarse:

"Hre Hap—Hap—Yappy!" rose in strangled pleading, as crouching and straightening by turns, the child struggled to regain possession of the pup, as the hunters drew near. But, no! The tiny yellow spot paused a heart-beat, wavering like a shadow on the snow, but at sight of the pursuing woman's face, drew itself out into a streak of maddened flight straight ahead. Goaded by a sharp access of terror, the boy plunged after.

"All my fault! Go home, Anne!" admonished her husband as he passed her, "I'll tend to this."

But she was deaf to reason, though Billie, breathing in sobbing gasps, feared her no more, his heart engulfed by a new despair. The rumble of the suburban rocked the earth with its stupendous approach and he saw the sunshine of life streaking straight for the track. An agonized cry of concentrated prayer shrilled out:

"Father!"

The man heard, throat stung by his boy's pain, sick with his own helplessness. With smarting eyes he followed the blur of the dog's lithe bit of body, shot by fright into the jaws of death. With breathless shouts, he strove to divert the pup's attention, to swerve his course; but Happy, hugging the ground, sped on, deaf to the cries of love and warning. The panic of following Fate was greater than anything which might be ahead.

The mother, clutched by an overwhelming revulsion of feeling, breathed the great name indwelling with us all, pitying eyes traveling between boy and dog, as her tiny enemy raced down the roadbed of the suburban, with the train in hot pursuit.

Life centered in wee Happy; death in the onrushing demon with ghostly breath. The pound, pound, pound of his own heart, the blood surge of desperation, and the grinding crush of gigantic driving-wheels ravaged Billie's world. Anguished eyes never left a flash of yellow, sunning along between the shining rails, just ahead of destruction; but when the grim avenger, in sinous black gained, devoured the life span between and thundered over Happy, Billie went blind, hands outflung piteously as he lived on with a broken heart.

Racked by remorse, the mother promised another dog, yearning arms opened to a dry-eyed boy; but with his last bit of strength, the child, white and reeling, turned from her, to be caught by his father.

Laying Billie on the bare ground, with snow on his forehead, John reached the silent comfort of a strong hand to his suffering wife, speech eluding him. But she too, turned away, moving slowly up the railroad embankment, goaded by her guilt to self-inflicted torture. She paused to tread out of sight in a snowdrift, the vivid blue of a wind-tossed feather, frighted with useless regrets.

"Anne! come back to Billie. The little shaver needs his mother. We've got to make it up to him."

A lifeless voice replied:

"Billie doesn't want me and I don't deserve him."

"Anne, I'm the bloody villian! I tell you it was all my fault. Go home, do. Billie'll need something hot. I'll tend to everything.

Saturated with wretchedness, she gave no heed. Why couldn't another train obliterate the ache and blunder of it all? The mother made a forlorn courage to look down.

Shrinking, Anne Brownlee bowed her head; forced snow-dazzled eyes to open on the shining track.

A pulsing blotch of color, distorted by her tears—the faintest whimper—and the mother crumpled down upon the rail, laughing with broken pathos. Fingers bungled in their haste over a cringing, wildly palpitating pup, snatched to her heart at last, from the depths of the life-saving hole which Happy himself had dug between the ties. Safe, but in a deafened dread, the throbbing mite had cowered, unharmed, while the monster destroyer overleaped his prey.

A-whirl with feeling and delirious speech, sobbingly glad, she cuddled the puppy-prodigal in the curve of her neck, his astonished little body sprawling over the tumult of her bosom. The reconciled pair half-rolled down the embankment in the mother's impetuous rush of restoration.

When the caress of a loving tongue washed Billie's face with lapping affection, and pathetic whines called to

TOOK SEVERE COLD
SETTLED ON CHEST.
Bad Cough for Weeks.

The cold starts with a little running of the nose, the head becomes stuffed up, but little attention is paid to it, thinking perhaps it will go away in a day or two.

You neglect it, and then it gets down into the throat and from there to the lungs, and it is a case of cough, cough, morning, noon and night.

However slight a cold you have you should never neglect it. In all possibility, if you do not treat it in time, it will develop into bronchitis, pneumonia, or some other serious throat or lung trouble.

Dr. Wood's Norway Pine Syrup is a universal remedy for those who suffer from any bronchial trouble. It stimulates the weakened bronchial organs, soothes and heals the irritated parts, loosens the phlegm and mucous, and aids nature to clear away the morbid accumulations.

Mrs. Wm. Kaye, Talmage, Sask., writes:—"Last winter I took a severe cold which settled on my chest. I had a bad cough for weeks. I got some medicine from our doctor but it did me no good. At last a friend advised me to try Dr. Wood's Norway Pine Syrup, which I did, and after using one bottle I found that my cold was better. I have recommended it to my neighbors, and they say they would not be without it."

Dr. Wood's Norway Pine Syrup is for sale by all dealers. Price 25c. and 50c. a bottle.

Manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

RELIEF AT LAST

I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
Address

MRS. M. SUMMERS, Box 309
Windsor, Ont.

"ALL IN" AS HE THOUGHT

Could Not Work or Walk Any Distance.

The efforts put forth to keep up to the modern "high pressure" mode of life in this age soon wears out the strongest system, shatters the nerves and weakens the heart. The strain of business, the cares of home and social life, cause terrible suffering from heart and nerve troubles.

The strain on the system causes palpitation of the heart, faint and dizzy spells, smothering and sinking spells, shortness of breath, etc.

The reconstructive power of Milburn's Heart and Nerve Pills is simply marvellous, and those whose health standard is below par, will find a course of them will soon recuperate their health and get back their mental and bodily vigor.

Mr. Oscar Tracy, Postmaster, Tracy Station, N.B., writes:—"Two years ago I was 'all in' as I thought; could not do any work, nor walk any distance. I had taken no medicine, but tried your Milburn's Heart and Nerve Pills, and found such benefit from the first box that I continued taking them. I am sixty years of age, am able to work every day, and feel fine now."

Milburn's Heart and Nerve Pills are 50c. a box at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

silhouette against the Christmas sky as she raked together her shattered him, the magic of touch and tone opened grieved young eyes. Anne Brownlee, adrift between laughter and tears, knelt close, indiscriminately kissing either or both in her exhilaration. Blissful whisperings brought Billie's arm to a strangled hold about her neck, while through the waters of gladness, the father saw a fresh flowering of motherhood.

NEW BRUNSWICK's FIRST WOMEN'S INSTITUTE STILL GOING STRONG

Editor Maritime Farmer,
Sussex, N. B.

Dear Sir:—

As the "Maritime Farmer" has been made the official organ of the Women's Institutes of New Brunswick, and a section of the paper has been opened to contributions from the various branches, I will ask you to kindly publish in your next issue a short report from our branch, Andover, N. B. The first Women's Institute branch in New Brunswick was organized at Andover on June 12, 1911, with Mrs. J. E. Porter president.

The interest has been sustained and the attendance fairly good through all the succeeding years. The October meeting was not held, owing to the ban on public meetings during the prevalence of the influenza. Our November meeting was held at the home of Mrs. W. A. Gillett, Andover, who has kindly opened her home, which is centrally located, to the members for meetings during the winter. The president, Mrs. D. W. Pickett, occupied the chair and, during the meeting, gave an interesting account of the Provincial Convention, Fredericton, which she had attended as delegate. Correspondence was read by Mrs. C. H. Spike, Secretary soliciting help for different objects. On motion it was decided that each member contribute a chicken, boxes to be shipped before Christmas to Jordan Memorial Sanitorium and Soldiers Convalescent Home, Fredericton.

A programme committee appointed each meeting provides for the program for next meeting, and a refreshment committee supplies the eats.

I will not make this report any longer as I hope to call on you for space in the future, and hope to have more interesting reports to follow.

Sincerely Yours,
JENNIE B. MANZER,
Press Correspondent.

Nov. 29, 1918.

"I Had Rheumatism But Now I Haven't"

WHY PETER R. SHIRMAN RECOMMENDS DODD'S KIDNEY PILLS

Manitoba Man Tells How His Troubles Vanished When He Used the Old Canadian Kidney Remedy, Dodd's Kidney Pills.

Ethelbert, Man., Dec. 13th. (Special.)—"I had rheumatism, and now I haven't." That is the reason in a nut-shell why Peter R. Shirman, a well known resident here, is singing the praises of Dodd's Kidney Pills.

"I could not work, but now I am strong," Mr. Shirman continues. "That is why i think Dodd's Kidney Pills are the best of all remedies."

Asked as to the symptoms that troubled him during the early stages of his illness, Mr. Shirman said:

"I caught cold a year ago. I was troubled with stiffness of the joints and headaches, and my sleep was broken and unrefreshing. I was always tired and nervous, and my skin had a dry, harsh feeling. I was often dizzy, and I had a bitter taste in my mouth, especially in the morning.

"Finally rheumatism and lumbago and Bright's Disease set in. Then I decided to try Dodd's Kidney Pills. They made me well."

If you haven't used Dodd's Kidney Pills, ask your neighbors about them.

HINTS FOR THE SEWING ROOM

Try and save your dressmaker's time when she works at your home. Have the sewing machine cleaned and oiled. Run it on some waste material to throw off the excess of oil. Thread several bobbins with the needed thread. Have pins, needles and sheers handy, also empty table for cutting.

Be sure the ironing board is padded and that it has a clean cover. If garments are to be made over, have them ripped, cleaned and pressed. See that you have plenty of pins, and that they are very fine, for, by using slender, extra sharp pins, you mark the fabric less.

When you work on black or dark cloth wear a white apron. The reflected light will be of help. Save all salvages of georgette crepe, chiffon or fancy fine weaves. You can make a novel and attractive finish by applying them on the material in the original cutting.

Always sew the buttonholes together before washing a sweater or in anything in which buttonholes are liable to stretch.

THE INSIDE MARK OF THE GENUINE

The young girl buyer was quite inexeprienced in the matter of panama hats.

"See," said the saleslady, "you can always tell a geuine panama by looking inside. See how smooth the inside of the crown is in the imitation and how different the finish is in the genuine."

And even so, does it take only a look within our lives by those beside us to tell whether we are the genuine creation God meant us to be or whether we are only attractive imitations or His best work. We may wear the most stylish clothes of the store windows, we may cultivate nice manners and accent, but until we have in our hearts, noble and unselfish ideals, until we are living for something good and great, until we are trying to make our lives a copy of the Life Beautiful, then only will those who look within us see that we are the genuine article that our Maker intended us to be.

AVOID RUSTY NEEDLES

Rusty needles and pins are dangerous when they are thrown around carelessly, or left sticking in the wall paper or on the arms of upholstered chairs. Many people of all ages have lost their lives through the prick of a pin or needle which introduced poison into the ir blood. Germ life is everywhere, and even if the needles and pins are new and shiny, there is danger, as the infection may come from contact with disease on the hands, furniture, window sills and a thousand and one other places.

To be on the safe side, all rusty pins and needles should be carefully disposed of and not left around the house or grounds. Prevention is better than cure, every time.

Belgium Starving

Under Allied Flags

Immediate Help Needed to Relieve Starvation and Suffering—Cannot Hold Germany Responsible NOW!

There is pressing need for our help in Belgium today, and there will be for many months to come.

As our troops occupy the evacuated territory, untold misery stares them in the face. Emaciated children, hollow-cheeked women, roofless homes, clothing so worn it offers no protection from winter's terrors—miseries that cannot wait but MUST be relieved at once to avert DEATH!

Need you be reminded how Belgium was the first to jump into the breach and so make our Victorious Peace possible?

Don't let it be said WE let Belgium starve. Let us cable over your offering to the mothers and children of Brave Little Belgium AT ONCE!

Make cheques payable and send contributions to

Belgian Relief Fund

(Registered under the War Charities Act) 127

to your Local Committee, or to

Headquarters: 59 St. Peter St., Montreal.

TRIFLES

The story has often been told of how a friend of Michael Angelo's once saw the great sculptor at work on one of his beautiful statues. Some time afterwards the visitor again saw the artist at work on the same figure, and observing how little aparently had been done, se said: "Have you been idle since I saw you last," "By no means," was the reply. "I have retouched this part and polished that; I have softened this feature and brought out that muscle; I have given more expression to this lip and more energy to this limb." "But," said the friend, "all these are trifles." "It may be so," replied Angelo, "but recollect that trifles make perfection, and that perfection is no trifle."

GGLESS WHITE CAKE

1 cupful granulated sugar, 2 scant tablespoons shortening, 2/3 cupful of sweet milk, 1½ cupfuls flower, 1 heaping teaspoonful baking powder.

Cream sugar and shortening. Add milk, sift flour and baking powder, and beat hard for several minutes. We find a cheap cake, well beaten and mixed, will be very good. Bake this in a long dripping pan. If desired, cover with the following frosting:

Cook until a soft ball is formed when tested in cold water. Remove from fire, stir until it begins to thicken, then cover cake.

CURED HIS RUPTURE

I was badly ruptured while lifting a trunk several years ago. Doctors said my only hope of cure was an operation. Trusses did me no good. Finally I got hold of something that quickly and completely cured me. Years have passed and the rupture has never returned, although I am doing hard work as a carpenter. There was no operation, no lost time, no trouble. I have nothing to sell, but will give full information about how you may find a complete cure without operation. if you write to me, Eugene M. Pullen, Carpenter, 5543 Marcellus Avenue, Manasquan, N. J. Better cut out this notice and show it to any others who are ruptured—you may save a life or at least stop the misery of rupture and the worry and danger of an operation.

MINARD'S
"KING OF PAIN"
LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

ONE-CRUST APPLE PIE

Prepare crust and line pie tins. Cover thickly with flour, then with granulated sugar. Next place your apples that have been pared, cored, halved. Lastly sprinkle again with sugar and cinnamon, and a dot or two of butter.

Add just enough water to dissolve sugar and flour. The amount of water varies according to the kind of apples that are used, as some are more juicy than others. Bake until crust is brown and apples thoroughly cooked.

Our family prefers this to a double-crust applie pie. It not only is less labor to make but saves one-half the lard.

MILKLESS, EGGLESS, BUTTERLESS CAKE

A milkless, eggless, butterless cake which is very good for school lunches and for suppers is made as follows:

Put in saucepan the fololwing: 1 cupful water, 1 cupful brown sugar, 1/1 cupful lard, pinch of salt, 2 cupfuls of raisins, 1 teaspoonful each of nutmeg and cinnamon.

Boil together for three minutes and remove from fire. When cold add 1 teaspoonful of soda, dissolved in a little hot water, 2 cupfuls of flour, ½ teaspoonful of baking powder. Bake in slow oven.

MAN MUST WORK

Man must work—that is inevitable. He may work grudgingly, or he may work gratefully; he may work as a man, or he may work as a slave. He cannot choose his work, but he can go about it in a cheerful, generous temper and with an uplooking heart. There is no work so rude that he may not exalt it; there is no work so dull that he may not enliven it. But—he must work.—Exchange.

LET a woman ease your suffering. I want you to write, and let me tell you of my simple method of home treatment, send you ten days' free trial, postpaid, and put you in touch with women in Canada who will gladly tell what my method has done for them.

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me to-day. Address:
Mrs. M. Summers, Box 309 Windsor, Ont.

A MESSAGE TO WOMEN!!

THE TEN COMMANDMENTS OF HEALTH

1. Be clean.
2. Swat the fly.
3. Get vaccinated.
4. Save the babies.
5. Eat clean foods.
6. Drink pure water.
7. Breathe fresh air.
8. Pasteruize the milk.
9. Report contagious diseases.
10. Avoid excesses.

APPLE PUDDING

Take a deep granite baking pan. If greased it will wash easier. Pare, core and cut in small slices good cooking apples. Fill pan two-thirds full of the apples. Sprinkle with sugar and cinnamon.

Cover with dough made as follows: Two pints of flour sifted with 2 teaspoonfuls of baking powder, 2 teaspoonfuls of sugar. Mix thoroughly with one heaping tablespoonful of lard. Pinch of salt. Add sweet milk to make dough—not too thick. Spread over the apples and bake until dough is done. This should be served warm with sweet milk or, if preferred, with a sweet sauce.

TEETH GRINDING

(By Dr. Edna C. Robertson)

Whether the season of the year may be one of the contributing factors to the practice of teeth-grinding, the writer is not prepared to say, but, in practice, during the last month or two more children have been attended or brought to the office for the above condition than for any other condition. Of course,, the mother usually attributes the cause to worms, but that has been so often found to be a mistake that we shall discuss the probable causes of the practice.

Teeth grinding is exceedingly common in childhood, and is sometimes puzzling as to its significance. It is seen or rather heard, under such very different conditions, that it is perhaps well to mention first those in which we can be certain of its exciting cause and then to consider those in which its relation to associated disorders is less dfined.

Local Irritation

Grinding of teeth occurs sometimes in the waking condition, but far more often during sleep. In one case brought to the writer's attention lately, most of the grinding apparently was done during the day. On examination, it was found that several new eteth were on the verge of coming through the gums. Relief evidently was found by the child grinding his teeth thus everting a soothing pressure on the swollen gums. This cause then, we might say was due to a local irritation. In these cases, the children are usually peevish, iritable and often have small, red spots on the cheek and chin, and, again, they usually have a great amount of saliva, and in fact, the "slobbering" conditions is, to say the least, disturbing.

Decay of Teeth

This may be one of the contributing factors also. The irritation set up by the decaying process will cause continual annoyance to the child with the result of teeth grinding for relief. Last week a child of eighteen months was brought to the office with decayed upper teeth, so badly decayed that the gums had become inflamed, and it was found necessary to extract the teeth. The mother had assured herself, in this case, that the teeth grinding, which she had noticed, had been going on for some time, was due to the condition. Two days after extraction, the habit had disappeared altogether. As to the cause of the decay of the teeth in a child so young we cannot say, except that it may hape been due to the lack of certain salts in the food of the child when it was weaned. In addition to the decay of the teeth, we may find ear trouble from the inflammation set up, and occasionally this associated with the decay may be one of the other causes.

Intestinal Disturbance

Perhaps commoner than any of these sources of irritation is disturbance in the intestines. In teeth grinding, in the majority of cases, we can almost invariably find the cause in chronic indigestion; the children are usually pale with a large abdomen, rather puffy about the eyes, constipated with stools containing mucus. Moreover, the children are usually thin and said to be wastin or losing flesh. At night, frequently their sleep is disturbed by such things as sleep-talking, waking in sleep, crying out in apparent terror. Often the children will take a knee-elbow position for sleeping instead of lying on the side or back; they lie half crouched in bed. In such cases there is invariably some digestive distrubance. Bed-wetting, too, is a common habit accompanying the same distrubed digestion, and, as the writer has proved in actual practice, many cases of bed-wetting will clear after the digestive distrubances have been overcome. Not long ago, a boy of nine years of age was brought to the office suffering from the habit. In fact, it seemed that during the day, while at school, he found it exceedingly difficult to take care of himself. The writer was asked by the mother for a note to the teacher to allow the boy to leave the room at stated intervals. This child was put on a course of treatment for digestive disturbances, which were very plain from his general appearance, and two days ago the father of the boy was interested enough to call and give the information that the cure had been complete. Very often the source of the digestive distrubances seems to be raw fruit, and especially bananas. For that fruit every child seems to be ravenous, and so very often two and three bananas (green usually) are given to satisfy the cravings of the child, who seems to be almost mad at the sight of the banana. The banana should be at least covered with brown spots, which indicate the degree of ripeness, before being given to any child, and if the writer had her way, no children would be given bananas, except when the fruit had been cooked.

Treatment of Teeth Grinding

Careful dieting with easily digested foods, with milk the main factor in the diet. As to giving a list of food suitable for all children (with exception of milk) that is impossible, for what ih "one person's meat is another person's poison." Eggs, for instance, are most valuable in the feeding of children, but some cannot take them. Some children can take the white of the egg, but not the yolk. The mother usually knows just what agrees with the child, and on what it thrives.

SYRUP

Are YOU saving Sugar by using

CROWN BRAND CORN SYRUP

Corn starch converted into its "sugar" form, with pure cane syrup added.

LILY WHITE CORN SYRUP

The Canada Food Board recommends Corn Syrup (White) for preserving and cooking. Also delicious for all table purposes.

In 2, 5, 10 and 20 lb. tins, at all dealers.

CANADA STARCH CO. LIMITED - - MONTREAL
162

FOR AN INVALID

If soup or beef tea is to be cooled at once, pour it throguh a clean, unbleached muslin cloth, which has been saturated in cold water. Not a particle of fat will be left in the beef tea.

A SEWING HINT

Hem all white and light-colored garments with number 200 white thread using a very lne stitch. It will hold and not show, and may be pulled apart easily if the garment is to be altered or remade.

Never blame the chickens if you don't get eggs. There are about 700 eggs in every hen, about 500 of which are worth going after. You'll get them if you care for the hens properly.

Another thing about chickens: In feeding for broilers or fries give them all they can eat from the time they are little chicks until the day they are sold. Keep feed always before them. It takes a certain amount of feed to produce a broiler and you can give it in a few weeks or drag it out for several months. A good idea is to push them right from start to finish, never letting them be hungry except when they get up in the morning.

PLAIN BUT---
SERVICEABLE STOVES
Cast Iron. Comfortable heat with any wood.
— Durable. Satisfactory. Economical. —
We make other things you probably need.
Drop us a line.
The Smith Foundry Company, Ltd.
FREDERICTON, New Brunswick.

LET US EAT THIS KIND OF CANDY

Bittersweets

An attractoive variety of candies may be made by dopping sweet fruits in bitter chocolate. Use for this purpose dates, citron, candied orange peel or home-preserved fruits, drained, sprinkled with sugar and dried in a slow oven. Melt unsweetened chocolate in a doubl eboiler. Keep the chocolate just warm enough to prevent solidifying. With a silver fork drop pieces of fruit into the chocolate. See that each piece is completely coated, then remove to waxed paper to harden.

Old-Fashioned Molasses Candy

Boil down molasses until it reaches the hard-crack stage. Pour on oiled plates, and cool. Oil the hands and pull portions of the candy until it becomes light colored.

Fudge Squares

½ cupful of vegetable oil, 1 cupful of molasses, 2 eggs, ½ teaspoonful of soda, 1¾ cupfuls of rye flour, ½ teaspoonful of baking powder, 1¼ teaspoonful salt, 2 squares of melted chocolate, 1 cupful of nuts, 1 teaspoonful of vanilla.

Combine the ingredients in the order given, sifting the dry ingredients together. Pour the mixture into a shallow pan. Bake it for ten or twelve minutes in a hot oven and cut it into squares while it is warm.

Pop-Corn Candy

For making pop-corn candy either honey, maple sirup, molasses, white cane sirup or corn sirup may be used instead of sugar. To one cupful of sirup allow one tablespoonful of vinegar. Boil together until the syrup hardens when dropped into cold water. Pour over freshly popped corn and mold into balls.

Chocolate Dainties

Put through the meat chopper half a cupful each of dates, figs and nut meats. Add one tablespoonful of orange peel and one square of melted unsweetened chocolate. Mold into balls and roll in chopped nuts or granulated sugar. This mixture may be packed in an oiled tin, put under a weight until firm, then cut into any shape desired.

Maple Creams

Boil one cupful of maple sugar with one cupful of water until it forms a soft ball when dropped into cold water. Remove from the fire and stir rapidly until it becomes creamy. Form into balls the size of marbles and put nut meats on each side. Lay on wax paper to cool.

CAMOUFLAGED MEAT LEFT-OVERS

Letft-over meats ma be served in many tempting ways, some of which are the following:

Cottage Pie.—Cover the bottom of a greased baking dish with hot mashed potatoes. Add a thick layer of cold cooked meat cut into bits, seasoned and moistened with some gravy. Add some minced onion also, if liked. Cover with another layer of mashed potatoes, cover with dots of butter and bake until brown on top.

Rice and Msat Casserole.—Line a buttered baking-dish with cooked rice and fill centre with chopped cold meat highly seasoned with salt, cayenne, celery salt, onion juire and lemon juire. Moisten with gravy, cover with more dooked rire, then cover the dish and steam 30 to 45 minutes. Serve on a platter, surrounded with brown gravy or tomato sauce.

Mince .on .Toast.—Chop or grind cold meat, heat with some of the gravy, season with celery satl or onion juice and serve on hot, buttered toast.

Scalloped Meat.—Into a baking dish put alternate layers of cooked macaroni or rice and chopped meat. Pour over it tomato sauce, cover with buttered crumbs and bake.

Browned Hash.—Mix together equal parts of chopped meat and chopped boiled potatoes—the meat may be raw or cooked. Moisten slightly with gravy, season and put in a frying pan containing a little fat. Cover and cook slowly. Turn on a hot platter and serve with tomato sauce.

Oxford John.—Take slices of cold mutton and brown in buter or dripping. Add 1 cup rich stock or gravy and a teaspoon of currant jelly. Season with salt, pepper, onion juice, chopped parsley and a blade of mace or dash of nutmeg. Simmer for 5 minutes and arrange on a hot platter about a mound of mashed potato, straining the gravy over all. Garnish with a spoonful of jelly.

THE REMOVAL OF GREASE SPOTS

By Absportion:

Lay the material on a flat surface with the spot between two very soft blotters and apply a warm iron. If this is not effective rub the wrong side of the spot with powdered magnesia, French. chalk, fuller's earth, corn starch or white talcum powder, brushing it off and applying a fresh supply as it becames gummy. When most of the grease has been removed a fresh supply of the absorbent may be applied and the garment hung away for a day or two. The powder should then be removed by a thorough brushing.

By Solvents:

When using a solvent great care must be taken or a ring will be left around the spot cleaned. Place a very soft white blotter or a soft clean cloth under the spot to be cleaned, changing the cloth—or blotter as it becomes

He Cannot Sleep

IT isn't the body that craves rest, but the mind.

When you are bodily tired you can usually fall to sleep at the first opportunity.

But when the nerves are irritated by anxiety and worry rest and sleep seem to be impossible.

The mind seems to be most alert, and you are thinking, thinking, thinking—first of one thing and then of another—often matters of little or no importance. But you simply cannot sleep.

Sleeplessness is the most common and often the first indication of a breaking down of the nervous system.

The object of sleep is to allow the body to rebuild tissue and the nerves to recover tone. Sleep is the ideal condition for this process.

If you cannot sleep you worry, and worry breaks down nerve cells at a tremendous rate, so that instead of laying up nerve force for the demands of the day you are using up the reserve.

The nerve centres are sometimes likened to storage batteries. If you continue to consume the nervous energy in reserve, without paying back, these centres become sooner or later depleted, and you find yourself a nervous wreck.

After a sleepless night you get up feeling tired and lacking in mental energy. Your day's work seems more than you can face, and you become down-hearted and discouraged.

The future is not bright, for you must realize that the natural result is exhausted nerves, paralysis, locomotor ataxia or some form of helplessness.

In Dr. Chase's Nerve Food is found the most natural and the most rational treatment for the nerves imaginable, because this food cure contains the vital substances which go to the building up of the blood and the depleted nerve cells.

Dr. Chase's Nerve Food does not induce sleep, but it does restore the nervous system, and after you have been using it for a few days you will begin to find yourself resting and sleeping naturally.

A little patience is necessary if your nervous system is greatly exhausted, but you will be encouraged by the benefits obtained to keep up the treatment until the exhausted nerves are fully restored, and you feel the energy and snap which means success and happiness.

Dr. Chase's Nerve Food, 50 cents a box, all dealers, or Edmanson, Bates & Co., Limited, Toronto. To protect you against imitations the portrait and signature of A. W. Chase, M.D., the famous Receipt Book author, are on every box.

stained. Sponge the spot with a piece of cloth, like the material when possible, moisten with chloroform, carbon tetrachlorid, ether, gasoline, naptha or benzine. Keep the bottles well corked, have plenty of fresh air and do ont work near heat or a flame as most grease solvents are very inflammable.

To prevent the spreading of the grease and solvent, work with a small amount of the liquid at a time and work from the outside toward the center. The spot should be rubbed gently with a clean cloth until dry.

If the spot is surrounded by an absorbent or the absorbent and solvent made into a paste, there is less danger of the ring.

HOW ILL USE WRECKS CHAIRS

Some people are hard on furniture. Others use furniture with care. A man who sets himself down on a chair properly is a man to be trusted. He not only sits in it gently, with no crushing impactas he strikes it, but he sits in it squarely, without racking it.

On the other hand you may see a man fairly drop into a chair, let go of himself at some distance from it and drop into it with a blow that makes the chair creak and threatens to drive the seat through its frame, or at least to break the psrings. Chairs can't withstand much of that sort of usage; but there are people who seem unable to sit in a chair in any other way.

But the worst thing that can happen to a chair is to have people push back in it. Suppose we are sitting at a table and we want to back away from i tto open a drawer or something. Of course the proper thing to do is to life the chair back with our weight removed from it; but haven't you seen people push the chaor back under them along the floor?

And then hear the poor chair creak and groan in every joint with the thrust thus put upon it. Chairs were made to sit on, vertically; not to be subjected to violent oblique wrenchings and twistings. The chair was never made that would long stand such usage. Under repeated pushings back it becomes wabbly and loose jointed, a mere wreck of its once sightly, secure and satisfactory original self.

MEATLESS DAY SOUP RECIPES

Celery Soup:—

For three people, wash thoroughly a large bunch of celery. Boil until soft, after cutting it into inch pieces. Make a sauce with 1 pint of milk, a lump of butter, salt, pepper and a litte cold milk. Drain the celery from the water, put it in the sauce, boil up once, then serve.

Baked Bean Soup:—

Put 3 cups of cold baked beans, 6 cups of cold water, half an onion sliced and 1 large stalk of celery in a saucepan, bring slowly to to the boiling paoit, let simmer 20 minutes, then rub through a sieve. Cook 2 tablespoons of barley flour in 2 tablespoons of butter, add the ctrained mixture slowly, stir until thickened, add 1¾ cups of stewed and strained tomatoes, season with pepper and salt. Cook 10 minutes longer and serve with croutons.

Cream of Peas Soup:—

Cook 1 tablespoon of chopped onions in 1 tablespoon of butter, add a small piece of bay leaf and cook half an hour, then press through a sieve. Melt 2 tablespoons of butter, blend in 3 tablespoons of barley flour, add slowly 3 cups of milk and cook and stir until smooth. Combine the two mixtures, season with salt, celery salt and a dash of cayenne, and serve.

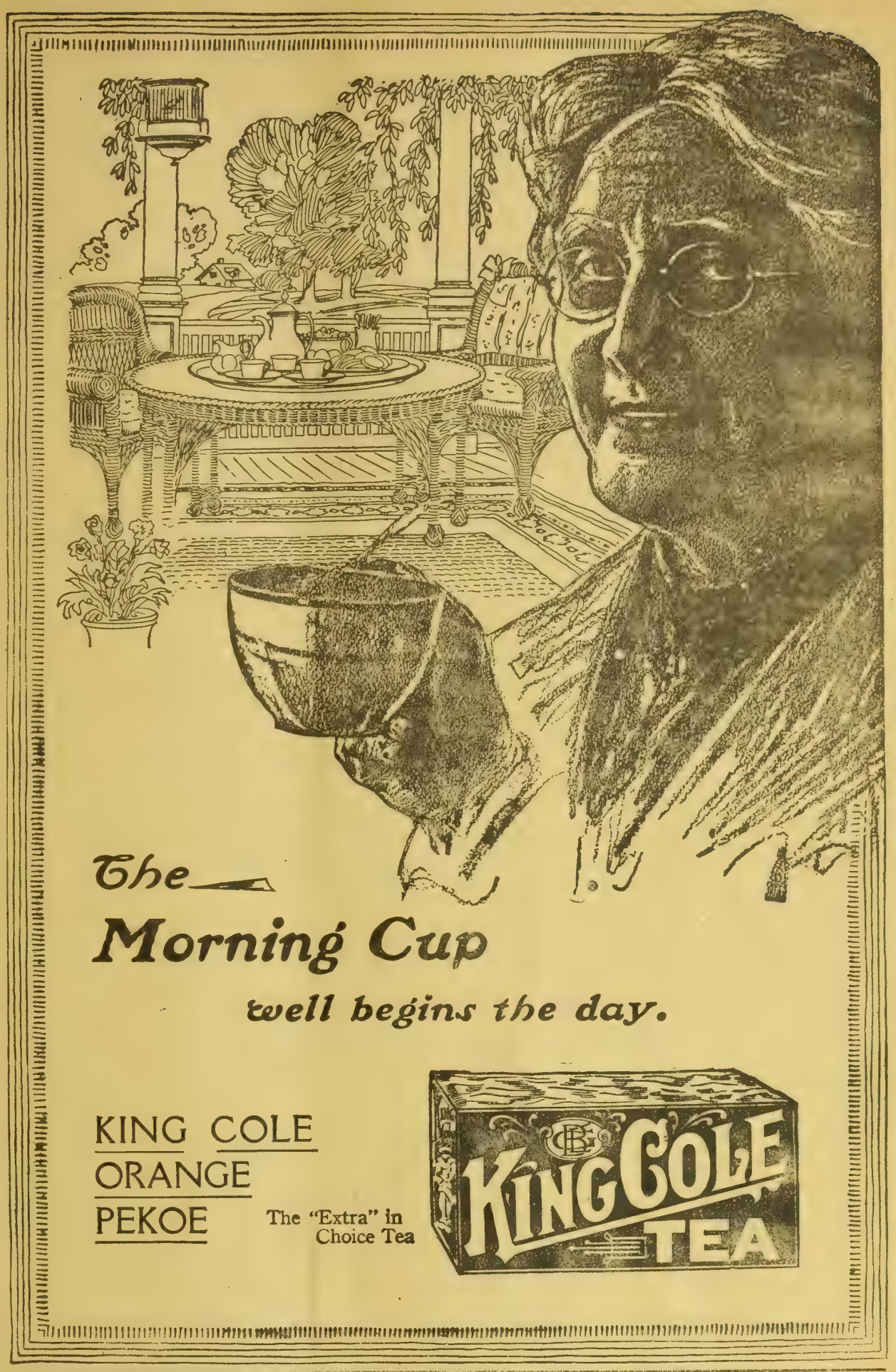
CARE OF SHOES AND GLOVES

Women are learning to be careful of gloves these days. One may not pick up a pair of white kid dress gloves for a song, and even the price of dry cleaning has gone up. The best way this year is to purchase several pairs of really good gloves and make them give the best service by taking infinite care of them, repairing the letsa rip instantly, by smoothing the gloves out flat and never rolling them into a wad, by protecting them from wet on rainy days and by having the mcelaned before they get so soiled that hard rubbing is necessary. Shoes also will receive extra care and attention this year. Every pair will be neatly treed while not in use, oil will be rubbed into the leather to keep it soft and pliable and soes will be exchanged for slippers the moment one comes into the house. The heavy laced sport shoes for rough weather wear will stand much hard usage, but daint ybuttoned boots for formal wear should be carefully protected by rubbers when povements are damp.

A well-cared for shoe will last longer and look better while it lasts than one that is treated without the respect footwear should have these days of high prices.

Wesomeimes say regretfully that our friendship is not worth much because we cannot do for others what we long to do for them, nor give to them what we would like to give. But true friendship can always give that which counts for most, that which is the most precious.

Turn the case around. What is it worth to you to know that some one isinterested in all your interests; that some one believes in you, cares for every joy and grief that touches you? You are stronger and braver every day of your life for the knowledge or sympathy and mutual interests; you are more likely to succeed because some heart shares in the efforts you make. If friendship gives all this to you, shall your friendsnip be worth less in return, Faith and loyalty are the most valuable gifts w ecan offer, and count the most for nappiness and help.



MARKETS.

TME CATTLE MARKET

Montreal, Dec. 14—At the Canadian Pacific Live Stock Market today the offerings amounted to 600 cattle, 900 sheep and lambs, 700 hogs and 250 calves. A feature of the trade at this market was the improved demand from American buyers for supplies, and a larger volume of business was done in this direction than the previous week, which tended to relieve the market of th surplus stock that had come forward. The shipments so far this week were 300 cattle and 2,000 lambs to Boston and 154 cattle to Philadelphia, while 275 cattle and 903 hogs were shipped to Toronto.

There was no important change in the condition of the market today for cattle. Supplies of all grades were ample to meet requirements, and a fair trade was done at steady prices. There were a few small lots of good to choice steers available, which sold at from $11.50 to $12.50 per 100 lbs., but the demand was principally for steers ranging from $9.50 to $10.50, while common lots sold at from $7.50 to $8.50. Some small lots of choice breeders' cows brought $9.25 to $9.50, and the lower grades sold from that down to $7, and the offerings of bulls were disposed of at from $7 to $9.25 per 100 lbs. as to quality. The demand from packers for canning stock continues good and trade in this line was fairly active, with sales of bulls at $5 to $5.50, and cows at $4.50 to $5, with the better grades of bulls selling at $5.75 to $6.25 per 100 lbs. According to advices from Toronto on Tuesday, sales of some Christmas baby beeves weer made as high as $15 to $20 per 100 lbs., and extra choice steers at $14 to $15, the outside price for the former being a record one for this class of stock in any Canadian market.

On account of the renewed demand from American buyers for lambs, the tone of the market has ruled firm at the late advance noted. The offerings today were smaller, but they were ample to fill local wants and a fair trade was done in Ontario stock at $14.50 to $15, and Quebec lambs sold at $13 to $13.50 per 100 lbs. The trade in sheep was quiet and prices ruled steady at from $8.50 to $10 per 100 lbs. as to quality. The demand for calves was good and sales of a few extra choice milk-fed veals were made at $15 to $16, while choice stock sold at $13 to $14, and stall-fed calves at from $5 to $9 per 100 lbs. The tone of the market for hogs was firm under a good steady demand from packers for supplies and sales of long-run selected lots were made at $18.50, and short-run stock at $18 to $18.25 per 100 lbs. weighed off cars.

Winnipeg, Dec. 11—Live stock receipts at the Union Stock Yards today were 2,800 cattle, 41 calves, 2,700 hogs and 347 sheep and lambs. Quotations: Butcher steers $7 to $14.50; heifers $7 to $11; cows $5 to $10.25; bulls $5 to $7; oxen $4.50 to $8.75; stockers and feeders $4.50 to $10.50; veal calves $5.50 to $9.50. Sheep, $10 to $11; lambs $14 to $14.50. Hogs, selects $17.75; sows and heavies $11.50 to $13.75; stags $10 to $12; lights $14.

THE PROVISION MARKET

Montreal, Dec. 14—There was no important change in the condition of the market for live hogs here today, prices being maintained with a steady demand from packers for supplies which were none too large and sales of long-run selected lots were made at $18.50, and short-cut stock at $18 to $18.25 per 100 lbs. weighed off cars. An easier feeling prevailed in the Toronto market on Tuesday, that is to say the prices quoted were a shade lower than last Thursday at $18.50 to $18.75 per 100 lbs. weighed off cars and at $18.25 to $18.50 fed and watered, but evidently the market was in an unsettled condition as these quotations were only given for what they were worth. A very steady feeling continues to prevail in the Winnipeg market and prices for selected lots were unchanged at $17.75 per 100 lbs. weighed off cars. On account of the favorable weather prevailing, a good steady trade continues to be done in country dressed hogs in a wholesale jobbing way, and prices were maintained with sales at $22 to $22.50 per 100 lbs. while city abattoir fresh-killed dressed hogs were quoted at $24.50 to $25 per 100 lbs.

There was practically no change in the market for smoked and cured meats, prices being steady for all lines with a fair amount of business passing for the season for domestic account in a wholesale jobbing way, and sales of 8 to 10 lb. hams were made at 37c per lb., 12 to 15 lbs. at 35c to 38c, and heavier weights at 34c, while breakfast bacon sold at 42c to 43c, Windsor selected bacon at 45c to 46c, and Windsor boneless bacon at 48c to 50c. The demand for barrelled pork continues to be somewhat limited, and the market is quiet with car lots of American bean pork quoted at $41 per barrel duty paid, short-cut clear pork at $46, and clear fat back pork at $56.

The tone of the market for lard remains about steady, but the volume of business reported in a wholesale jobbing way was rather small and the market on the whole was quiet with sales of Canadian pure leaf grades in a wholesale jobbing way at 31c to 31½c per lb. in 20 lb. wood pails, and at 32c to 32½c per lb. in 1 lb. blocks, while American compound lard sold at 27c per lb. in 20 lb. wood pails.

Chicago, December 11—Expected resumption of hig shipments to Chicago tomorrow largely offset in the jrovision market the influence of the immense movement of meats and lard to the seaboard. Prices closed varying from 12c decline to a rise of 15c.

DAIRY PRODUCE TRADE

Montreal, Dec. 14—The receipts of butter today were 265 packages, as compared with 190 for the same day last week, and 172 for the corresponding date a year ago. There were no new developments in the condition of the market today the undertone being very firm, but the demand is still somewhat limited from all sources for supplies, and the volume of business passing is rather small. The jobbing trade was also reported quieter with finest creamery butter selling at 50c to 51c per lb. in solid packages, and at 51c to 52c in 1 lb. blocks.

We quote wholesale prices as follows:

Finest creamery	51c to 52c
Fine creamery	50c to 50½c
Finest dairy	44c to 45c
Fine dairy	40c to 42c

The receipts of cheese today were 171 boxes, as against 1,674 for the same day last week and 147 for the corresponding date a year ago. The market was quiet and firm with a small business passing for domestic account in Quebec goods at 26½c per lb.

The following prices are being paid by the Commission:

No. 1 cheese	25c
No. 2 cheese	24½c
No. 3 cheese	24c

THE LOCAL FLOUR MARKET

Montreal, Dec. 14—The demand for spring wheat flour continues to be somewhat limited and the market is quiet with only a small volume of new business passing for domestic and country account, but the millers are all busy and running to their full capacity owing to the large orders on hand for export account. The tone of the market is about steady with car lots of Government standard grade selling for shipment to county points at $11.25 per barrel in bags, Montreal freights, and to city makers at $11.25, while lots of 50 to 100 bags sold at $11.35, and smaller qantities at $11.45 delivered, less 10c per barrel for spot cash. The trade in winter wheat flour is also quiet and prices are unchanged with sales of broken lots at $11.10 per barrel in new cotton bags, and at $10.80 in second-hand jute bags ex-store. The tone of the market for substitutes is easy with only a small business passing in broken lots of rye flour at $11 to $11.50, oat flour at $11.20, white corn flour at $9.80, barley flour at $9.20, and mixed corn flour at $8 per barrel in bags, delivered to the trade.

MILLFEED AND ROLLED OATS

A very firm feeling prevails in the market for all lines of millfeed owing to the continued limited supplies available and the good demand from all sources for the same, and sales of small quantities of pure grain moullie were made at $68 to $70, pure oat moullie at $64, barley feed at $60 to $62, and mixed moullie at $50 per ton, including bags, delivered to the city trade, while small quantities of bran sold at $38.75, and shorts at $43.75 per ton, ex-warehouse, including cartage, and car lots of bran were quoted at $37.25, and shorts at $42.25 per ton, including bags, ex-track, less 25c per ton for spot cash. A very unsettled feeling has developed in the market for rolled oats, and prices are so irregular that they are difficult to quote at present. Golden cornmeal is selling at $5.40 to $5.60 per bag, delivered to the trade.

COUNTRY PRODUCE

Montreal, Dec. 14—Little change has taken place in the market for new-laid eggs during the past week. On some eastern markets and in British Columbia and increase in receipts is reported, but in the middle west new-laid eggs are exceptionally scarce and the trade is relying upon storage stocks to meet the current consumptive demands. Practically no change in price has taken place except in British Columbia where storage specials are from 7c to 10c lower than last week. The eastern trade report buying selected fresh at 62c to 65c delivered, the price varying according to size and quality and some Ontario country shippers report sales at 60c to 67c f. o. b. country. Most of the held stock seems to have been disposed of and the quality of receipts is improving.

Storage stocks are moving into consumption rapidly at prices over cost, permitted by the Food Board. In western Canada the storage surplus over and above those required for local consumption, has been almost entirely disposed of. A car of western eggs arrived during the past week on the Toronto market, and another car is offered at 55½c f. o. b. Brandon. Under such conditions as noted above, while it would seem as if prices had reached top, there is little likelihood of any decline for some time to come.

The domestic trade in eggs today was fairly active, and the tone of the market remains very firm for all grades. The receipts today were 193 cases, as compared with 850 for the same day last week, and 168 for the corresponding date a year ago.

We quote wholesale jobing prices as follows:

Fancy new laid eggs	73c to 75c
Strictly new laid	00c to 70c
Selected fresh stock	00c to 55c
Cold storage selects	00c to 54c
Cold storage No. 1	00c to 50c

On practically all markets in Canada poultry receipts during the past week have been heavy, this is particularly true of dressed stock. The market is about steady however, under a fair consumptive demand, the surplus going into storage. Some Ontario packers are now filling orders of dressed poultry for shipment to British Columbia, in which province local receipts are only sufficient to meet the current consumptive demands. In connection with western orders turkeys are in very keen demand and Ontario dealers shipping to the west are offering 35c for live and 40c for dressed turkeys delivered. Geese are said to be very plentiful throughout Western Ontario and so far the demand is only moderate. Two or three instances are reported of dealers making offers for frozen poultry delivered, prices reported being, fowl 35c, chickens 27c, geese 30c. In Alberta reports point to a heavy marketing from certain sections of pullets and hens. It is said feed shortage is causing farmers to market chickens that should be carried over the next year and this would point to a shortage of eggs in many Alberta sections this coming spring.

The domestic demand for dressed poultry today was again very good, and an active trade was done which resulted in all supplies in first hands being well cleaned up. There was no change in prices, but the undertone to the market was very firm, with every indication of a brisk trade being done for the next ten days to come. Sales of choice turkeys were made freely at 40c o 41c per lb. principally at the outside figure, and extra milk-fed chickens at 35c.

We quote wholesale prices as follows:

Choice turkeys, per lb.	40c to 41c
Lower grades	38c to 39c
Milk-fed chickens	33c to 34c
Ordinary chickens	24c to 29c
Fowl	24c to 28c
Geese	25c to 26c
Ducks	32c to 34c

There was no change in the condition of the market for potatoes to-day, prices being maintained under a good steady demand for small lots to meet immediate requirements, and a fairly active trade was done in a wholesale jobbing way in Green Mountains at $1.90, and in Quebec white stock at $1.70 to $1.75 per bag of 90 lbs., ex-store. Car lots of Green Mountains were quoted at $1.80, and Quebec white stock at $1.50 per bag of 90 lbs. ex-track. The demand for Quebec turnips continues good and prices rule steady at $1.25 per bag of 70 lbs., and onions are selling freely at $1.50 to $1.75 per bag of 70 lbs. ex-store.

THE BALED HAY MARKET

There was no change in the condition of the market for baled hay today except that supplies are commencing to come forward a little more freely and local buyers have less trouble in filling their requirements. A fair trade was done in this respect and prices were unchanged, with sales of car lots of No. 1 timothy at $26 to $27, No. 1 light clover mixed hay at $26 to $27, No. 2 timothy at $25 to $26, No. 2 cloved mixed hay $24 to 25, and No. 3 timothy at $23 to $24 per ton, delivered to the trade.

BETTER ASSORTMENT FEEDS

Standard Feeds will now come in cars with Oats, Barley Meal, Chicken Feeds, etc. Are you interested? Cotton Seed Meal Coming

A representative of the Maritime Farmer has arranged for the distribution of a variety of feeds with Ground Special, Ground Standard, Molasses Hog, Molasses Dairy, Molasses Horse. We can now supply barley meal, oats of any grade in bags or bulk, chicken feeds, etc. They will all come in the same car. The prices will be available in the course of a day or so and if you are interested you might write us. We also have a few cars of flour, shorts, bran, oats and other mill products. These are offered while they last to agricultural organizations.

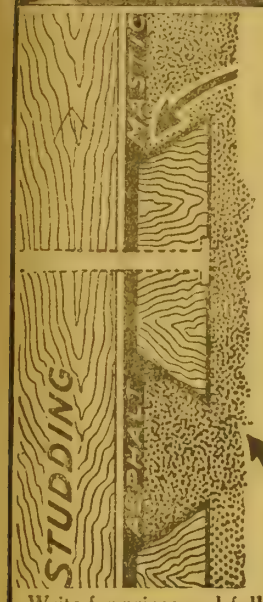
We have also applied for a share of 25.000 tons of cotton seed meal. which is coming to Canada. We have asked for an allotment for farmers in the Maritime Provinces to be distributed in car lots at cost. If you want COTTON SEED MEAL, send in your application. The price of this feed was fixed last fall by the United States

RE-MODEL THE BARN YOURSELF

Don't let the scarcity of carpenters prevent you from putting on that addition to the house—re-modeling the barn—or building the poultry house, grain bins or garage that you need so badly.

Do the work yourself, using BISHOPRIC STUCCO BOARD. It comes in sheets 4 ft. wide and 4 to 10 ft. long, ready to be nailed to the studding. It takes the place of boarding, sheathing paper, furring strips and laths—and saves 50% of the cost of building in time, labor and material.

BISHOPRIC STUCCO BOARD



This Cut represents a cross section of wall, showing Plaster, Stucco, Stucco Board *(note the Key holding Stucco)* Asphalt, Mastic and Fibre Paper

Write for prices and full particulars.

BISHOPRIC WALL BOARD CO. LIMITED - OTTAWA 136

food controller. The quality and price have not yet been announced for Canada, but the Maritime Farmer put its application in some months ago and is now in touch with the authorities in connection with the distribution of this feed. How much the Maritime Provinces will get is as yet undecided. Write us if you are interested.

BIGGER AND BETTER GRIST MILLS FOR N. B.

The increased interest among the farmers of the province of New Brunswick in regard to the production of sufficient grain to bread themselves, and the results they have achieved in recent years, particularly during the season 1918 by their hearty response in the campaign inaugurated and successfully carried out by the local Department of Agriculture along this line, necessitates increased milling facilities. In response to the demand mills are being erected in various sections of the province. For several years the New Brunswick Department of Agriculture has been bonusing new flour mills to the extent of $1000 for mills of twenty-five barrels capacity. The time has now arrived when the amount of work offered in the respective districts is more than a twenty-five barrel mill can accomplish in sufficient time to be of good service to the community in which they are located. Many of our twenty-five barrel mills are now running night and day, turn. The outcome is that progressive millers are seriously contemplating the installing of another unit to double their capacity. Prospective builders are planning for fifty-barrel or larger mills with an eye to steady development of work so well begun.

The erection and maintenance of mills capable of meeting the requirements, whether put in as additions to existing plants or newly installed mills represent a considerable outlay. The larger capacity mill will finish the local work in much less time than the smaller mill, and consequently unless grain is procured from outside sources to keep the mill going all the year, the larger mlil will be closed down for a longer period between seasons than will the smaller mills. This is one of the obstacles in the way of the larger mills. To eliminate this obstacle to a certain extent and give the grain growers a chance to get their flour requirements without undue delay, the Minister of Agriculture for the Province of New Brunswick will recommend to the Government of the Province the advisability of increasing the bonus on fifty-barrel mills to $2000.

When a man intimates to the Department of Agriculture that he is contemplating the erection of a flour mill and would like to receive a bonus, the Department sends a qualified representative to inspect the proposed site anw ascertain the grain growing condiions of the district in which the proposed mill will be located. If he finds that there is a possibility of ample work for the mill without clashing with any other established bonused mill and reports favorably the Minister will grant the bonus on condition that the proposed mill and building be up to certain set specifications and that it be kept insured and operated for a period of at least five years. The insurance policy is made payable to His Majesty the King as represented by the Minister for Agriculture as his interest may appear. The mill is inspected on completion, when, if satisfactory, one half the bonus money is paid. The remainder of the bonus is paid after the mill has completed one year of successful operation.

The encouraging of better and more adequate and expeditious milling facilities as proposed by Mr. Tweeddale will go a long way towards inducing the farmers of the province to grow more grain for bread, more feed for their live stock and retain in the province a great deal of money that otherwise goes to fill the coffers of the other provinces.

LEGISLATION AFFECTING DAIRY FARMERS PLANNED FOR NEAR FUTURE

(Continued from page 167)

able or low producing cows from the dairy herds. The resolution recommended that special effort should be made by all channels of instruction and organization toward the fulfilment of this end.

A resolution was read regarding "Oleomargarine Legislation" that the federal authorities saw fit to temporarily admit the manufacture and sale in the Dominion of Canada of this article. The feeling prevailing in the discussion that followed the reading of the resolution that the order be now rescinded, was that Canada as a young country, that had not reached the limit of its production, did not require the introduction of such articles of food. In the meantime it was having little effect on the butter industry, but it was stated that when oleomargarine manufacturers, after the war, could get the better quality material to make it, which would then be more available, it would come into more direct competition with butter. As a food for adults it might be used as a substitute, but for children it was not considered suitable for growing health.

"Taking Milk Samples," formed a subject of a resolution moved by P. Pallesen and seconded by E. H. Stonehouse. It has for its object the universal and safe method of drawing samples of milk to be tested, so that no occasion for friction or unfair dealing can arise between vendor and municipality in dealing with the quality of milk demanded.

The BEEMAN GARDEN TRACTOR

MAKE twenty acres produce what you formerly grew on twenty-five.

The Beeman Garden Tractor and Walking Engine will help you do it. It makes more intensive production possible by permitting the cultivation of closer-planted rowed crops.

The Beeman is the tractor that is revolutionizing market garden farming—a practical tractor and engine at less than the cost of a good horse and performing the work of two.

The Beeman is a 1½ H.P. Tractor, only 17 inches wide, working 5 hours on one gallon of gasoline—or an engine to operate your farm machinery, developing 4 H.P. and consuming but one gallon of fuel in seven hours.

A boy and a Beeman can do the work of a man and two horses at 30 per cent less cost. A touch of the finger controls every operation of starting and stopping.

Investigate the Beeman Garden Tractor. Price $285.00 F.O.B. Factory.

Write our nearest office today.

The Canadian Fairbanks-Morse Co., Limited

Makers of the famous "Z" Engine

Montreal - Toronto - St. John, N.B. 101

THE ECONOMY OF DAIRY FARMING

The dairy cow is the most economical producer of human food of all our farm animals. No other animal can turn into so much money the great range of animal foods, roughages and concentrates, grown on the average farm. The product of no other farm animal, when sold off the farm, removes so little of the fertilizing constituents or plant food from the soil. She is the only farm animal that every day yields a marketable product within twenty-four hours of the time her food is fed. It has been proven by careful experiments that a cow yielding thirty pounds of average milk per day will in one week produce 26¼ pounds of dry matter, all of which is edible and immediately available for human consumption. In the same time a fattening steer gaining two pounds per day on approximately the same feed, will produce only 10¼ pounds of edible dry matter. It has also been shown that from 100 pounds of digestible matter in the food, that the dairy cow produces 18 pounds of digestible solids suitable for man; the pig 15.8 pounds; poultry, as eggs, 5.1 pounds; as meat, 4.2 pounds; lambs 3.2 pounds; steers, 2.8 pounds, and sheep 2.6 pounds, clearly demonstrating that the dairy cow easily leads all farm animals in economy of feeding operations.

With this great advantage in economy of production, it is quite easy to discern why the dairy cow tends to supplant the meat-bearing animals in regions where land is high priced and population dense. She gives the greatest financial returns from the feeds grown on the farm, and therefore enables the owner to get the necessary addd returns from his high-priced land. Still easier is it to see why the dairy cow has supplanted the meat-bearing animals where land has become impoverished. Here she enables the farmer to get the greatest financial return from what little his land does produce and at the same time returns to the soil practically all the plant food taken out by the feed she eats.

In spite of her great superiority over other animals in the use she makes of her food, there are some factors in the dairy industry that restrain or limit the spread or increase of dairying to the greater exclusion of other lines of live stock production. First in importance is the greater amount of labor entailed. Roughly speaking, it takes seventy-five hours to milk a cow for an ordinary lactation period. This amount of labor has no counterpart in other branches of farming. It is extra work above feeding and other care. It must be done twice a day every day she milks, no matter what conditions of weather, what rush of work, or what social duties prevail. Therefore, as a business, dairying does not appeal to the farmer who can make a reasonable living or income otherwise. Again, there is an enormous bulk of dairy products derived from cows that are not strictly dairy cows. This butter and milk comes from a large number of small herds at the time of the year when cows are fed the cheapest, in spring and summer. These herds are cheaply wintered on the roughest and most unmarketable foods grown, and more expensive labor, the farmer's own family, at those times of the year when labor is at its greatest demand. These herds are the beef herds or general farming herds of the country, and although the contribution of each to the butter market is small the sum total is a very large amoun of butter that has an appreciable effect in keeping down the market price of butterfat, which is in the final analysis the controlling factor in the price of all dairy products.

In the course of history of a new country, such as ours, the growth of dairying is obviously slow. But steady growth is inevitable as according as population increase, lands become more valuable through proximity to great markets or become impoverished through bad cropping systems, and the dairy cow introduces herself as the great stabilizer of lands and peoples, the one animal without whose help the human race could not exist.—O. A. C. Bulletin No. 253.

It may be truthfully said that the dairy industry rests on the science of bacteriology, and that nearly all the methods employed in the production and handling of these products are based on bacteriology principles.

FERTILIZING THE ORCHARD

(Continued from page 169)

If the orchardist is depending upon commercial fertilizers alone and his orchards are unthrifty, it will be advisable for him to apply an additional 100 pounds of nitrate of soda broadcast at the time of seeding down his cover crop. In general it is wise to apply the fertilizers carrying phosphorus and potash to the amount required by the first of June, and, as already stated, 500 pounds acid phosphate, or 600 to 800 pounds slag may be used.

FEEDING THE HUMAN MACHINE

(Continued from page 165)

ble B in lettuce, spinach, in fruit to some extent, and the various leaves and greens that are upon the market. A very large quantity of these articles are not necessary, the main requirement being that our diet is kept varied by the use of fruits, vegetables, and greens.

In making out the best diet for human beings, it is necessary, therefore, to bear in mind that mere chemical analysis is not sufficient. So many calories of protein, so many of carbohydrates, and so many of fats are necessary, it is true, but in addition there must be fat-souable A, and water soluble B. But that is not enough.

Unless there are enough mineral elemnts in the diet, the system cannot thrive. Just three minerals are essential. One of these is calcium, the property that gives hardness to the bone. The other two are sodium and chlorine. Calcium is supplied largely in vegetables and the leaves of plants, and not so liberally in cereals.

Editor's Note—The foregoing from the columns of one of our American exchanges touches a problem Canada is up against, not only now, but in the years to come, as our centres of population become more and more congested.

Farmer and city-man, alike, must combine for the protection and fostering of the dairy industry, and this can not be done by angry recriminations, misunderstandings, and mutual distrust, based on misinformation, just as is at present carried on against the milk producers for the city of St. John.

THE PLOWING CONTEST

The plowing contest which is the gala occasion of the year with our Scotch friends is slowly coming into favor in this country, and the localities where contests have been held are so well pleased with them that they are invariably repeating them every year.

Let us look for a moment at a typical Scotch plowing contest, and see if it isn't something we can copy more universally and profit generally thereby. Imagine a crisp October day, a day typical of our Indian summer days, and by early forenoon the people from all the countryside for miles around begin to gather decked out in holiday attire, for the plowing contest is one of the most important, if not the most important occasion of the year for the farmers.

The magnificent teams of Cyldes are all groomed immaculately and bedecked with roses and ribbons. The leather of the harness glistens, and it is polished over the oil, and the mountings are burnished until they are as bright as mirrors, for prizes are offered for the best groomed teams and the best kept harness. The teams have been trained for days, possibly for weeks, for the event.

The plows are all most carefully sharpened and scoured, and each contestant has tried out his plow and most carefully adjusted it prior to the day of the contest, for he knows that it is impossible to do even a fair job of plowing unless the plow is very carefully set and adjusted to the team, and no adjusting is allowed during the contest.

There is a great deal of friendly rivalry and joshing among contestants and especially among the helpers and the crowd, much inspecting and discussion of plows as to whether there is enough "suck" for this particular land and whether the coulter will cut a clean furrow through the turf, sod being invariably used for plowing contests.

The plowmen, frequently as many as thirty of them, all line up at the ends of their various one-half acre plots and at a signal the contest is on, in a way like a race, yet a very slow one, for the making of the back furrow which consists of two very shallow three cornered furrows turned with their lower corners just meeting, is a most particular job and an art that is not learned in a day or a month. As a matter of fact, before a man can pass as a plowman in Scotland he must serve an apprenticeship at the job. There are cries of "Hold on there, Jock, hold in to the left a wee bit", from the helpers who stand at the end of the furrows and keep a sharp look out for the least bit of a curve in the line of furrow. The helped also takes the plow and team at one end and drives across the end to rest the plowman and give him an opportunity to see tht work of the others. The work is quite tiresome for the plowman walks or rather hops along with one foot in tne furrow anc one up on the land, braced against any swerving of the plow, and his eye never leaves the end of the furrow ahead of him. The result of all this work is a job of plowing that is a sight to see. The farrow is usually about 7 or 8 inches wide, instead of 12 to 14 inches as in this country, by 6 or 7 inches deep. The line of the furrows sticks straight up as square and true as if molded in clay, with not a break from one end to the other, truly the work of a master plowman.

A medal is usually given to the winner and several smaller prizes, commonly cash, are given to the next in rank along with prizes ti the best groimed teams and the best cared for harness.

The good fellowship and friendly rivalry brought out by the plowing contest is something that any community will be better for, and occasions when the farmer can come out and demonstrate his ability as a master workman, for master workman he undoubtedly is, are few and far between.

MAKING BOVINE OUTLAWS

A herd of cattle came to notice recently because of the outlaw character of the whole drove. No ordinary fence would hold them. They would jump, plunge or crawl past any such barrier. Every one of them would need to be blindfolded or wear a poke on the neck or else a chain dangling from the nose in order to feel respect for the usual restraints imposed upon tame cattle. And these cattle were not wild;

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they were merely unruly. They had learned to go wherever they pleased.

Inquiry revealed a history of the case which accounts for this unusual behavior. The cattle had been kept upon a farm where the pastures were perennially overstocked and the grass always short. Wire and hedge fences were neither of them ever in good repair. End posts were not braced and the barb wires were always loose. Hedges were full of holes which were stopped by a mere bluff of small brush which was side-trimmed off the hedge as needed. Whenever the cattle broke out they got a good fill of feed from cornfield, wheatfield or meadow before driven out. Then the fence was repaired barely enough to match the rest of the line in strength, maybe not always so well as that. The consequence was that breaking out was so common an occurrence that the cattle became adepts at it.

Plenty of feed and a strong fence around it make the sure combination for confining stock and preventing the formation of unruly habits. When animals break through a fence the whole line must be made stronger than that spot was before. Last summer when two colts were running at play one of them accidentally jumped over a seven-rail fence located at a gap in the hedge. The owner promptly built it up to ten rails with stakes and a rider besides, so that the whole height was about doubled. He had the right idea. Such a breach of equine manners did not occur again. If the fence had been built up a rail at a time as occasion might suggest, the colt probably would have become a high jumper.

CREAM SEPARATOR MUST STAND LEVEL

In order to get the best results with the separator it must stand perfectly level on a solid foundation. A block of wood about two feet in diameter to which the machine is securely fastened makes a good solid faundation but a block made of concrete is much better. This makes a permanent foundation and is easier to keep clean than wood which has a tendency to become greasy. In molding a block of concrete for this purpose one should not forget to mold in four bolts for fastening the machine. With this solid foundation there is no chance for jar or vibration of the separator, two htings that must not be allowed.

One of the most important items in operating the separator is to run it at a proper rate of speed, that is at the speed indicated on the handle or in the instruction book. A lesser number if revolutions of the crank per minute than that specified on the handle or in the instruction book will cause a los of fat in the skim milk. With a little practice the proper speed and uniformity of motion can soon be learned. There is a characteristic hum to the bowl that is not heard eithed when the speed is too low or too high .

Operating a cream separator by hand is certainly no easy task but if one has a little gasoline engine to run the machine the job of operating is a pleasant one. Small engines are offered at such low prices that one can be afforded by any farmer and the cost of fuel required to keep one busy is so small that it can hardly be considered when we take into consideration the amount of work it will do and the labor it will save.—H. W. J.

WATCH THE CREAM SEPARATOR

The separator should be watched. Be sure that the machine is level and securely fastened to a firm foundation. Remember that the speed of the separator is an important factor in its efficiency. If the crank is turned too slowly an excessive amount of fat will be left in the skim-milk. The milk should not be aloowed to enter the machine until full speed is attained.

A temperature of 90 degrees F. is best for separation. If milk is cold when separated there is too much loss of fat. If the milk becomes cold it may be warmed by placing the can of milk in hot water. It is preferable, however, to separate the milk soon after it is drawn and before it becomes cold.

The separator should be kept clean if the highest efficiency of the machine and the best product is to be obtained. At the end of each separation flush out the bowl by pouring about two quarts of lokewarm water into the supply can. The parts may then be washed with scalding water, after which they should be allowed to dry.

PIN WORMS

My horse shows all symptoms of having worms, and is constantly passing the small pin worms. He licks the walls of the stable, yawns frequently and often has slight colicky pains, when he will lie down and get up, stretch his head out and roll up his upper lip. These spasms are of uncertain duration, sometimes lasting an hour or two, and others only a few minutes. He has an abnormal appetite, eating anything in reach and, if allowed, even his fæces. His bowels always moved frequently and especially at road work, when at times they became quite loose. Have been treating him for worms according to pour directions in The R. N.-Y.; copperas, salt and sulphur; have given him the treatment two weeks with interval of 10 days. I have not seen any large worms, but lots of the pin worms. Now two or three miles or road work make him scour so it is impossible to drive him. Should one keep on repeating the medicine, or is one repetition enough, and if it is effective, should one be able to see the worms when they pass? I am feeding him whole oats, corn stalks and oat straw.

The worms you see are pin worms and inhabit the rectum and are not killed by the medicine you have been giving. Destroy them by injecting into the rectum on three alternate nights a week three or four quarts of soapy warm water and a cupful of tobacco tea made by placing tobacco stems or leaves in boiling water and allowing to stand covered for 12 hours. The salt-sulphur-copperas combination destroys large worms in the intestines, whereupon they are digested and so do not appear in the feces. If the horse is to do well you should feed good hay instead of cornstalks and straw and add wheat bran and ear corn to the ration.

HEAVES

I have a mare eight years old this spring that has recently got the heaves. Can the heaves be cured? Is it advisable to breed a mare with the heoves, R. H. W.

Heaves is incurable when confirmed, as the small air chambers or cells of thelungs break down into large cavities, the walls of which cannot contract sufficinetly to perfectly expel air. The agdominal muscles are brought into play to help expel the air, and this causes the double, bellows-like action of the flanks which is characteristic of the disease. A mare should not be bred when affected with heaves, as the tendency to the disease is considered hereditary. A heaving mare often proves barren. Distress of the disease usually may be relieved by use of a proprietary heave remedy, or by giving Fowler's solution of arsenic twice daily, starting withone-half ounce as a dose and increasing to three such doses daily until no longer required,when the medicine gradually should be discontinued. Feed grass in summer and wet oat straw in winter in preference to hay. Do not work the mare soon after a meal, and do not give any bulky feed at noon when she has to work.

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MILK, ITS COMPOSITION, CARE AND FOOD VALUE

(Continued from page 166)

ly agitated at a proper temperature, the fat globules rapidly pass each other and finally begin to stick together. When a sufficient number have adhered, little granules of butter are formed. The richer the cream and the higher the temperature, the more readily will the fat globules unite. Therefore cream, in order to churn readily, yet not too soon, should contain about 30% fat and be at a temperature of, from 52 to 56 degrees Fah. Fat only of the milk solids, is required to make butter. 100 lbs. of milk fat will produce about 116 lbs. of butter. The extra 16 lbs. is made up of water, sale and casein and is known as the "over-run."

2nd. Casein—About 2.5 lbs. in 100 lbs. of milk. Casein or curd when dried is a grayish white powder. Casein is present in milk partly in solution an dpartly in suspension; it is coagulated or thickened by rennet, dilute acids and by the natural lactic acid which is formed when the milk is becoming sour. In the cheese making process, Casein is the substance, which, when thickened by rennet, imprisons and holds the little fat globules and some of the water, allowing a few of the fat globules and the remainder of the water (in which is held most of the other milk solids) to escape when the curd is cut with the curd knives. Casein and fat are the two chief solids of milk from which cheese is made. In fact, without casein it would be impossible to make cheddar cheese.

3rd. Sugar—About 5 lbs. contained in 100 lbs. of milk. It is present in the milk in solution but when dried looks much similar to cane sugar but is not so sweet in taste. It is a very important solid and is the material which is changed by the action of little plants known as Bacteria or Germs, from a sugar to an acid and the milk becomes sour. Milk would not sour were it not for the sugar and the action of those little plants, which latter get into the milk after it is drawn and change the sugar to lactic acid. Milk sugar is the chief solid which is retained in the whey in the process of cheesemaking and is one of the valuable constituents remaining in the whey as a food for animals. The more of the sugar which is preserved instead of allowing it to be changed to lactic acid, the more valuable is the whey for feeding, especially to young animals.

4th. Albumin—About .7 lbs. in 100 lbs. of milk. When dried it is similar to the dried white of an egg. Milk Albumin is not coagulated by rennet or acids but b yheat. When cheese is made, the albumin passes out in the whey and is another valuable solid. The albumin in the whey coagulates at a temperature of about 160 degrees Fah. therefore, to properly pasteurize cheese factory whey, a temperature of about 155 degrees Fah. is sufficient for good results, provided this temperature is maintained for sometime. (Cheese factory whey is pasteurized for the purpose of killing disease germs, keeping the fat evenly distributed, to preserve the sugar as to prevent as far as possible the little organisms known as Bacteria, from changing the sugar to an acid, thus keeping the whey sweet until fed).

5th. Ash—About .7 lbs. in 100 lbs. of milk. It is the mineral matter or that portion remaining after the solids are burned. It is a grayish white color and is made up of a number of different minerals.

Changes which Occurs in Milk

After being drawn from the cow, milk which is handled under average conditions undergoes certain physical and chemical changes. Bacteriological research has shown that there are little microscopical plants known as micro-organisms, bacteria or germs, which are present almost everywhere in nature, in the soil, air, on plants, trees, fruits and sometimes in water. These little plants cannot be seen with the naked eye but with a microscope of high power many of them may be observed and studied. Millions of these little plants may be present in a single drop of milk. They multiply very rapidly if they have the proper media or material in which to grow which contains the food they require, such as the sugar of milk. Most of these little plants divide every twenty minutes, making two. Several millions may be in a few hours the product of a single germ. Other favorable conditions required for the growth of bacteria are moisture and proper temperature. These little plants get into the milk in many ways. When the milk is first drawn from the cow it is almost free from organisms. Germs are always present in the stable dust, on bits of straw, hay, cow manure, flies, hairs, the teats and udder, in the milking utensils (if they have not been thoroughly sterilized with boiling water), on the milker's hands, clothing, and in fact almost everywhere. Every precaution should be taken to prevent germs from entering the milk from any of the sources already mentioned, but with the best of care it is difficult to keep out of the milk all bacteria. When it is realized the important role these organisms play in the decomposition and the souring of milk, it can be readily seen how very important it is to keep out of the milk as many as possible of these germs. If care is exercised in excluding from the milk those substances which carry bacteria, then to a great extend is lessened the number of germs in the milk and the smaller the number present, the longer will the milk keep. So far as the bacteria relating to dairying are concerned, they may be divided into two classes, "good" and "bad" bacteria. The good bacteria are those which have to do with changing the milk sugar into lactic acid, producing in milk and its products a certain pleasant taste and flavor. These bacteria are important in nearly all dairy operations, as it would be difficult to bring about the fermentations necessary in the manufacturing of cheese and the ripening of cream, were it not for the help of these little lactic acid producing organisms. Although bacteria are a help in producing proper fermentations in milk, yet if not controlled, they become masters of the situation and the milk rapidly begins to sour and becomes unfit for many purposes for which it was intended. The "bad" bacteria are those which give rise to putrid decomposition, which is shown by odors and taints in the milk and sometimes a "gassy" condition of the curd. Moreover, many of these bad bacteria pass into the products made from the milk, such as cheese and butter and continue to produce abnormal changes, resulting in butter which rapidly goes "off" in flavor and becomes rancid and cheese, which, instead of developing the clean "nutty" flavor so much desired, develops offensive flavors, odors and tastes.

Care of the Milk

Although all dirt must be kept out of the milk yet in spite of many precautions, a number of germs get in, which soon begin to cause changes in the milk and something must be done to control these organisms. It is known that there are certain temperatures at which most of these little plants will grow to the best advantage; ie—between 70 and 100 degrees Fah. If the milk is left for any length of time without lowering the temperature (cooling) it is being handled in a way (so far as temperature is concerned) for these little plants to rapidly reproduce themselves. It will not, therefore, be long before they have increased in numbers sufficient to change a portion of the sugar to lactic acid and the milk becomes sour. If through careless methods, dirt, such as cow's hairs, dust, bits of straw, hay, cow manure, flies or any such substances are allowed to get into the milk, the inconceivable number of "bad" bacteria conveyed to the milk in this way, may act in such a way upon the milk constituents that the milk becomes tainted and perhaps gassy; putrifaction begins, bad odors arise and the milk becomes unfit for use.

It is known that low temperature (cold) although not entirely killing the little plants which produce the undesirable changes in milk, yet helps to prevent them from increasing rapidly. If there are less of them in the milk, the milk will remain longer in good condition. Having kept the dirt out of the milk and if the temperature is lowered immediately the milk is drawn from the cow, by placing the cans containing the milk in a tank of cold water, bringing down the temperature rapidly to 65 degrees, if the milk is to be sent to the cheese factory (with the addition of ice to the water, to 45 degrees, if the milk is to be used for city consumption and 55 degrees if the cream is to be sent to the creamery) the milk or cream will then be at a temperature which will prevent to a great extent any undesirable changes from taking place for a reasonable time.

Food Flavors

Certain food flavors may be noticed in milk caused from high flavored foods which the cow may eat. Moreover, the milk may become contaminated or spoiled if exposed to stable or other bad odors, because it is well known that milk will quickly absorb odors.

Pasteurization

Milk may become infected with disease producing organisms such as tuberculosis (from cows suffering with this disease or from handlers of milk) diphtheria, typhoid, etc., may be transmitted through milk. Persons suffering from or having been exposed to such diseases should not handle milk.

As a measure of safety where milk is consumed which comes from an unknown source, pasteurization has been adopted. This method as practiced for city milk supply means heating the milk to a temperature of from 145 to 152 degrees Fah. holding it at that temperature for 20 or 30 minutes, cooling rapidly to 45 degrees Fah. Pasteur a noted French scientist originated this method.

Care of Milk in the Home

Milk which has been properly handled, may be delivered to consumers and become contaminated after it is taken into the home, by exposure to bad odors or by being put into unclean or dusty utensils. If the temperature of the milk is not kept low enough after it is delivered to the consumer, bacterial growth will be rapid and the milk will quickly sour or go "off" flavor.

The three chief causes for the changes which milk undergoes are:

1st—Little plants which are present everywhere in nature, get into the milk, increase and produce certain changes. The change known as "souring" may be prevented for sometime by immediately cooling the milk to a low temperature and holding it there. The changes known as "gassy", tainted, decomposed, are only prevented by keeping the dirt out of the milk, although cooling to low temperature assists in preventing these changes.

2nd.—Food which is highly flavored, such as rag weed, leaks, or turnips will produce food flavors in milk. Such foods should not be fed to milch cows.

3rd—The milk may absorb bad odors and should not be exposed to such odors.

4th—The dairy utensils may not be properly washed. All such utensils should be thoroughly washed in luke warm water and then scalded with boiling water or live steam. In any case the milk should be cooled to a low temperature as soon as it is drawn from the cow.

From the foregoing it will be seen that to produce wholesome milk, the health of the cows is important, cleanliness should be observed at all times, all substances likely to carry bacteria should be kept out of the milk, pure water only should be allowed the cows, no foods fed which will give the milk a flavor, the milk should not be left in impure air and it should be cooled immediately to a low temperature as soon as it is drawn from the cow, kept cold during transit from producer ot consumer.

To keep milk in good condition after it is delivered to the home, it must be kept cold until consumed.

The Milk Sediment Test

The quantity of sediment in milk is an indication of the sanitary condition of the milk.

Liquid as well as solid impurities may be present, but if [illegible] present the necessity of pasteurizing the milk form such contamination is at once shown.

The [illegible] tends to appreciate the importance of milk as a food and careless methods in handling may be responsible for the contamination.

The open top milk pail affords opportunity for collecting dirt during the imlking process; this is especially true where no attempt is made to keep the cows clean.

[illegible] are not necessary in the production of milk free from sediment. The open top milk pail together with reasonable care will enable any milk producer to produce milk almost free from sediment.

The sediment test is rapid and simple. It furnishes undisputable evidence of the amount of sediment in each lot of milk. It accumulates in one spot where it may be seen, the amount of sediment contained in one pint of milk, and thus enables the operator to judge approximately, from the appearance of the "disk" the total sediment in the can of milk.

If the milk has not been sufficiently cooled this condition will usually be indicated by the appearance of little clots of dried cream on the "disk". This means loss of cheesemaking material.

Used in connection with the curd test, it makes a combination more effective than the curd test alone.

It places the responsibility on the individual producer and leaves little chance for argument on his part.

Producers with few exceptions take a reasonable view of the test as it is something they can see and understand.

The test not only indicates the better methods of the careful producer, but reveals the shortcomings of the careless one.

Good judgment must be exercised by the operator in making use of the test, offensive comments with-held, and an effort made to get the producer to understand that all that is intended is to point out the facts with a desire of securing his co-operation.

The test is made by straining a pint or about one pound of milk through a cotton disk 1¼ in diameter which is attached to the bottom of the tester. The amount of sediment that collects on the "disk" shows the amount of dirt contained in the pint of milk. The rubber bulb attached to the tightly closed cover is for the purpose of forcing the milk through the cotton filter. After one sample of milk has passed through the tester the cotton disk is removed and placed on a card and a new disk is placed on the wire gauze screen of the tester and another sample of milk put through. The disk may be dried and filed away for reference.

Food Value of Milk

Considering milk from the standpoint of a food, it is found that it contains all the substances necessary to sustain life. When milk is taken into the stomach, the water supplies some of the body fluids. The fat and sugar are the heat and energy producing constitutents of the milk, that is, these two substances when burned in the body keep up the temperature and [illegible] energy. The casein and albumin, the proteids or nitrogenous substances of the milk or the portion of [illegible]—solids which build up the [illegible] muscles. The mineral matter [illegible] up the bones, nails, teeth,

c. Therefore, for the young animal cluding the young child, milk may called a perfect food. This, how- er, is true in the case of the adult ly to a limited extent, because the ult in order to get a sufficient a- ount of food to sustain life for any eat length of time would be forced take into the stomach too much uid. At the same time milk is a irly balanced food rather than mere- a drink. Sweet skimmed milk con- ins the casein, albumin, sugar, ash, d about .1% fat. Sweet whey con- ins the albumin, sugar, ash, and out .25% fat.

Conclusions

1.—The world has never regarded ilk as a real and staple food except r abies and invalids; whereas it is e cheapest of all animal foods and n be consumed in large quantities th directly and indirectly as milk, tter, cheese, cream, buttermilk, im milk, ice ceram, condensed milk, ilk powder. People little realize the oportion of their diet that actually mes from the cow, but this realiza- on is certain to deepen as the war es on.

2—The Indispensability of Milk— ot only will the food value of milk come better understood but its indis- nsability will become better estab- shed as the role of the "vitamines" mes to be better understood. It is t economic to restrict the use of ilk while indulging freely in substi- tes that are not only more costly t less nutritious than the real art- le.

3—The Good Cow—With the in- ease of milk production the value of od cows will be made to stand out never before. With cheap food we il her as a heavy producer but with stly food she will be recognized as economic producer.

4—Milk is nourishing—It builds up e body, keeps it in repair, warm, fur- shes it with energy, contains all the quired elements for growth and aintenance. It is an essential art- le of food. It gratifies the palate, tisfies thirst and hunger and pro- ices, if pure, no ill effects.

One quart of milk at 10c is equal in od value to about 2 pounds of chick- n ocsting 70c, to ¾ pounds of beef eak costing 23c; to 4/5 pounds of rk chops costing 28c.

A glass of milk is claimed to be ual in food value to:

2 eggs,
A large serving of lean meat,
2 moderate sized potatoes,
5 tablespoons full of cooked cereal,
3 tablespoons full of boiled rice or 2 ices of bread.

1 quart of milk contains about 5 nces of solids or
1.5 ounces fat
1. ounces casein (protein)
.28 ounces albumin (protein)
2. ounces sugar (carbohydrate).
.28 ounces mineral or ash.

5—Thousands of children, through e work of the children's Welfare ocieties in the city of Chicago, have en weighed mentally and physically ho have been given the proper a- ount of milk and they have been mpared wtih children, weighed men- lly and physically, who have not re- ived this nutriment and they are own to be far in advance of those ho have not received the proper nount of milk.

6—Science has shown that growing ildren not only require the usual pro- in and carbohydrate foods but that oper nutritious substances must be pplied that their bones may grow d that they must have that unknown otective "something" which is secur- d only in the mother's breast milk or the milk of the dairy cow.

Dr. E. V. McCollum, of John Hop- ns University,, one of the most fam- us scientists on the Continent, has ong with others conducted experi- ents during recent years which ap- ear to prove conclusively that milk d its products contain a vital sub- ance necessary for the growth and evelopment of animals and which is esent to the same degree in few other foods. Experiments with white rats and other animals show conclusively that unless this vital substance which he terms "vitamines" or "Fat Soluble A" and "Water soluble B" is present in the food growth and development is arrested. Quoting from a recent statement he says: "I wish to point out the fact, which rests upon sound experimental evidence that milk is an indispensable article of the diet of any people who wish to achieve; that milk production cannot rest upon a philanthropic basis but must be a paying industry. The public must allow the price of milk to advance to the point where the industry is profitable to the producer. Milk is worth more than its energy value or than its protein content would indicate. It is the great factor of safety in making good the deficiencies of the grains which form and must continue to form the principal source of energy in our diet. Without the continued use of milk, not only for the feeding of our children but in liberal amounts in cookery, we cannot as a nation maintain the position as a world power to which we have arisen. The keeping of dairy animals was the greatest factor in the history of the development of man from a state of barbarism."

Trade Names for Milk

1—MARKET—Intended for direct consumption.

2—RAW—Not treated by heating.

3—PASTEURIZED—Heated to a temperature of 145 degrees to 152 degrees and held at that temperature for 20 to 30 minutes. (May be heated to 180 degrees for 1 minute). Cooled immediately to 45 degrees. The former is known as the "holding method" and the latter the "Flash system of pasteurization."

4—STERILIZED—Heated to a temperature above boiling point. Repeated several times during intervals until "spores" are killed.

5—CERTIFIED—Produced under exceptional sanitary conditions; cows tuberculin tested; bacterial count guaranteed 5 to 10 thousand per c. c. free from disease producing organisms; not pasteurized or sterilized; cooled to 45 degrees immediately after milking; contains 12 to 13% total solids of which 3½% is milk fat; milkers inspected monthly and milk handled under "milk commissions."

6—STANDARDIZED—Fat removed or added as required to bring milk to uniform standard of fat and total solids.

7—CLARIFIED—Passed through cream separator or special clarifier. Dirt adhers to side of bowl.

8—HOMOGENIZED—Forced by heavy pressure through machine called a Homogenizer. Opening through which milk passes very small. Milk passes through discs and strikes "agate" face when the fat globules are broken up so fine that they will not rise. Milk has appearance of being richer than it really is. Sugar usually carmelized by high temperature used if milk is sterilized.

9—MODIFIED—Fat increased or reduced if necessary. Sugar increased. Protein reduced or peptonized.

10—EMULSIFIED—Passed through machine which will mix skim milk powder, saltless butter and water, making a milk containing same proportion of constituents as before previous separation.

11—CONDENSED—Water content lowered by heating in vacuum. Sugar added. In some cases sugar not added.

12—POWDERED—All the water driven off by spraying milk into hot airchamber or passing milk over hot rolls.

13—EVAPORATED—First condensed, then usually homogenized, canned and sterilized.

14—SANITARY—Somewhat indefinite term. Sometimes applied by dealers for advertising purposes while the milk may be produced under insanitary conditions. The term "hygienic" is similarly abused.

LOOK FOR W-S S THIS SIGN

Canadian Government

War-Savings Stamps

THE Canadian Government will pay $5.00 each for War-Savings Stamps you own on January 1st, 1924. You can buy these stamps until January 31st, 1919, for $4.00; the purchase price then increases one cent each month.

Buy W.-S. S. at Money-Order Post Offices, Banks, and wherever you see the above sign displayed. Place your stamps on the Certificate provided.

$5.00 for $4.00

THE CERTIFICATE

The Certificate is a pocket sized folder containing 10 spaces upon which to affix W.-S. S. It costs you nothing, and as soon as you have filled one, you are entitled to another. Fill in your name and address in spaces provided.

REGISTRATION AGAINST LOSS

A certificate with one or more W.-S. S. thereon will be registered for you without charge at any Money-Order Post Office. This protects the owner in case such certificate is lost, stolen or destroyed, when on application at the Post Office where certificate was registered, your money will be refunded.

SURRENDER VALUE

If circumstances compel you to realize on your investment, your money is available. The cash surrender value of the stamps at various dates will be found on the back of the certificate. It is very desirable that War-Savings Stamps should be purchased regularly.

THE THRIFT STAMP

In order to make it easier to acquire W.-S. S., you can buy THRIFT Stamps of the value of 25 cents each. These do not earn interest, but 16 of them affixed to a Thrift Card are exchangeable for a W.-S. S. Every man, woman and child should be saving for stamps, as a personal as well as a patriotic duty.

$5.00 for $4.00

12

COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and breeders, Clydesdales, Dairy Shorthorns aed Border Leicester Sheep. Present offerings: 1 imported stallion, several young bulls, six to fifteen months old also a number of ewe and ram lambs for fall delivery.

G. C. Cossar, Prop. — J. Meiklejohn, Agent.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls, ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. S. Bloomfield Farm

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm

OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired by Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

Clearing Sale of Shorthorn Cattle

Am offering for sale my herd of pure bred registered Shorthorn cattle. These catt e range in age from 7 years to 3 years, or a little less, with one bull calf two weeks old, and are all fine in type and color.

I have also exceptionally good grade cattle of various ages for sale. All will be sold at a reasonable price and offer an unusual opportunity to anyone desiring to start a herd of choice stock or to renew an old herd.

J. E. HETHERINGTON, - Codys, N. B.

GUERNSEY BULLS!

I offer for immediate sale, the Guernsey Bull, Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

FOR SALE !

One pair two year old Mammoth Bronze Turkeys, $8.00 (eight dollars.) One fine Guernsey Bull Calf, three months old. This animal is well grown, from a dam with a fine milking record.

SARAH E. MOSES SMITH,
WOODWARDS COVE, - - N. B.

FOR SALE
R. O. P. HOLSTEINS.

Two bulls ready for service, and several bull calves. The right type and prices right.

For description and price write,

D. R. NICHOLSON,
"Riverview Farm", Coxheath, N. S.

FOR SALE!

Present offering, one Bull Calf.

P. R. L. FAIRWEATHER,
Rothesay - - - N. B.

Butter Parchment at Farmer Office

Lawndale Stock Farm
Jerseys and Shorthorns (Pure Bred)

JERSEYS:—

One registered Bull Calf, solid colour, (fawn) dropped in October, 1918. Out of a R. O. M. dam, by a "Golden Fern's Lad" sire.

Our latest importation consists of a young cow and yearling heifer, direct from the Island of Jersey.

SHORTHORNS:—

One registered Bull Calf, red, little white, dropped in March, 1918. He is large, in splendid condition, and out of a fine milking dam.

One or two heifer calves, red, little white, dropped in the summer of 1918, out of good milking dams; all three of the aforementioned calves are sired by the best son of "Stately Monarch", Champion in three Provincial Shows.

Our latest importation is a new Herd Bull, direct from the Milking Shorthorn herd of Lord Rothschild, Tring Park, England.

I. M. LOVITT, M.D.,
Yarmouth North, - Nova Scotia

Maple Green Farm Holsteins

Just now we are offering some fresh calv d cows and some due to freshen shortly, also yearling heifers and heifer calves, all with official records or from official record dams. Remember this is the only herd in Eastern Canada which owns two Jr. 3 year olds with official records of 25.05 and 26.54 lbs. butter in 7 days.

Herd sires in service, "Maple Grove Mercena Mercedes," No. 11727, the sire of our 26.54 lb. Jr. 3 year old and who so far has not a tested daughter testing under 4%. Our Jr. herd sire, "Homestead Hengerweld Rooker," No. 20652, three-quarter brother to our 25.05 lb. Jr 3 year old.

For particulars write

R. L. HICKS
Dalhousie Jct., - - N. B.

ROSEWARNE
S.C. White Leghorns

I am now booking orders for baby chicks and hatching eggs from my well known bred-to-lay strain. Chicks will be very scarce this spring, and there will be a wild scramble later on for supplies, so get your order in early and pick your date.

My cockerels and pullets, out of same matings as day-old chicks were sold from last season, swept the board at Halifax.

Send for prices and mating list.

ERNEST CRAZE
Port Williams, - - N. S.

GLENRANE STOCK FARM

We are offering some very fine pure bred registered calves from 2 weeks to 8 months old These calves are sired by "Homestead Hengerweld Rooker" ¾ brother to a 26 lb. jr. 3 yr. old. They will be sold reasonably if taken at once. We also have several litters of very fine York pigs.

ROBERT C. HICKS,
West Bathurst, - - - N. B.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

FOR SALE !

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st. 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and 1st in grade cow, competing against all breeds at our late show at Charlottetown. with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

A number of Young Bulls fit for service, out of Record of Merit cows. This herd has been under test for a number of years. Herd now headed by "Star of Fern Brook" and by "Star Glen Cairn", brother of the noted Jean Armour.

J. FRANK ROACH, Proprietor,
Phone 111. Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.

We have young bulls for sale whose two nearest dams (both Canadian champions) average as high as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows; and one ready for service from a 41-lb. sire and an 18,000-lb two-year-old dam. Send for our BOOK OF BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT.

BELLEVUE STOCK FARM
Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, Hammond River, N. B.

HOLSTEIN CATTLE AND YORKSHIRE SWINE
WM. S. HARDING, PROP.

We rae all sold out of last years crop of calves. We are now offering some young bull calves sired by Sir Foforit Schuiling. Also a fine litter of young Yorkshire pigs.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere.

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

We have sold 13 head in the last few weeks but there are some dandy good ones left yet. Special offering—2 heifer calves and several bull calves, sired by Prince Colantha's Canary B. whose four nearest dams average 32.84 lbs. butter in 7 days; 105 lbs. milk in one day. These are beauties. A couple of yearlings and two-year-old heifers, bred to Prince, due in the fall. Several young cows and heifers milking, due to calve from August to December. We have a couple of bull calves fit to head the best herds in the provinces. Come and see them. We would be Pleased to meet you at Truro if notified.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

BULL'S CREEK FARM
R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lbs. butter each in seven days. These cows have in turn been bred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkable combination of breeding and will sell a heifer calf or two. Get your orders in quick, they won't be here long.

J. H. STOCKTON, BULL'S CREEK FARM. WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

Registered Jersey Heifer

We offer for sale the registered Jersey Heifer, "Pride of Rose Bank," 3 years old, milking sired by Foxhall's St. John O'Dreamwold, whose dam gave over 10,000 lbs. milk in a year. Also Peerless Incubator, Barred Rock and White Leghorn Cocks and Cockerels, which would exchange for Barred Rock Hens.

ORCHARD HILL FARM
Brown's Flats - N. B.

Five Ayrshire Bulls for Sale !

From good milking strain. All fit for service.

Prescott Blanchard,
Truro, - Nova Scotia

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

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Present and Future Live Stock Activities in New Brunswick

By T. G. Hetherington, B. S. A., Live Stock Superintenent

A summary of the general conditions as they exist in New Brunswick is before the outside reader can fully appreciate the work of the Department of Agriculture in the Province.

This province has never been seriously considered by the outside world as a live stock country, and while it is very true that the province's past performance along the line of live stock production has not been very creditable, yet this does not signify that the possibilities for stock production do not exist. Natural conditions are favorable for a wide expansion, but many conflicting factors have prevented the fulfillment of this possible growth. These might be enumerated as follows:—

(1). The lumber industry. The farmers farm in the summer and lumber in the winter.

(2) Specializing in potatoes, with slight attention to live stock. This practice is general in several of the best agricultural counties of the province.

(3) Extremely poor facilities for marketing stock in any quantity. So far as the farmer is concerned, it is practically a retail trade.

(4) Lack of application of the value of the pure bred sire, i. e., the scrub bull, the scrub hog, the scrub ram and the scrub stallion are all very much in evidence. Farmers are only just beginning to appreciate the value of grading up the farm stock.

(5) A considerable portion of the hay crop is exported.

Suffering from these handicaps it is not particularly strange that advancement has been slow. The country drovers while providing practically the sole outlet for live stock and live stock products, have been a serious hindrance to the promotion of the industry. For instance, their motto has been to get the stock as cheaply as possible, often doubling their money on a single turn-over. This policy, followed up year after year, has led to a general decline in the production of meat and mutton. This narrow-minded policy on the part of the drovers has almost entirely killed the sheep industry. ,

The scrub sire plays a big part in the general scheme of things. The too general use of the scrub has prevented provincial breeders from widening and expanding their business; as a result, the sale of pure bred stock has been slow and at prices scarcely above meat quotations. This has reacted on the quality of the stock bred.

DEPARTMENTAL ACTIVITIES

Sheep

It is generally conceded that New Brunswick is better able, due to natural conditions, to compete with other countries in sheep production than she is in the production of any other class of stock. Consequently this branch has been emphasized. For two years large importations of pure bred rams have been made by the Provincial Department of Agriculture; likewise a considerable number of pure bred ewes and grade lambs.

At the 1917-18 Session of the Legislature a credit scheme for the purchase of sheep was formulated. This provided the machinery so that farmers could purchase twenty sheep and one pure bred ram by paying one-third cash and giving a note for one year at six per cent interest for the balance. This legislation has been a boon to the sheep industry, and along with the departmental propoganda, has given the industry an impetus that we think will tide it over the period of lower prices that are predicted.

In 1917 about fifty pure bred rams were imported for the farmers of the province. The 1918 importation was over three times as large and will have a corresponding effect on the quality of lambs produced another year. The Federal Department of Agriculture has assisted very materially through its policy of paying freights on car lots from place to place, on stock intended for breeding purposes. Likewise, the Federal War Measures Act, for assisting in the purchase of rams, has enabled farmers to secure real high class sires at a reasonable price. Practically all of the rams imported this year from Prince Edward Island were exhibited and winners at the Charlottetown Fair. Forty-nine rams were imported from Ontario and were an unusually high-class lot. The importation of nineteen Cheviot ewes and rams from the State of Maine will provide a foundation stock of this popular and hardy breed for the province.

Co-operative marketing of wool was generally introduced in 1918 and has resulted in the wool growers receiving from ten to fifteen cents per pound more than otherwise would have been the case. This work will be more general next year.

Th eDepartment's plans for the future in relation to the encouragement of the sheep industry are not fully outlined. This winter all of the stock, grade and pure bred, distributed by the Department, will be gone over and treated for ticks and lice; likewise all of the lambs will be docked. In the spring a series of dipping, docking, castrating and shearing demonstrations will be begun. The co-operative marketing of wool will be featured more than ever. In regard to the distribution of stock next year, no fixed policy has as yet been decided upon. However, it is assumed that this year's activities will have created an interest which will cause a steady increase in the grade sheep population. and it is believed that the demand for pure bred rams will be such that little, if any, attention can be given to the distribution of grade stock. Finally, an attempt will be made to discourage the breeding of ewe lambs which is generally practised.

In conclusion, the big darwback—poor facilities for marketing—still exists. The creation of a central abattoir for the Maritime Provinces has been discussed and will possibly materialize. Future developments depens upon the establishment of a central, subsidized abattoir.

Beef and Dairy Cattle

The area suitable for beef production, from a marketing point of view, is much greater than that for dairying. The creation of central co-operative creameries is acting as an incentive to the dairy business.

In the spring of 1918 a Farmers' Co-operative Creamery was established at Moncton and has been a success from the start. Further effort along this line will foster the industry and at the same time will help towards increased production per cow and towards the use of better sires.

The beef trade is local in character, the major portion of the product is utilized by the lumber camps and saw mills. The quality is not what it should be, this having a corresponding effect on the price received. The production of beef is on the increase. Both the dairy and bef interests suffer due to the fact that concentrates are not grown on the farm, likewise it has been clearly demonstrated that corn silage is not a dependable crop.

The Department's activities towards th production of better beef and dairy cattle thus far has been limited to the bonusing of pure bred bulls and the importation of herd sires for the breeders. The system of bonusing pure bred bulls is conducted through the medium of the Agricultural Societies of which thre are upwards of one hundred and seventy-five in the Province. An initial bonus of 20% of the purchase price is granted and succeeding bonuses of 10% of the purchase price for each year the bull is kept by the Society. I feel that this system is faulty, not obtaining the desired improvement and contemplate the fixing of a minimum purchase price and very strict inspection before purchase as well as rigid supervision after purchase. Until this can be done real progress must be slow.

Breeders' consignment sales will be encouraged to the fullest extent. This year the first breeders' consignment sale was held at Fredericton with fairly good results.

Horses

The horse industry has probably received less attention in the past than its importance warrants. Hundreds of carloads of draft horses are imported annually for use in the lumber woods and in towns and cities. The quality of the imported stock has been inferior, Eastern buyers bringing in from the west the low priced stock. Better horses could be produced right at home and a good market is at hand providing the importation of cull stuff can be controlled. This, in a measure, accounts for the backwardness of the industry in the Province.

At the 1917-18 Session of the Legislature a Stallion Inspection and Registration Act was put in force, practically giving the Department control of this phase of the work. Year by year the scrub and inferior pure breds will be eliminated. The yearly inspection gradually becomes more severe. This winter special attention will be given to the interests fo the horse men. It is our purpose to organize a number of Stallion Clubs and to take advantage, in so far as possible, of the Federal Department's assistance in this respect.

Swine

Pork production in New Brunswick as a side-line is not very general. Little has been done in the past along the line of bacon production, due to the lack of a market that demanded this class of product. Farmers depend on the lumber camps as an outlet. This trade demands an extremely fat type of hog.

The Department has established Boys Breeders' Clubs in all the counties of the Province. The boys are provided with a pure bred sow each and one member of the Club is provided with a boar. Improvement is expected from this work. This year about twenty Clubs were organized and the first series of fall pig fairs was held. The interest shown in this movement both by the boys and the parents augurs well for the future of the swine breeding business. In all about two hundred Club bred sows were distributed this year. The financing of these Clubs was looked after by well-to-do citizens of the Province, interested in the development of livestock as well as in the future farmers of the country.

Another reason why the swine industry has not made the advancement it should have, is that the system of pen feeding has been practiced almost exclusively. This year the Department undertook to establish demonstration pig pastures in representative districts of the Province. About fifty of these demonstration plots were established, featuring standard pasture mixtures and in the majority of cases the farmers were well pleased with the experiment. The seed was provided, likewise the necessary fenc-

(Continued on page 203)

The Maritime Seed Fair at Summerside

After a lapse of two years, owing to war-time conditions, the Maritime Seed Fair, annually held at Amherst, N. S., under the auspices of the Maritime Stock Breeders' Association was held in Summerside, P. E. I., on December 11th, 12th and 13th.

The fair was held in Summerside as the Winter Fair buildings are still under the control of the military authorities.

Rev. Dr. P. C. Gauthier was prime mover for a Maritime Seed Fair in 1918. He secured the co-operation of interested officials of the departments of Agriculture of the three provinces at a joint meeting held in the city of Moncton several months ago. The various provinces were anxious to make a good showing of the excellent grains abundantly produced last season. A goodly number of entries were secured but not a few exhibitors as well as the fair management were disappointed by the non-arrival of many of the exhibits in time for the judging, being unnecessarily delayed in transit. The goods forwarded by express arrived in nearly every case in good season, but a portion of the exhibits shipped by freight did not fare so well. This was indeed disappointing to exhibitors who had taken particular pains in preparing their exhibits with a view to a strong effort to beat Island seed grain growers at their own game.

Commenting on the attendance "The Island Farmer" says:—"If Summerside is again to be honored as the place at which to hold next winter's Maritime Seed Fair, it is to be hoped that the sister provinces will allow the fact to be known, when the time comes, and also that more of those interested in good seed will deign to come and see the exhibits, which this year probably constituted, so far as quality is concerned, the finest showing of seeds ever exhibited in Canada. Great preparations were made to accommodate the visitors from Nova Scotia and New Brunswick, who did not come, the visitors from abroad being a mere handful and attending for the most part in an official capacity. There are, of course, still the old war and the old flu, the unpropitious season of the year and some other old excuses to offer; but the fact remains that the attendance was very much poorer, in point of numbers, than it should have been. Some of our country friends were heard to pass some stringent remarks, also, regarding the apparent apathy of our citizens; and we cannot help admitting that such strictures were in a measure justified by the facts. It was, for example, very noticeable that hardly any residents of Summerside attended the public meeting, which was a feature of the Fair and which in other years, when our Seed Fair was only a provincial affair, drew a full house, with some color and vim added to it by the presence of an exceptionally large sprinkling of ladies. This year, so far as we could see, there was only one lady in the audience, and, although it is ungallant to say so, she came in late and sat at the back of the hall as though intruding. In other years we have seen a lot of men standing, because their (or somebody else's) better halves showed such an interest in the proceedings. Now, a sermon to what before the war was considered by some to be the weaker sex is the last thing we ever expected to preach in these columns; but now that our women are going to have the vote and all that they must look to their laurels and manifest a keener interest in the affairs of state.

In general all the exhibits were of a very high order of merit. In quality, in freedom from weed seeds and mixtures of other varieties, and in indications of vitality and vigor, the exhibits at this Fair surpassed those at any previous Seed Fair held in the Maritime Provinces. Some of the exhibits of oats and barley were slightly off color, but this was due to the weather conditions prevailing over the harvest period and did not affect the value of the seed shown for seeding purposes. The exhibits were sent from many different sections of New Brunswick, Nova Scotia and Prince Edward Island and very worthily represented the seed producing possibilities of these provinces.

In the class for members of the Canadian Seed Growers' Association, there were large entries in the oat and wheat sections. In barley and potatoes the number of entries was small. This class was judged by Mr. L. H. Newman, secretary of the Canadian Seed Growers' Association, Ottawa, and Mr. H. S. Cunningham, Truro, N. S. The wheat was of good quality, but a few of the samples contained a small number of weed seeds. These weed seeds could be cleaned out quite easily by a little more care in preparation. Only one or two entries showed mixture with other varieties. The oats were well cleaned, plump, and gave evidence of strong vigor and vitality. More care in grading would have improved some of the samples. The barley was excellent. Potatoes well selected, smooth and free from disease.

The exhibits in the New Brunswick Field Crops class were small, as some of the entries were delayed on the road and did not arrive in time for the Fair. Messrs. J. L. Tennant, Summerside, and T. C. Munn, Inverness, N. S., judged this class. The first prize exhibit in oats was outstanding in quality, very uniform and well graded The wheat was good, the first and second prize samples being very clean and pure. One or two of the exhibits of potatoes were a little rough.

The Nova Scotia Field Crops class was judged by Messrs. O. C. Hicks, Fredericton, N. B., and Gordon McMillan, Cornwall, P. E. I. In wheat there were eleven entries and several samples tested over 62 pounds to the bushel. All the exhibits were of good quality, well filled and graded. With the exception of the first prize sample, the oats were only of medium quality. The potato exhibit was small.

Messrs. T. C. Munn and E. M. Taylor, Fredericton, N. B., judged the Prince Edward Island Field Crops class. There were fourteen samples of wheat representing four varieties. The competition was close and the exhibits showed ogod fair quality generally. Some otherwise good samples were discarded on account of impurities. There was a big class in oats, 23 entries in all, representing both black and white varieties. The general quality was good, there being very few impurities. There were two entries in barly and two in potatoes.

In the general class, the wheat, oats and barley were judged by Messrs. J. B. Andrew, East Royalty, and A. Scales, St. Eleanors, P. E. I. There were ten entries of Banner oats and several of black oats. These were all good. The wheat was excellent, the general quality was good and it was free from impurities. The exhibits of two-rowed and six-rowed barley while small, were of high merit.

Potatoes and small seeds were judged by Messrs. S. J. Moore and F. L. Fuller, Truro, N. S. The potato exhibit deserves special mention. One of the judges stated, "This is the best exhibit of potatoes I have ever yet judged in the Maritime Provinces." The potatoes were shown under type this year, which was a decided improvement. All the entries were first class and there were very few that were not excellent.

There was a big entry of turnip seed, and it was all of excellent quality. In mangel, beet, carrot and cabbage seed, the entries were small but the quality was good. The samples were all well ripened and thoroughly cleaned. The exhibit of root seed demonstrated very clearly the success with which these seeds can be produced in the Maritime Provinces.

The timothy seed generally was good. The first prize lot was very clean and of splendid quality. All the samples were free from serious impurities. There were only a few entries of clover seed. The first prize flax deserves special mention. Beans were a large class and very good. Both white and colored varieties were shown.

The sheaf exhibit was judged by Messrs. J. L. Tennant and Gordon McMillan. This exhibit was well arranged. The first prize sheaf of barley was a splendid sample. The heads were long, uniform and well filled. There were ten sheaves of oats and they were all very good. The first and second prize sheaves were of particularly good quality and well selected, showing neatness and care. Wheat and buckwheat were fair, although the entry was small.

The special sweepstakes trophy, a magnificent silver cup, awarded by the Steel, Briggs Co. of Toronto, to the member of the Canadian Seed Growers Association making the most creditable showing of not more than three varieties of selected seeds, was won by Mr. Richard Creed of Albion. He also won it in 1914.

The silver cup donated by Mr. S. J. Moore, of Truro, for the best selected and best arranged group exhibit of any variety of White Oats was won by Mr. Jas. E. Murphy, Cape Traverse.

The satisfaction expressed by the judges as to the quality of the exhibits was significant, and the Fair in this measure at least, was a success.

Maritime Seed Fair held in Summerside, P. E. I.

An interesting programme had been prepared. On Wednesday the proceedings consisted chiefly of two addresses in the afternoon. Mr. G. E. Saunders, Field Officer in charge of the Dominion Entomological Laboratory at Annapolis Royal, read a very interesting paper on Insecticedes and Fungicides. Following Mr. Saunders, Mr. Arthur Hawke, of the Farmers Agricultural Publishing Co., of Toronto, and who came to the Seed Fair as representative of the United Farmers of Ontario, outlined very interestingly the scheme for establishing a farmers daily paper. Interesting disl cussions and brief addresses followed both of these speakers.

On Thursday at noon the formal opening of the Fair took place, Mr. D. B. McDonald presiding in the absence of Dr. Gauthier. In the absence of the Lieutenant Governor, the Fair was declard open by Hon. Murdock McKinnon, Commissioner of Agriculture. Capt. Jas. Read, M.P., and Mr. F. L. Fuller in brief speeches endorsed the merits of the Fair.

On Thursday afternoon a meeting of the Canadian Seed Growers Association was held. Mr. W. H. McGregor occupied the chair. The programme included addresses by Premier Arsenault, L. H. Newman, S. J. Moore, W. H. McGregor, H. S. Cunningham, J. L. Tumant and E. M. Taylor, These with the discussion which followed, dealt with the various factors relative to crop improvement.

In the evening a public meeting was held which was presided over by Mayor Morrison. The programme consisted of addresses by Mr. Hawkes, Hon. Murdock McKinnon and Capt. Jas. Read, M.P. While the attendance was not large it consisted largely of farmers who were very much interested.

The following is a list of the prize winners:

CLASS 1.
Open to members and applicants of the Canadian Seed Growers' Association

Wheat, Red or White Fife—1st, E. J. Vessey, York; 2nd, Ben C. Jardine, Wilmot; 3rd, Judson Simpson, Belmont.

Wheat, any other variety—1st, Richard Creed, Albion; 2nd, E. J. Vessey; 3rd, Jas. MacDonald, Vernon Bridge; 4th, W. H. McGregor, Lot. 16; 5th, J. L. Cunningham, Bayhead, N. S.; 6th, Elie E. Arsenault, Wellington.

Oats, Banner—1st, J. E. Murphy, Cape Traverse; 2nd, Thos. Waugh, Wilmot; 3rd, W. L. McFarlane, Fox Harbor; 4th, W. H. McGregor, Lot 16; 5th, E. J. Vessey, York; 6th, Richard Creed, Albion.

Oats, Black, any variety—1st, Peter Bradee, York; 2nd, Elie Arsenault, Wellington.

Barley, six rowed—1st, Richard Creed, Albion; 2nd, W. K. McFarlane, Fox Harbor.

Barley, two rowed—1st, J. E. Murphy, Cape Traverse; 2nd, Judson Simpson, Lot 16; 3rd, E. J. Vessey, Little York; 4th, W. H. McGregor, Lot 16.

B

Peas, any field variety—1st, W. H. McGregor, Lot 16.

CLASS 2.
Best half bushel from hand selected seed plot. Open to members and applicants of C. S. G. A.

Potatoes, round white type—1st, Peter Brodie, York; 2nd, Judson Simpson, Belmont; 3rd, W. H. McGregor, Lot 16; 4th, W. W. Fawcett, Sackville; 5th, H. B. Parlee, Sussex.

Potatoes, long white type—1st, Peter Bradee, York; 2nd, E. J. Vessey, York; 3rd, Richard Creed, Albion.

Potatoes, oval white type—1st, Peter Bradee, York; 2nd, E. J. Vessey, York; 3rd, W. W. Fawcett, Sackville; 4th, Ben C. Jardine, Wilmot.

Potatoes, Rose type—1st, Peter Bradee, York.

Potatoes, any dark skinned variety—1st, Peter Bradee, York; 2nd, W. H. McGregor, York; 3rd, H. B. Parlee, Sussex.

CLASS 3
Open to all competitors in the Field Crops Competition in New Brunswick. Winners are expected to exhibit

Wheat—1st, H. B. Parlee, Sussex; 2nd, Henry Gordon, Chatham; 3rd, Francois O. Richard, Bretagneville; 4th, Cleopa Barrian, St. Ignace.

Oats—1st Henry Gordon, Chatham; 2nd, Cleopa Barriau, St. Ignace.

Potatoes—1st, Henry Gordon, Chatham; 2nd, W. W. Fawcett, Sackville; 3rd, Harold Hartley, Woodstock; 4th, R. R. Semple, East Florenceville.

CLASS 4
Open to all competitors in the Field Crops Competition in Nova Scotia. Winners are expected to exhibit.

Wheat—1st, A. B. Cunningham, Tetamagouche; 2nd, W. L. McFarlane, Fox Harbor; 3rd, Jno. R. Harrison, Maccan; 4th, Jas. E. Coady, Margaree Forks; 5th, Alex. Chrisholm, W. Grant; 6th, J. L. Cunningham, Bayhead; 7th, Samuel Freeman, Amherst; 8th, Jno. McMullen, Georges River.

Oats—1st. Alex. Chisholm, North Grant, Antig. Co.; 3rd, J. L. Cunning- Farm
ham, Bayhead; 5th. J. L. Grant, Antigonish; 7th, Wm. Oli Selma.

Potatoes—1st, Alex. C. Chisholm, North Grant, Antig. Co.; 2nd, Jno. McMullin, Georges River, N. S.

CLASS 5
Open to all competitors in the Field Crops Competition in P. E. I. Winners are expected to exhibit.

Wheat—1st, E. J. Vessey, Little York; 2nd, Geo. McFarlane, Bedeque; 3rd, Edgar Gledding, Abney, Lot 64; 4th, Denis O'Brien, Elmsdale; 5th, Gordon McMillan, North River; 6th, Cornelius McLellan, Arlington; 7th,

. J. McLellan, Grand River, Lot 14; th, J. MacDonald, Vernon Bridge.

Oats—1st, E. J. Vessey, Little ork; 2nd, Geo. McFarlane, Bedeque, rd, R. H. Raynor, Cascumpec; 4th, ay McLean, Lot 16; 5th, J. B. McMil- n, Long River; 6th, A. J. McDonald, rand River; 7th, Jno. J. Gallant, Tig- ish; 8th, Edgar G. Glidding, Abney, ot 64.

Barley—1st, E. J. Vessey, Little ork; 2nd, Cornelius McLellan, Ar- ington.

Potatoes—1st, E. J. Vessey, Little ork; 2nd, Mont Annear, Montague.

CLASS 6

Open to exhibitors not eligible for classes 1, 2, 3, 4 and 5.

Wheat, White Fife—1st, E. L. Mill- s, Central Lot 16; 2nd, L. C. MacDon- ld, Grand River, Lot 14.

Wheat, White Chaff—1st, Calvin W. Wood, Charlottetown; 2nd, J. C. erry, DeBlois; 3rd, Thos. Waugh, Vilmot; 4th, Geo. W. Wood, Hazel- rook; 5th, A. B. McFarlane, Bedeque.

Wheat, White Russian—1st, W. H. . Cooke, York; 2nd, Jno. R. Harrison, laccan; 3rd, Henry Gordon, Chat- am.

Wheat, any other variety—1st, J. R. larrison, Maccan; 2nd, Calvin W. Wood, Charlottetown; 3rd, Geo. W. Wood, Hazelbrook; 4th, Reuben arge, Wilmot; 5th, Henry Gordon, hatham.

Oats, Banner type—1st, Alex. C. hisholm, North Grant; 2nd, Fred G. ompton, St. Eleanors; 3rd, Percy larchbank, New Annon; 4th, J. R. larrison, Maccan; 5th, Hebert Agnel, Vilmot.

Oats, any white variety—1st, E. J. essey, Little York; 2nd, J. R. Harri- on, Maccan; 3rd, Jno. J. Gallant, Tig- ish; 4th, Henry Gordon, Chatham; th, Peter Bradee, York.

Oats, any black variety—1st, Al- honsus McLellan, Arlington; 2nd, E. . Vessey, Little York; 3rd, R. H. Ray- or, Cascumpec.

Barley, six rowed—1st, E. J. Vessey, ittle York; 2nd, Calvin W. Wood, harlottetown.

Barley, two rowed—1st, J. R. Harri- on, Maccan; 2nd, W. H. P. Cooke, ork; 3rd, W. S. Hugh, Murray Har- or; 4th, Alex. Anderson, Bedeque; th, Jas. H. Arsenault, Urbainville.

Buckwheat, smooth variety—1st, E. Vessey, Little York; 2nd, Laura rthur, Summerside; 3rd, Alex. An- erson, Bedeque; 4th, L. C. MacDon- ld, Grand River.

Buckwheat, rough variety—1st, J. . Murphy, Cape Traverse.

Field Peas, any large variety—1st, . R. Harrison, Maccan; 2nd, Wm. lie, Selma, N. S.

Flax Seed—1st, Arsene Gallant, iscouche; 2nd, Halden Compton, St. leanors; 3rd, Robt. Gaudet, Mis- ouche.

Vetches—1st, Theo. Ross, Bedeque; nd, D. A. Nickolson, Albany.

Timothy Seed—1st, J. A. Murphy, ape Traverse; 2nd, J. R. Harrison, laccan; 3rd, W. S. Hugh, Murray larbor; 4th, Geo. McFarlane, Bed- que.

Clover Seed—1st, S. R. Carons, reetown; 2nd, J. A. Murphy, Cape raverse.

Turnip Seed—1st, J. E. Murphy, ape Traverse; 2nd, Horace Wright, edeque; 3rd, Geo. McFarlane, Bede- ue; 4th, J. J. Dunn, Lower River; th, H. O. Gallant, St. Christome.

Mangel Seed—1st, Hebert Arsen- ult, Urbanville; 2nd, Albert C. Ver- iotte, West Northfield; 3rd, Horace Wright, Bedeque; 4th, J. E. Murphy, ape Traverse.

Beans, any white variety—1st, E. S. allant, Caissie; 2nd, H. B. Parlee, ussex; 3rd, H. O. Gallant, St. Chris- ome; 4th, H. S. Arsenault, Urban- ille.

Beans, any colored variety—1st, H. . Gallant, St. Christome; 2nd, E. S. allant, Caissie; 3rd, Wm. Olie, Sel- a; 4th, J. R. Harrison, Maccan.

Eschalots—1st, Mrs. H. W. Comp- on, St. Eleanors; 2nd, Mrs. Phileas audet, Miscouche; 3rd, W. D. Comp- ton, N. St. Eleanors; 4th, Hebert Ar- senault, Urbanville.

Onions—1st, Mrs. H. W. Compton, St. Eleanors; 2nd, W. D. Compton, St. Eleanors.

Carrot Seed—1st, Albert C. Veniotte, West Northfield, N. S.; 2nd, Hubert S. Arsenault; Urbanville.

Beet Seed—1st, H. S. Arsenault, Urbanville; 2nd, Thos. Waugh, Wilmot; 3rd, D. A. Nickolson, Albany; 4th, H. Wright, Bedeque.

Cabbage Seed—1st, E. J. Hogg, Sherbrook; 2nd, Thos. Stuart, Summerside; 3rd, H. S. Arsenault, Urbanville.

Potatoes, round white type—1st, Henry Gordon, Chatham; 2nd, E. J Vessey, Little York; 3rd, Walter Warren, Marshfield; 4th, W. H. P. Cooke, York; 5th, J. H. Arsenault, Urbanville.

Potatoes, oval white type—1st, W. H. P. Cooke, York; 2nd, W. H. D. Vessey, York; 3rd, Walter Warren, Marshfield; 4th, J. A. Lawson, Bedeque; 5th, J. J. McLellan, Grand River.

Potatoes, long white type—1st, W. H. P. Cooke, York; 2nd, J. H. Arsenault, Urbanville; 3rd, E. J. Vessey, Little York; 4th, Henry Gordon, Chatham; 5th, Arsene Gallant, Miscouche.

Potatoes, Rose type—1st, E. J. Vessey, Little York; 2nd, Arsene Gallant, Miscouche; 3rd, G. Gallant, Miscouche; 4th, J. H. Arsenault, Urbanville; 5th, Cornelius McLellan, Arlington.

Potatoes, red skinned variety—1st, Peter Bradee, Little York; 2nd, E. J. Vessey, York; 3rd, W. H. P. Cooke, York; 4th, Walter Warren, Marshfield; 5th, C. Perry, DeBlois.

Potatoes, dark skinned variety—1st, E. J. Vessey, Little York; 2nd, W. H. P. Cooke, York; 3rd, J. H. Arsenault, Urbanville; 4th, Henry Gordon, Chatham.

Potatoes, McIntyres—1st, E. J. Vessey, Little York; 2nd, J. E. Murphy, Cape Traverse; 3rd, Ashley Murray, Summerside; 4th, J. J. McLellan, Grand River, Lot 14; 5th, W. H. P. Cooke, York.

CLASS 7

Sheaf exhibits open to all

Wheat—1st, W. H. P. Cooke, York; 2nd, E. J. Vessey, Little York; 3rd, Geo. McFarlane, Bedeque; 4th, E. L. Miller, Central, Lot 16.

Oats—1st, Richard Creed, Albion; 2nd, J. E. Murphy, Cape Traverse; 3rd, Geo. W. Ward, Hazelbrook; 4th, Hubert Agnew, Wilmot.

Barley—1st, Richard Creed, Albion; 2nd, E. J. Vessey, Little York; 3rd, W. L. McFarlane, Albion; 4th, Calvin W. Wood, Charlottetown.

Buckwheat—1st, Richard Creed, Albion; 2nd, Jas. E. Murphy, Cape Traverse.

CLASS 8

Special Sweep-stakes Trophy.

Awarded by the Steel Briggs Seed Co., Toronto.

For the member of the Canadian Seed Growers' Association making the most creditable showing of not more than three varieties of selected seed. This trophy not to be the permanent property of any grower until won by him three times. Won in 1910 and 1911 by Robert McKay, Millsville, Pictou Co., N. S.; won 1912 by W. H. McGregor, Central, Lot 16, P. E. I.; won in 1913 by W. L. McFarlane, Fox Harbor; won in 1914 by Richard Creed, Albion, P. E. I; won in 1915 by W. L. McFarlane, Fox Harbor; won in 1918 by Richard Creed, Albion, P. E. I.

CLASS 9

Silver cup donated by S. J. Moore, Truro, for the best selected and best arranged group exhibit of any variety of White Oats. Cup to be won three times before becoming property of the exhibitor. Won in 1913 and 1914 by J. A. McDonald, Maryvale, N. S.; won in 1915 by W. L. McFarlane, Fox Harbor; won in 1918 by Jas. E. Murphy, Cape Traverse.

Some Minor Benefits of Co-operation

By H. S. Shaw

The majority of the arguments for Co-operation are so well known that they hardly need to be mentioned in these days. Its general benefits have been so well discussed by a multitude of writers and speakers that the only article dealing with co-operative matters which will prove interesting to the general reader, is one citing examples of successful associations.

And yet there are a few of the advantage sof co-operation among farmers still calling for emphasis in any appreciative notice of the movement which is gaining ground so rapidly among us, and first it ought to be observed that one of the chief advantages of co-operation is the convenient and economical distributing centre which it provides, both for the products of the farm as well as for the supplies which it must continually purchase.

It is doubtful if many appreciate this advantage as they should. In earlier days the farm itself formed the only distributing point for the produce of the farm. What was raised for sale had to be taken to market directly from the farm, whether it was far or near, and there disposed of to the best possible advantage. Such a method was generally expensive as well as laborious, as many of our older farmers will remember.

A little later in the history of Agriculture, the country store became the centre of distribution for the products of the farm; while still later the speculator appeared on the scene and tried to perform the same office for the farmer. These methods have all proved too expensive and have been quite generally abandoned among all progressive farmers for the co-operative method. With it's central warehouse where all the products of the farm are received, properly graded and packed, Co-operation attends to distribution in a most economical and every-way satisfactory manner.

Likewise to this central point are gathered the various supplies which the farmer needs, such as feed, fertilizer, spraying material, seed, etc. This method of distribution is proving one of the very attractive features of Co-operation, providing in addition, cheap and safe storage, adequate insurance against all loss, economy of time and labour.

Again Co-operation provides the farmer with capable management in the conduct of his ordinary business affairs.

All over our country are to be found many failures on our farms which were entirely preventable. Now these failures were due not to a lack of energy on the patr of the occupant fertility, but solely because the farm are poorly located or lack natural fertility, but solely oecause the farmer was lacking in good business ability. These men have failed simply because they were unable to dispose of their crops profitably or to purchase their supplies on the best markets.

This has not always been the fault of the farmer himself, but more often of his circumstances. Marketing requires not only special ability, but also much time and thought, and these last the farmer can ill afford.

Agriculture in these days is not only a laborious operation, but it demands a continuous expenditure of intelligent thought that little or no energy or time is left to attend to the marketing end of the business. It is just at this point that co-operation serves a most useful purpose. Each Association engages a successful business man who as manager gives his whole time of such of it as the business demands, to the work of marketing the products brought to the warehouse, as well as purchasing the supplies which are needed on the farm.

It also transpires that the manager becoming in time a sort of confidential business adviser to each member, often by his wise counsel saving him from many an unsafe venture.

But Co-operation is also a strong aid to greater production. Success in farming depends upon production, for the farmers income is in proportion to what sells. Hence, if he has nothing to sell he will have no income. In the days of reconstruction which are close upon us, there will be no other resort but increased taxation, a large burden of which will undoubtedly fall upon the farmer. The farm then will not only be obliged to produce as it has, but also additionally, to meet the extra burden of increased taxation.

General world food shortage is also an added call for greater food production. The fearful destruction in both men and natural resources, caused by the late war, has brought a large portion of Europe to the very verge of famine conditions. To meet this old world shortage of food, Canada must put forth greater efforts than ever to produce next yeár a record crop. In accomplishing this patriotic as well as humanitarian duty, the farmer can rely upon no more helpful ally than the Co-operative Association. By attnding to the business end of farming, Co-operation releases a vast amount of energy and intelligence which can be devoted solely to production.

But further, Co-operation encourages better farming. Co-operation brings the farmer into close touch with the consumer from whom he learns that a first class article is always to be preferred, commanding as a rule a better price. Thus encouraged, the farmer is bound to give more attention to the preparation of his seed bed in the spring. He will make a much more liberal application of fertilizer, give more attention to cultivation, spraying, as well as all other operations necessary to producing not only a large crop, but one of good quality. Since co-operation became more general, there has been a marked tendency towards better farming—a tendency which is bound to increase as time advances.

Such are a few of the advantages of co-operation, which are not mentioned in the ordinary article on Coly worthy of notice with those more commonly enlarged upon.

TO BE KNOWN AS CANADIAN NATIONAL RAILWAYS

A circular has just been issued over the signature of the President, Mr. D. B. Hanna, announcing that effective January 1st, 1919, all Government Railway Lines, heretofore known as Canadian Northern Railway System, including its eastern and western lines, and Canadian Government Railways, composing the National Transcontinental Ry., Intercolonial Railway of Canada and the Prince Edward Island Railway, will hereafter be known and operated under the name "Canadian National Railways," the headquarters of which will be in Toronto.

All officers of the system are requested to use the name "Canadian National Railways" in the course of operating correspondence and general conduct of affairs. It is also desirable that the public and the railway's connections adopt and put into practice at once the new title in addressing communications, reports and general correspondence to the various officers of the Canadian National Railways."

THE MARITIME FARMER

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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NOTICE TO ADVERTISERS.—Changes of ads. should reach this office one week before date of issue, in order to insure insertion.

RECEIPTS FOR FARMER SUBSCRIPTIONS

The Maritime Farmer, instead of giving you one receipt in the year for a paid subscription, sends you 24, or one every two weeks. You will find it on the GREEN COLORED LABEL on which your address appears. The date printed thereon is that on which your subscription terminates. If on payment of your subscription the date is not changed within two weeks, please notify us. No other receipt will be sent.

DATES OF ISSUE

January 7-21
February 4-18
March 4-18

JANUARY 7, 1919

The management and editors of the Maritime Farmer wish its readers a very Happy and Prosperous New Year.

* * *

1919

The new year, 1919, has arrived. The four preceding years were ushered in under the pall of war clouds. They were strenuous years—years that brought anxiety, death and sorrow to many of our Canadian homes. Now there is a rift in the clouds and humanity sees a glimpse of the silver lining.

As soon as the opening of hostilities was heralded and the call to arms in August, 1914, the Maritime Farmer sent out the first clarion call in Canada for the urgent necessity of Increased Production of food products. During the intervening years the farmers of the Maritime Provinces and all Canada have nobly answered the call. In no year was this more evident than in 1918. The men in the second line of defense on the farms, in many cases working against great odds, accomplished wonderful results during the spring and summer, by working early and late in an honest effort that the men in the Empire's first lines of defence might not go hungry. Their efforts were crowned with success and there is food a-plenty and thanks to Divine Providence and our soldiers and sailors there is peace.

But the demands for food to feed the destitute nations, until such a time as they will be able to bread themselves, as heretofore, is going to keep our food supplies at a low ebb. Surplus supplies will rapidly diminish and consequently the necessity for a continuance of effort to produce as much food as possible, is just as urgent for 1919 as it was during the year just closed.

The readers of the Maritime Farmer are alive to the situation and may be relied upon to put forth every atom of earnest effort to do what is right by their Empire. They have proved equal to the occasion when the call "to arms" was sounded and will not be found wanting in any feature of the reconstruction period in which they can shoulder a share of the burden.

YEARLY TEST—AUTHENTIC MEASURE OF COW

The work a cow does in her life is her true measure. Every breeder appreciates the cow that reproduces regularly; the one that produces milk for eight or more lactation periods and transmits to her offspring the same powers. It is not enough that a cow make two or three good records, especially for a week or thirty days. Constant yearly production, the average production for a series of years, even though it be not phenomenal, is what should be demonded of the dairy cow.

It is well enough now and then to prepare a cow for a big record by permitting her to rest for a long time and to feed her heavily during this resting period, that she may be fattened. The record made by such fitting does not measure the inherent and steadfast qualities of the cow. It simply shows what can be done with feed and skilful handling. The cow selected for such a test is usually well bred or she could not do her part. This system of handling cows has had its advantages, for it has demonstrated clearly the importance of good feed and right handling.

We are not unmindful of the harmful practice of permitting a cow to loaf the larger part of the year in order to make her fat and then force her by various schemes and methods to make a large record soon after she freshens. This system has taught us certain lessons which are valuable, but there is little to be gained by continuing this practice. The scientists have shown us through their investigations the effects certain feeds have upon the development and function of the animal. Every breeder who desires to develop a cow of large and steadfast production and capable of reproducing herself regularly, has been interested in the results obtained through certain feeds.

Enough work has been done to lead every thinking breeder to believe that with the right mixture of feeds our cattle will not only grow in producing qualities and reproduce more regularly, but the number of lactation periods will be extended. There must be a true conception of what constitutes the real measure of a cow and a thorough understanding of the factors influencing her development before the greatest progress in breeding can be made.

A WORD TO MARITIME BREEDERS

Breeders of pure bred live stock in the Maritime Provinces find that when they have good livestock—the kind they can honestly recommend—for sale, a timely advertisement in the columns of the Maritime Farmer will put them in touch with prospective buyers. The Maritime Farmer numbers among its present day clients breeders who have been persistent and consistent advertisers in its columns for over twenty years—a sound proof of the fact that they find it a paying proposition.

For over twenty years the Maritime Farmer has reported the exhibitions and fairs held in Maritime Canada. A full list of live stock prize winners is published in connection with these reports, consequently non advertisers have been given just as much publicity as have the advertisers. This publicity has put hundreds of dollars into the hands of breeders who have never spent any money for advertising in our columns.

A very small outlay will purchase a regular space in each and every issue of the Maritime Farmer. Or the advertisement may be arranged to appear at stated periods. A yearly advertisement is, however, the best proposition, as the breeders' name is kept regularly before the public.

Then, there the columns reserved for very small advertisements at the very low rate of two cents per word with a minimum charge of twenty-five cents. Thousands of dollars worth of live stock, farm produce and other articles annually change hands by purchase, sale and exchange through the publicity of our two cents per word advertisements.

Sometimes a breeder does not wish to carry an advertisement all the year or yet use a great deal of advertising space transiently. This class will find a line in our Breeders' Directory a paying investment. A line of this nature costs only two dollars per year, a trifle over eight cents per issue.

Any breeder of cattle, horses, sheep, swine or poultry who is in the field to produce and sell surplus stock of quality, should not depend on free publicity. It only costs a trifle to keep prominently before the public.

The Maritime Farmer has given a great deal of free service. Our advertisers and readers appreciate what has been done along this line. We wish to pass the word along to the breeders who do not advertise but who have benefited by the publicity received through Maritime Farmer reports that we expect and will appreciate the reciprocity of their patronage to the extent of at least an order accompanied by two dollars to have their names inserted in our Breeder's Directory for the ensuing year.

We will be pleased to publish items of interest in regard to purchases and sales or exchange of live stock, free of charge, for any advertiser in the columns of The Maritime Farmer. We invite our breeders to make full use of this offer. The Maritime Farmer is anxious to be of service to its patrons. We can help you and you can help yourself by furnishing information regularly. We do not wish, however, to assist only those who have honest value for sale.

A WORD TO OUR READERS

The Maritime Farmer has always aimed to publish timely, practical advice of the helpful kind and confine this advice to such matters as are applicable to Maritime Province conditions. We wish to also give full and free publicity to any movement that has for its aims and object the betterment of conditions in any specific line in our three provinces by the sea.

There are many instances of success along lines of stock breeding and general farming annually transpiring in every locality of Maritime Canada, but which are never made public.

The Maritime Farmer will always be pleased to receive short stories of matters of this kind We invite our readers to co-operate with us in bringing the best accomplishments of our farmers that show our Maritime possibilities to the attention of the public. Co-operation of this kind will show our young men at home, as well as others who may be looking for a country in which to cast their lot during the reconstruction period, just what can be accomplished in good old Nova Scotia, Prince Edward Island and New Brunswick. Let us hear from you.

* * *

After the farm implement has been thoroughly overhauled and repaired at this season of the year, it should be given a good coat of paint. If the old paint is gone or badly worn, it is advisable to apply a coat of linseed oil with a small amount of paint as a first coat. After this has thoroughly dried a second coat can be applied over the entire machine.

PRESENT AND FUTURE LIVE STOCK ACTIVITIES IN NEW BRUNSWICK

(Continued from page 199)

ing and with the understanding that if continued for a period of years the fence provided would become the property of the farmer.

Future effort towards the encouragement of the swine industry will mainly be through attention to the Pig Clubs, assistance along the line of demonstration pig pastures and the importation of pure bred stock for the farmers.

Summary

The stock industry in this Province is just at the point where real advancement could be made—an expansion on a wholesale scale cannot be brought about unless the facilities for marketing are available. The farmers are keenly interested but must be assured of an outlet. Departmental activities, no matter how vigorous, cannot overcome this, and at the same time much of the Departmental work will bear little fruit unless this condition is remedied.

Much is expected from the Club movement in sheep, pigs and stallions. The attitude of the farmers towards better stock was never better. A Provincial Livestock Association is in the process of organization, progressive men are behind it and this is bound to be a big factor towards the promotion of more and better livestock.

ECHOES FROM THE NOVA SCOTIA DEPARTMENT OF AGRICULTURE

AT THE N. S. A. C.

Owing to the influenza situation, the winter session at the College of Agriculture did not open until Dec. 4th last. In order to make up some of the time that was thereby lost, the Christmas vacation at the College will only extend from Dec. 24th to Dec. 30th, and the next session will open on Tuesday, Dec. 31st. Mainly owing to the influenza outbreak, hardly more than half of the students who had originally applied for entrance, reported at the College at the opening of the College term, but a few have applied to join the classes after they re-open on Dec. 31st, and in most cases will be granted the opportunity. The number actually in attendance in the regular classes at the College this year is 35, which is just about one-third of the attendance in pre-war time. This number is supplements by a class of 12 returned soldiers, whose numbers will be largely supplemented after Christmas.

Although the attendance for the current year is one of the smallest in the history of the institution, there are a considerable number of applications already received for entrance for the term beginning in Nov., 1919, at which time, under peace conditions and when, it is to be hoped, the influenza epidemic will be over, normal conditions will be resumed.

The Short Course at the Agricultural College, which was advertised to be held during the first two weeks of January, has been postponed and will not likely be conducted until March. While the influenza at Truro, the site of the College, is well in hand, yet there are many parts of the Maritime Provinces, from which students usually come to the College, where the epidemic is still serious. For this reason it was felt wise to postpone the Short Course for a time, in the hope that by the beginning of March more normal conditions might prevail and that consequently the usual large classes would convene again. When the date of the Short Course is finally settled upon, full announcement will be made in our columns.

CROP REPORT FOR 1918

The 1918 Crop Report issued by the Departments of Agriculture and of Industries and Immigration, is much more comprehensive than previous reports and deserves special comment. For the first time in the history of the Province, estimates are given by counties of the various crops grown, and the numbers of live stock of all kinds in each. It is true that these are only estimates but the Departments have in some particulars actual figures which will demonstrate the reliability of their information. A very good idea can thus be obtained of the relative standing of the various counties in the matters of agriculture.

In summing up results, the authors state that the hap crop is some 20% below the average. This shortage is more serious because no surplus has been carried over from the previous year. None the less farmers will probably have sufficient hay for their own use, except in a few localities where the supply habitually falls short. So it is anticipated that there will be no famine in hay but only a rather troublesome shortage. As an offset to this there is a liberal increase in oats and other cereals. The Province has 20% more grain than last year. With careful use of the hay on hand, supplemented by the heavy straw crop, the outlook is not as bad as many feared.

Copies of this interesting report may be obtained from the Secretary for Agriculture, Truro, N. S.

AN INTERESTING COMMENT ON THE LAW OF AVERAGES

The Nova Scotia Crop Report for 1918 furnishes a good example of the law of averages. Some 350 correspondents scattered over the Province report as accurately as possible on various crops, live stock, etc. The Department proceeds on the assumption that the average of these reports will be near the truth. The corrections of this judgment is demonstrated in the following paragraph, which first sets forth the estimates furnished by correspondents, and then checks these up against actual figures compiled from the Creameries by the Department.

"This is the first season for a number of years that we have to report no increase in dairy products. The average of the reports from all correspondents indicates 100% of butter in comparison with 100% last year, and 96% of cheese in comparison with 100% last year. As corroborative, definite figures to support this report, the exact returns from the creameries, plus an estimate for the month of December aggregates 1,800,000 lbs. butter in comparison with 1,760,871 lbs. in 1917. There were 11 more patrons. The figures for 1917 being 4289 and for 1918 being 4300. The value of the butter and cheese, due to increased prices, was 10% over 1917. Several matters accrued for this lack of increase in output, shortage of labour, shortage and high price of feeds and, most important of all, according to the Dairy Superintendent, a lack of cow testing, which in turn was partly due to lack of labour."

THE HAY SITUATION

It is unusually difficult this year to estimate the hay situation. The Nova Scotia Crop as a whole seems to have been at least 25% below the average, although many farmers have bigger crops than last year. At the present time, it is practically impossible to buy at the points where hay is usually for sale. To what extent this is due to an actual shortage, or, to a wise policy on the part of farmers in ensuring enough for their own use before selling, is a question which officials of the Department of Agriculture are trying to determine, but exact information is difficult to obtain.

A year ago there appeared to be a serious shortage in wheat and oats in N. S. After a careful survey, the Department estimated that there was a very limited quantity of seed oats and wheat in the Province, and advised merchants to buy heavily, at the same time adopting a policy whereby they would be guaranteed against loss on account of any unsold surplus. It transpired later that farmers were fairly well supplied with seed, and many thousands of bushels of wheat and oats imported for seed were consumed for food.

The situation may be the same with regard to hay. A year ago Nova Scotia had a heavy crop and farmers sold and used hay with little caution. This year the reduced crop has led to conservation and the final result may be more abundant supplies next spring than last.

This statement is being sent out to the pres s in the hope that it may lead to further publicity on this question, and give opportunity to bring in, if they are to be had, the supplies of hay needed in N. S.

FEEDING DAIRY CATTLE

The amount of bran, middlings, and cottonseed meal now on the market falls so far short of the requirements that the farmer has grave difficulty in properly feeding his cows. To meet this situation the manufacturers of proprietary or mixed feeds have put forth great commendable efforts to stock the market with their products. In addition to these there is to be had a certain amount of wheat screenings and special screenings,—mostly weed seeds by the way, but nonetheless good feed when ground. The only feed offered in any quantity that is rich in protein is linseed, or oil meal, Linseed meal is an extremely valuable feed and may be used with good results instead of cotton seed meal.

The Secretary for Agriculture for Nova Scotia, anticipating an acute shortage in the standard feeds, arranged early with the big dealers in New York and Ontario to place a considerable amount of this meal in N. S. This action has already resulted in many dealers and Farmers' Associations being able to buy linseed meal at a fair price. If the demand justifies it, further quantities may yet be obtained, although the Armistice conditions have already resulted in large purchases by Great Britain, Denmark and Holland, in which countries this feed is valued very highly and as a result market prices have increased several dollars per ton.

THE OUTLOOK FOR DAIRY PRODUCTS

Many city and town folk have been looking anxiously for lower prices on butter, cheese and milk. To these the prospects are disappointing. A rather startling fact is brought out in the Crop Report for 1918, recently issued by the Department of Agriculture for Nova Scotia. It is there indicated that, for the first year, in more than a decade, this Province has made no precepible advance in dairy production. The actual figures from creameries for eleven months, plus an estimate for December, show an increase of eleven patrons and a production of 2% more butter than in 1917. In some former reports a 50% increase in a single year has been recorded. This year's figures are yet more significant when we take account of the fact that farmers had the additional stimulus of a 15% increase in prices.

People who are conversant with the situation recognize at once two great reasons why the Nova Scotia farmers have failed to increase the products of the dairy. One is the shortage of labor; the other the high cost and the difficulty of obtaining at any price of mill feeds.

City people in general do not realize the extent to which these feeds have increased in price. Bran and middlings before the war could be bought for a little over $20.00 per ton, now they are hardly obtainable at from $42.00 to $50.00.

The facts in the whole situation indicate a double inference. On the one hand, it has become necessary for farmers to produce their own feeds. This is easily said and difficult to do in the present circumstances. An increase of production in feeds required additional labor and additional outlay for fertilizers of which the price has increased even more than that of feeds mentioned. Yet the farmers themselves admit that this is the only way to a solution of the feed question. On the other hand the city consumer must remember that this can only be done, and the supply of dairy products maintained, on the basis of the high prices upon which he now looks with suspicion.

A CINCH IN PURE BRED SHEEP

The Nova Scotia Dept. of Agriculture, in co-operation with the Federal Dept., purchased in Ontaria and various other points over three hundred pure bred, registered rams, and a considerable number of pure bred, registered ewes. This stock was brought to the College of Agriculture, at Truro, and a large number of animals have been disposed of at auction or by private sale. Experts who looked over these state that they were the finest consignment in the sheep line that ever came to Nova Scotia. It should prove the means of substantially improving many N. S. flocks, and of adding to the returns in this most profitable branch of stock raising.

MODEL ORCHARDS

It may not be generally known to the public of N. S., that the Provincial Dept. of Agriculture has at different times since 1900 set out some 30 Model Orchards in different parts of the Province. Of this number some have, through adverse circumstances, practically gone out of existence. The majority are still in first class condition and doing good work.

The terms upon which the Dept. undertakes the setting out and over sight of such an orchard are in general such as to ensure that it shall be as far as possible a public institution, conducted in the interest of the district in which it is located. The specific objects aimed at are the finding out of the possibilities of fruit raising in different parts of the Province, the testing of varieties as to their adaptability to the locality, and the demonstration of the best and most up to date methods in caring for and improving an orchard. The Dept. furnishes free nursery stock and a certain amount of spraying materials, and offers expert assistance in the operation of spraying, pruning and grafting. The Provincial Legislature limits the number of these Model Orchards to three in any one county, with a total acreage per county of not more than six acres. Cumberland, Cape Breton, Guysborough, Hants and Yarmouth are some of the counties which are at present not fully occupied.

COTTON SEED AND LINSEED FEEDS

Numerous inquiries are being received by the Dept. of Agriculture from dealers and farmers as to the possibility of cotton seed meal coming to Nova Scotia. The Washington Administration up to date has permitted only a few hundred tons to be exported to Canada, all of which went to the mills of Upper Canada to be compounded with other materials in making up the proprietary feeds, with which farmers are now becoming familiar. A communication received by the Secretary for Agriculture from Ottawa this week expresses the hope that export licenses for small quantities may be obtained, but this is not yet certain.

In the meantime those who have used cotton seed are using linseed meal of which 100 cars have been sold in the Province since midsummer. Foreseeing the difficulty of obtaining

(Continued on page 223)

HORTICULTURE.

SOIL MANAGEMENT INVESTIGATION IN A YOUNG APPLE ORCHARD

Te object of this investigation (carried on in Laurel, Indiana) ha been to study the effects, and particularly the factors responsible for the effects of tillage with cover crop, mulch, and sod on apple trees. The present report covers the formative period of the life of the trees. The land ocmprising the experimental plots had been used as a permanent pasture for neary 40 years previous to planting the orchard. The investigation has to do mainly with the upland area, the hillside plot being included for any additional light it might throy on the behaviolr of the upland plots. The systems of soil management include four major treatments, viz., clean cultivation with a winter cover crop; ;a heavy mulch of straw applied to the trees, and the grass cut and let lie; the grass cut and allowed to lie where it falls, no mulch given the trees; the grass cut and raked up to form a mulch collar about the trees.

The Laurel soil contains a high percentage of silt and clay, and varies but little in its physical composition, specific gravity, and water-holding capacity. The soil (to a depth of 9 in.) is not notably deficient in any essential element, however it is not very productive. The low organic matter content and the high proportions of silt and clay, make the soil one through which water percolates slowyl and the one which is easily puddled; coupled with these conditions is a slight acidity. The subsoil is not greatly different from the surface soil.

The average annual precipitation during the five-year period, 1912-1916, has been 38.71 in. The spring months are usually much better supplied with moisture than the autumn months. periods of dry weather frequently prevai lin June and July, which are commonly broken by heavy precipitation in August.

While there have been no wide variations in phenological behavior of trees under different systems of soil management, yet there does occur a marked slacking up of growth on grass plots during dry periods in summer.

Trees grown under a clean culture cover crop system or under a heavy mulch made 44.5 per cent. greater average yearly gains in trunk girth than trees grown in grass with a light mulch or no mulch at all. There was no significant difference between the three varieties, Grimes, Jonathaan and Stayman in their respanse to soil management treatments. The Stayman variety made slightly greater gain in girth of trunk on all plots than did the Grimes or Jonathan.

It is largely in dry periods that the value of certain systems of management in conserving soil moisture are made manifest. During two such periods, occurring in June two out of the five years, where an adequate mulch was maintained on the surface of the ground, either through the agency of cultivation or a heavy supplemental covering, the percentage of soil moisture was more than twice that in grass land. These soil moisturs conditions are closely correlated with the girth increase made by the trees. The great importance of water in tree growth is further emphasized by a study of the precipitation data which show that the variation in growth due to seasonal moisture conditions, appears to have been quite as large as

The soil temperature studies were carried out under field conditions (at a uniform depth of 9 in. on al lplots) by means of soil thermographs. As the soil temperature is largely a reflection of the air temperature, the extent to which soil temperature can be controlled by cultural practices is quite limited. The data do not support the opinion that rain is of importance in warming the soil. There is no indication that the single factor of soil moisture had an influential bearing upon the temperature existing under the dicerent systems of soil management. The temperature range varies inversely with the amount of mulch covering the soil. The role of soil temperature within the limits of ordinary cultural practice appears to be a neutral factor in tree growth in Indiana.

From a study of the chemical changes induced in the Laurel soil by cultural practices during the period 1910 to 1915, it appears that clean cultivation tends to deplete the soil of its organic matter, despite the fact that a cover crop is being urned under each year. The straw mulch plot has increased slightly in organic matter, while the sod plots have, as a whole come nearer to holding their own in volatile matter, humus and nitrogen, than the clean culture cover crop plots. There is no apparent correlation between the previously mentioned chemical factors and tree growth.

A study of the average bacterial population shows that there are in most cases, more bacteria present in the sod ground at Laurel than in the clean culture cover crops plots; that the variations in mulch on the sod plots have some influence on bacterial numbers; that tree growth and soil moisture cannot be correlated with bacterial numbers.

Tests show that ammonification varies with the season. Differences between plots are not consistent with seasonal climatic variations, and it is impossible to say that cultural practice has affected the ammonifying power of this soil. Tests show that nitrification varies with the season, but that a growing crop of grass or rye lowers the nitrate content of the soil; that the most nitrates are found under the clean culture cover crop system, the straw mulch ranking second in amount of nitrates; that the girth gains of the trees are roughly proportional to the nitrate content of hte soil; that there is no relation between the nirifying power of the soil and either cultural practice or tree growth; however, the ratio between the nitrates present in the field and the nitrifying power of the soil does bear a relation to tree growth.—By Woodbury, C. G.; Noyes, H. A., and Oskamp, Joseph, in Purdue University Agricultural Experiment Station Bulletin No. 205.

HOW WINTER RHUBARB IS PRODUCED

The production of rhubarb in winter has become of considerable value among gardeners. It is easy to do if certain methods are followed. If one is making a permanent business of rhubarb forcing, it is necessary, each year, to set out a new bed as plants once forced are of no further value. In the spring large roots should be dug, split in one bud sections and replaced in rich moist ground. During the growing season they are kept cultivated and free from weeds. In the fall they are covered with manure. Next spring a second bed is planted as before. That fall a large part of the first bed is taken up leaving sufficient to replant another bed the next spring. The roots are taken up the last thing in the fall before the hard, freezing weather comes and are placed in piles in a shed where they can easily be got at during the winter, but will remain frozen. About Dec. 1st take in a sufficient number of roots, place these bud side up on the floor of a warm cellar—about 68 to 70 degrees—and cover with an inch of sand. Be sure to fill in all interspaces. Keep this sand moist. About a week later the buds will begin to swell, and in from four to six weeks, depending upon the heat of the room, the cooler the slower growth starts—you should have rhubarb ready for market. After these roots are exhausted throw them away and put in more. If a constant supply is required make a new bed every two or three weeks during the winter. Be sure to keep all lights dimmed. Put burlap or brown paper over the windows to get the bright pink color so much desired.—A. H. MacLennan, B.S. A., Ontario Vegetable Specialist.

Smart Children's Shoes
That Stand Hard Wear

Sturdy little ones are neatly shod in comfortable Amherst Shoes. Their growing feet are not crowded—especially in the flexible foot-form lasts with the smooth tread—and these shoes will wear longer than most.

Made in sizes 11-7; 8-10½; 5-7½

Amherst Boot & Shoe Company Limited, Amherst, N.S.

THE 1919 NOVA SCOTIA FRUIT GROWERS' CONVENTION

The annual meeting of the Nova Scotia Fruit Growers' Association will be held this year at Bridgetown, on January 21, 22 and 23. The Nova Scotia Fruit Growers are a live aggregation that for many years have been leaders in the most progressive agricultural movements inaugurated in that province. They stand firmly behind any policy that has for its object the advancement of their province in general and their chosen profession of fruit growing in particular. Important questions are discussed with a statesman's like grasp and many and profitable have been the inspirations received by those who have had the pleasure of attending their conventions. Then on to Bridgetown in time for the opening session on the 21st, to help further and stimulate the fruit industry in Nova Scotia.

CONTROL OF POTATO ROT

Most of the potato rot this year was due not to blight, but to a ground organism, which, of course, attacked the tuber from the outside. The wet condition of the soil provided favorable circumstances for the rapid propagation of thi sfungus. The Nova Scotia Department of Agriculture has been conducting experiments looking to the control of this disease. Results are not yet complete, especially with regard to potatoes exposed to long periods on board ship. Enough test have been made, however, to give assurance that in ordinary storing conditions this form of rot may be controlled or at least decidedly checked. The method of treatment is to dip the potatoes in a wire basket preferably, into a tub of weak copper sulphate (bluestone) solution, say 4 oz. to 40 gals. of water, and then allow them to dry. This, of course will not save the potatoes already partly rotted, but with a thorough picking over, it will greatly assist in preventing the spread of contagion in barrels or in bins. The same treatment will prevent the spread of the form of rot which accompanies blight, if the tubers are picked and treated before storing. Further information on this important matter will shortly be available.

ANNUAL CONVENTION

DAIRYMEN'S ASSOCIATION OF NOVA SCOTIA

TO BE HELD IN

AGRICULTURAL COLLEGE, TRURO, N. S.

JANUARY 9th and 10th, 1919

All cheese factories and creameries in the Province of Nova Scotia are requested to send their fullquota of delegates.

Creamery Butter Exhibition in connection and judging of Butter in Summer Competition.

For any information, write to

W. A. MacKAY,
Sec'y., Truro, N. S.

BRITISH APPLE EMBARGO REMOVED

By C. W. Baxter, Fruit Commissioner

The British apple embargo was put into effect on February 24th, 1916, owing to the urgent demand for ocean space to accommodate food stuffs and munitions for the effective prosecution of the war. Subsequently, at the urgent request of the British Fruit Trade and the Canadian growers, this embargo was modified so that during the season of 1916-17 apples could be shipped to Great Britain until July 31, 1917, provided that the quantity imported into Great Britain must not exceed 50% of the total import during the previous season. Thus the embargo automatically came into effect again on August 1, 1917.

During the fall of 1917 very energetic efforts were made to have the embargo again modified. The trade in Great Britain was particularly active, and apple exporters in Canada took every possible step, and made every possible plea, to have a satisfactory adjustment made. These efforts were all without avail. The food situation in the Old Country was in a more or less critical condition, and apples were not considered as essential as other food stuffs. It was, therefore, necessary for the Nova Scotia crop to move westward in Canada and for many Ontario apples, which might otherwise have been exported, to be disposed of in our home markets. The apple crop that year was light, and was, therefore, distributed and disposed of at excelelnt prices for first quality fruit.

On November 15, 1918, a general license was issued to the British trade permitting the import of apples in any quantity. It was pointed out that exporters must find their own space. As soon as we received this information, we at once cabled our representative in Great Britain asking him to keep us advised, by cablegram, immediately upon the completion of arrangements. As it was understood that sales in the United Kingdom would be subject to controlled prices and as the ocean transportation rate was very indefinite, it was of the greatest importance that these two figures, namely, the transportation rate and the British fixed or controlled price, be obtained as quickly as possible.

Our next information was received on November 18th, when we learned that all arrangements for shipping space were to be made through the office of the British Ministry of Foods (Canada), at Montreal, and that applicants for space would be furnished with the necessary forms when space was available.

On November 25th, we learned that the ocean rate would be $5.00 per barrel and $2.00 per box, with no discrimination between Ontario and Nova Scotia barrels. We also received a cable from our British representative to the effect that while no apple order had been issued, it was probable that the retail maximum price would be fixed at 9 pence per pound and the primary distributors' maximum at 6¼ pence per pound. It was also pointed out that importations would probably be restricted to licensed importers.

Thus the situation stands at the time of writing. The removal of the embargo will particularly affect Nova Scotia, where there were approximately 200,000 barrels of apples still in storage when the embargo was removed. These can be readily exported from Halifax to Great Britain, and even if the quantity of available space is small on individual steamships, yet in the aggregate it is probable that no difficulty will be met in obtaining all the space required. The situation is hopeful, and one, which after nearly three years of restricted markets, will afford the Canadian grower and the Bruitish fruit merchant very necessary encouragement.

Soldiers Home Coming Campaign

War Work and After-War Work of the SALVATION ARMY

"FIRST TO SERVE—LAST TO APPEAL"

The Salvation Army has for 53 years been organized on a military basis—inured to hardship, sacrifice and service. It is always in action, day and night.
It has maintained Military Huts, Hostels and Rest Rooms, providing food and rest for tens of thousands of soldiers each day. 1,200 uniformed workers and 45 ambulances have been in service at the front—in addition to taking care of the needs of soldiers' families here at home, assisting the widows and orphans, and relieving distress arising from the absence of the soldier head of the family.
Notwithstanding all the Government is planning to do, notwithstanding the pensions and the relief work of other organizations, hundreds of cases of urgent human need are constantly demanding the practical help the Salvation Army is trained and equipped to render.

The Salvation Army Million Dollar Fund

January 19th to 25th

While it could do so, the Salvation Army has carried on without any general appeal. Now the crisis is arising with the return of the 300,000 soldiers. The budget for essential work during the coming year has been prepared. A million dollars must be raised to continue the after-the-war activities, which include:

Hostels for Soldiers

Salvation Army Hostels are vitally necessary for the protection and comfort of the soldier at the many stopping places between France and his home here in Canada. These Hostels—or military hotels—provide good food, clean beds, wholesome entertainment at a price the soldier can afford to pay. If the boys did not have a Hostel to go to, WHERE would they go?

Care of the Wives, Widows, Dependents and Orphans of Soldiers

Scores and hundreds of cases could be cited where soldiers overseas have been comforted by the assurance that the Salvation Army has stepped in to relieve their families from dire need. As an instance, a mother with six children is located—no fuel, weather freezing, food and funds exhausted by sickness and other troubles. They are taken to Salvation Army Emergency Receiving Home. Winter and 300,000 soldiers returning increase the demands on the Salvation Army, whose personal help alone is of avail. Consider, too, the vast and complex problems arising out of the care of soldiers' widows and orphans.

Keeping the Family Unit Intact

The women of the Salvation Army on their visiting rounds accomplish the apparently impossible. Is the discharged soldier out of a job? They find him one. Is the wife sick, the home-work piling up, the children neglected? They nurse the wife, mother the children, wash and scrub. Is there urgent need for food, fuel, clothes or medicine? They are supplied. It takes money, of course, but more important is the loving spirit of service in which the work is done.

When the Soldier Needs a Friend

The Salvation Army Lassie provides the boys with hot coffee, the pies, chocolate, magazines, writing materials, and the spiritual comfort which the boys in Khaki need. Until the last homeward-bound soldier is re-established in civilian life, will you not help the Salvation Army to combat the discomforts and evils that beset his path?

The service of the Salvation Army, founded on sacrifice, demonstrates the true spirit of the Master. It is directed to the extension of the Kingdom of Christ. For two generations the Salvation Army has stood out and out for God.
It approaches practical problems in a practical way and achieves RESULTS. It co-operates with all—overlaps none. It recognizes neither color, race nor creed. It is always in action, day and night. No organization does greater work at less cost. To carry on its great work it must have financial help, and on its behalf members of the Dominion Government, business men and returned soldiers endorse this appeal for funds.

"LET YOUR GRATITUDE FIND EXPRESSION IN SERVICE"

THE SALVATION ARMY MILLION DOLLAR FUND COMMITTEE

12 Headquarters: 20 Albert St., Toronto

CHEAPER BUG POISON

Among poisons for the control of biting insects, such as the potato bug, Paris Green has been first both in point of time and in popularity. It is now an expensive article, and farmers are reminded that they are paying the greater part of the price for the green colour, which is of no importance so far as the killing of bugs is concerner. The green tint is due to the large crystals of arsenic when combined with a copper base. The estimated metallic bases are copper, lead, zinc and lime. Of these, copper has advanced greatly in price during the war, and is now nearly in the closs of precious metals. The cheapest in the lot is, of course, lime.

When arsenic is combined with lime one resulting compound is arsenate of lime. The appearance of this compound is that of a very fine white powder, and the price is about one third that of Paris Green. Its killing properties, per content of arsenic contained, exceed those of the latter, as it contains the same poison in a much lne rcondition so that it remains longer in suspension, thus requiring less stirring, and for the same reason adhering much better to the foliage.

Arsenate of lime is suitable for use alone or compounded with Bordeaux mixture on all vegetable crops, including potatoes. For fruit trees 5 pounds of water slaked lime should be added to one pound of arsenate.

A tremendous business has sprung up within the past two years in this cheaper poison, partly owing to its effectiveness in controlling the boll weevil, the most serious foe to the cotton crop in the South. It is easily available, and should be on sale at all points. Ask for arsenate of lime and save more than half your outlay for poisons.

MANUFACTURE OF CIDER

Sweet cider is unfermented apple juice, and hard cider is fermented apple juice. To get the juice the apples are either crushed or ground in a cider mill and the juice pressed from the pulp.

The fermentation of apple juice, or any other fruit juice, is brought about by the development in it of yeast. Yeast cells are microscopic plants invisible to the naked eye and are always present on the surface of fruit. When the fruit is crushed to get the juice many of these yeast cells get into the juice and if these are not destroyed they will induce fermentation.

Consequently, in the manufacture of sweet cider we must destroy the yeast cells that are present and prevent others from getting in. The surest way of doing this is to pasteurize the juice immediately after it is obtained from the fruit and store away in well-sealed containers. In the case of cider the pasteurization process means heating the juice to 170F. for ten minutes and then filling into containers that have been scalded and can be tightly corked. Care should be taken not to let the temperature get above 170F. during pasteurization or the character of the juice may be injured. The juice is then stored away at a low temperature to allow it to clear.

Hard cider is produced by allowing the fresh apple juice to ferment in the cask. The fermentation is naturally induced by the activities of the yeast cells that get into the juice from the surface of the apples. As, however, there are various kinds of yeast cells, and also many mold spores liable to be on the fruit which may injure the quality of the cider spoiling the flavor, it is a good plan to control the fermentation either by first pasteurizing the juice and then adding a good yeast or simply by adding a good yeast to the raw juice as soon as obtained from the apples.—Prof. D. H. Jones, G. O. A. College, Guelph.

DAIRYING.

RAISING DAIRY CALVES

Assuming that we have a normal, fully developed calf, weighing from 70 to 85 pounds at birth, which is about the right weight, all things considered, we leave the calf with its mother from two to three days, or till the milk of the dam is marketable. We like to take the calf away from its dam in the afternoon, and then the calf is ready for something to eat when the dam is milked next morning. All milk fed should be 90 degrees Fahrenheit. The calf is then fed three times daily, its mother's milk, about four pounds to a feed, which we weigh. We weigh all milk fed to very young calves, and believe it pays to do so. This we can do nicely as we milk our new milch cows three times daily at the start, even though they are not continued so very long. When the calf has become adjusted to conditions, and is thrifty, two or three weeks of age, we begin by substituting in the morning and evening meal, one pound of new warm skim milk, but as we separate only twice daily, the noon feed is still whole milk. When the morning and evening meal becomes about half and half whole milk and skim milk, the noon feed is curtailed, and warm water added to give bulk, until the noon feed is water alone. As the noon feed is reduced in milk, it is added to the morning and evening feeds. From this time on, the quantity given depends on the individual.

The calf is usually four or five weeks old by the time this gradual change from whole to skim milk has been taking place. This idea of the noon-watering is continued regularly, and the temperature regulated according to size of calf and season of the year. I believe that many a calf really suffers from not having water to drink. Their tastes vary in this respect, some seldom drinking only a few swallows, while others will surprise you in the quantities they will drink. I refer especially just at this point to calves who have no access to a drinking-trough, but are hand-fed in their own pens. The length of time that a calf is given skim milk depends wholly upon the available supply. We have fed it once a day to heifers nearly two years of age. I believe it is really worth more for poultry and pigs than for 2-year-old heifers, but they certainly do well on it, even then.

Teach It to Eat Grain

We teach the young calf to eat grain, a mixture of bran, ground oats, hominy, and a small quantity of oil meal, as early as possible. This is easily done after feeding milk, and it takes away the notion of sucking. The quantity varies according to age, but two pounds a day will help out wonderfully in their growth. Don't forget to put some salt in the grain ration, or grain-box, for they require it same as any other animal. It stimulates their appetite, and aids digestion.

It is our custom, and commend it to all breeders, to weigh their calves regularly (monthly). We are not satisfied unless a calf has made a daily average gain of two pounds. They will not do this often the first month, but it puts you wise to the actual growth of the calf, and informs you whether your course of feeding is adequate or not. We had one bull calf, about six months of age, which made a gain of 105 pounds in one month. It is needless to say that this calf was especially thrifty, and made good use of a generous amount of skim milk, of which we had a plenty at that patricular time.

Don't keep over two calves in any one pen, one is better, unless they have an exercising paddock for them to run in and out of at will.

Exercise is necessary to growth, but be careful not to allow a calf to get too tired, when first turned loose after being shut up for a long period, as they are during the winter months. This might give them a set-back temporarily unnecessarily. Set-backs are uncertainties.

The constitution and vitality of the parents are matters which precede the birth of the calf, but which the breeder should not lose sight of. A cow weakened from too heavy and too continuous milking, not given an opportunity to recuperate from the strain, or any other cause, will be apt to drop an impoverished, weakling, which will tax the ability of the most successful calf raiser to get started nicely and prove a worthy successor to either parent.—W. L. P.

THE COW'S KEEPER

The superintendent of a boys' school, where a dairy herd is maintained and is cared for by the students, recently asked us for an "authoritative word which we can use to impress upon our boys the necessity of carefulness, quietness, and gentleness in handling the cows." Thinking that possibly our reply may be of interest to others, re reprint it below, although it is a somewhat more intimate an dpersonal statement than we usually publish. We said:

"Possibly the best word we can give the boys is to quote the following "Notice to help" which Ex-Governor Hoard, the Senior Editor of Hoard's Dairyman, keeps posted before the men ding the work on his farm:

"The rule to be observed in this stable ta all times toward the cattle, young or old, is that of patience and kindness. A man's usefulness in a herd ceases at once when he loses his temper and bestows rough usage. Men must be patient. Cattle are not reasoning beings. Remember that this is the Home of Mothers. Treat each cow as a mother should be treated. The giving of milk is a function of motherhood; rough treatment lessens the flow. That injures me as well as the cow. Always keep these ideas in mind when dealing with my cattle."

Many years ago, in his lecture on "The Dairy Temperament of Cows", Mr. Hoard said:

"Now, my friends, you and I very little understand the wonderful connection between the nervous machinery and the mammary function; if we did understand it better, we would use this gentle mother a great deal better. No finer truth was ever uttered than that expressed by Mr. W. C. White of Wisconsin, a man who illustrated in his person the sweetest elements of human nature,—the most successful dairyman that ever appeared in our state. When asked how he treated his cows, he said: 'I always speak to a cow as I would to a lady.' A great many men reverse it, and speak to ladies as they would to a cow. But, my friends, the man who is lacking in respect for the motherhood of either does not deserve either."

Let the bbys understand that a cow is a mother, that she needs the care and comforts of motherhood if she is to do her best. No true dairyman believes the dairy cow can rough it and perform her function to the highest degree. She must receive the treatment her function demands or low production of milk will follow. The cow is honest and does the very best she can with her talents and the care she receives from her owner.

There is a tendency upon the part of all of us to overlook little things but it is the little things that make the difference between profit or loss—success of failure. See to it that your cows are well fed, it pays. See to it that your cows are comfortable and well kept, it pays. See to it that your cows are known to you as individuals and that they have a place in your affection, it pays. See to it that all the little things around the barn are done well, it pays. See to it that kindness and intelligence govern your every action in caring for your cows, it pays. The man who does not think it worth the very best there is in him is not worthy of farming.

It is not uncommon to hear the dairy cow spoken of as a machine. Barring the injustice this does to the cow as a sentient, intelligent, and responsive being, there is considerable justification for applying this antonym to her for in many respects she responds to the definition and purposes of a machine—so wonderfully is she designed, so carefully is she constructed, so delicately is she adjusted.

When we consider the dairy cow from the machine point of view we find many similar conditions. She is marvelous in construction; has a nerve force, closely allied to electricity, which separates, combines, and transforms crude raw material into a refined and useful product; she has been developed by intelligent breeding and feeding from practical worthlessness to great and constantly increasing efficiency; she is thoroughly responsive to human sympathy and humane treatment from day to day and year to year; her productive capacity is largely governed by the care she receives and the feed given her. When we consider and compare these resemblances we begin to realize that the man behind the cow is a most important factor in dairy husbandry in developing and maintaining the efficiency of the dairy cow.—Hoard's Dairyman.

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FACTORS IN PROFITABLE PRODUCTION OF SANITARY MILK

Kentucky Bulletin 206 by W. D. Nicholls describes experiments carried on with a view to determining the number of bacteria to which milk is subjected during the various daily operations in the dairy barn and milk room and to determine the best means of preventing bacterial contamination. The results were obtained by exposing glass petri dishes containing a sterile nutriment medium in the dairy barn of the station and the adjoining milk room.

The results indicate that in a well-cleaned dairy barn very few bacteria are present in the air, but when dust is present the number is very large. "When the cows are in the barn the number of bacteria in the air is materially increased. The presence of bedding in the stable greatly increases the bacteria of the stable air. Dusty mill feeds and hay are fruitful sources of bacterial contamination. The act of brushing the cows adds myriads of bacteria to the surrounding atmosphere. Washing the cows' udders, even when apparently clean, greatly reduces the number of bacteria falling from the udder. Infection from washed udders is less than one-seventh of that from unwashed udders. The air in a pasture upon which is growing a heavy sod of grass is nearly sterile. In a dairy room having smooth walls and a concrete floor which are regularly and carefully washed the air should be practically free from bacteria."

It is suggested that "to keep down the bacterial contamination of the air in the stable where the cows are milked the room must be kept well cleaned and every effort must be made to keep down all the dust. Dusty bedding must be avoided, and if bedding is used dust should be laid by sprinkling. Since cow hairs are laden with bacteria, all loose hairs should be removed from the cows by curryinf, in order to prevent them from falling into the milk. However, sufficient time should elapse after currying, in order to prevent them teria to settle to the floor before milking egins. The cows' udders should be carefully washed with tepid water and a clean cloth before milking begins. Wiping the udder with a clean, damp cloth greatly reduces bacterial contamination of the milk. In feeding mill feeds and hay care should be taken to raise as little dust as possible."

OLEOMARGARINE IN CANADA

The following from the editorials of the "Farm and Dairy" pretty clearly shows how the Canadian people are taking to oleomargarine. In the United States the packing house by-product seeks to dress in the clothes of that which it imitates in order that it will be purchased by the people who do not know what they are buying. In Canada, however, the protection of the dairy industry seems to be sufficient and the information of even the "poor folks" enough that oleo is eaten only by the people "who have to take what is given them."

"Oleomargarine is not meeting with the public favor its advocates expected. Mr. J. A. Ruddick, Dominion Dairy Commissioner, reports that since the removal of the embargo on oleomargarine, a little over 4,000,000 pounds of that product has been imported into Canada and 6,000,000 pounds have been manufactured here. The actual consumption of oleomargarine will be even less than the figures given, because of the large quantities now held by importers who cannot dispose of them. "These quantities," says Mr. Ruddick, "are not large compared with 140,000,000 pounds of butter which we consumed during the same period."

When oleomargarine was first introduced, the curiosity of the public had been kept on edge by the great

amount of free publicity given to butter imitations by the city press. Everyone was anxious to try oleomargarine and the opening demand was keen. Since then interest has waned. People have found that there is no really acceptable substitute for butter, and as long as consumers can secure the real article they will have it. Incidentally we might remark that the "poor folks", in whose interests oleo was supposed to be introduced, are buying it practically not at all. Here, as in the United States, the big market for oleomargarine will be the hotels, restaurants, and boarding houses, where it is served to people who have to take what is given them. Our experience with oleomargarine up to date has furnished no good reason why its importation into Canada or its continued manufacture in the country should be permitted after the war.

Dairy

AGE AND THE MILK FLOW

In adding animals to the herd it is always necessary to know the age of the animal. The purchaser may want this information for more than one reason, depending somewhat upon the purpose for which the animal is desired. She may, for instance, be wanted for breeding purposes, and the length of time she may be expected to breed is important and has a very important influence upon her value as an addition to the herd. Again, she may be wanted simply for her performance as a milk producer. Here there are other factors than her probable period of usefulness to consider, for if she be a heifer, the purchaser will be inclined to estimate her possible or probable production as a mature animal. If the animal is already mature the purchaser will want to know how long he may expect her to yield milk in quantity and richness. It is well known, of course, that there is a somewhat rapid increase in milk production as heifers reach maturity. The fourth milking period corresponds more or less closely to the sixth year in the life of an animal, and it is in this year, according to experiments made at the University of Missouri, that cows may be expected to produce tehir largest flow of milk. It is possible, nevertheless, for animals to make their best records at the age of ten or eleven years, but this we believe to be the exception rather than the rule, for there are always certain animals as well as people whose actions prove exceptions to every rule that is laid down. For this reason, decline in milk production as age increases is difficult to represent. At the Unviersity of Missouri the experiments referred to above gave results which may be expressed as in the following table, showing that from the fourth to the seventh period there is a slow decline in production:

Number of Milk Period	Number Cows	Per Cent. Av. lbs. of Milk Produced Fat
1	10	4754
2	10	5060
3	10	5648
4	10	6575
5	10	6341
6	10	6339
7	10	6282

This table, however, shows the average production per year from only ten Jersey cows. Certain individuals might depart very radically from the average, so that these figures show little more perhaps than that a decline may be expected after the fourth milking period.

Some years ago the American Jersey Cattle Club published the records of Jersey cows in a book entitled "Jersey Sires with their Tested Daughters." About ten per cent. of these records are authenticated, the remaining ninety per cent. being private records of the earlier Jersey breeders, but quite probably true accounts of actual production. At least they have been considered so by Pearl, of the Maine Experiment Station, who has closely examined these records in an endeavor to study the influence of age upon the milk flow. Eckles sums up the increase in milk flow until maturity is reached as follows: "A dairy cow on the average as a two-year-old may be expected to produce about 70 per cent.; as a three-year-old around 80 per cent.; and as a four-year-old aobut 90 per cent. of the milk and butterfat she will produce under the same treatment when mature.

With regard to the richness of the milk as age advances, Eckles does not find such marked differences. Differences do exist, however, and these are brought out by the following table:

Numebr Milk Period	Number Cows	Fat Yield in Per Cent.
1	37	71
2	37	84
3	37	93
4	26	100
5	20	98
7	10	95

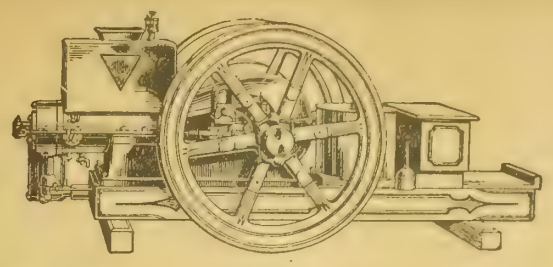
The author, therefore, concludes: "While the daily variations in the percentage of fat in the milk of all cows is constant and striking, the average for the entire milking period varies but little from year to year. While it s not entirely safe to judge the future milk production of a cow from her two-year-old record, it is reasonably safe to judge the richness of her milk. The richness of milk remains practically constant from year to year, except that after the third milking period there is a slow, gradual decline with advancing years."

COST OF PRODUCING MILK

It is of the greatest importance to be able to determine the cost of production by some method which has become more or less standardized. During the last three or four years there has been a great deal of dissatisfaction prevalent among both producers and consumers over the increased price of milk. The consumers have been faced wit ha steadily increasing cost of living and the producers have been faced with a steadily increasing cost of production, but they were not able to convince the consumer or the city milk distributor that they were entitled to an increase in price without a great deal of dissatisfaction. It is, therefore, of interest to dairymen generally to know that the Dairymen's League in the United States passed a resolution at a September meeting, whereby the "Warren" formula for determining the cost of production of milk was finally adopted by the League. This method of determining cost is approved by the United States Food Administration. The principle of this formula is briefly explained in the Holstein-Friesian World as follows: "On the average it takes the following factors to produce a hundred pounds of milk testing 3.8 per cent.; 33.79 pounds of grain, 43.3 pounds of hay, 10.8 pounds of other dry forage, 102.5 pounds of silage and other succulent feed, 3.02 mours of labor and 25 per cent, of the cost of the above factors for miscellaneous factors such as pasture, depreciation, etc.

If the market values of each of the above factors are obtained, the sum will be the average cost of production of 3.8 per cent, milk. But, of course, it costs more to rpoduce milk in some months than it does in others. To care for this variation and to find the cost of production for any particular month, the average monthly price as obtained above must be multiplied by a percentage factor which has been worked out as correct to give the proper variation for each month. This factor will be more than 100 per cent. in winter and less in summer. For instance, suppose the average monthly cost for producing milk is found to be $2.80 per hundred (this figure, of course, is not correct, but it is only given as an example.) To find the price for November when milk is high, the average yearly price $2.80 would be multiplied by 119 per cent., which is the percentage variation factor for November; and to find the price for June, $2.80 (the average price) would be multiplied by 70.6 per cent., which is the percentage variation factor for June.

The formula has been worked out by Professor G. F. Warren, of the College of Agriculture at Ithaca, from the great mass of evidence on the cost of milk production which has been collected in the last few years. The formula is a scientific method of determining the cost of producing milk, and is fair to every one concerned because prices emade from it represent the real cost of production. It will be especially acceptable to farmers because it ensures them fair prices for their milk by giving them costs on all the factors that go into the production of milk.



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HOW TO IMPROVE QUALITY OF MILK

During the present time when there is such an unlimited drain on the country's products, the dairyman who produces a product of inferior quality is not rendering his best service to his country.

The man who produces unclean and filthy milk is especially unpatriotic. This milk, if sold for ready consumption, causes disease; if used for butter-making it produces an inferior grade of butter; and if used for cheese faking, in all probability will produce cheese that will not keep.

While it is not possible for all farmers to produce a grade of milk similar to certified milk, it is possible, by a reasonable amount of care, for all farmers to produce a high grade of milk.

The following are a few precautions that should be noted by every conscientious dairyman:—

1. Cleanse milk pails and milking apparatus thoroughly after each milking.
2. Brush off cow before milking.
3. Milk with clean hands.
4. Do not allow any dust in barn during milking.
5. Remove milk from barn as soon as possible after milking.
6. Cool milk to 50 degrees or thereabout as soon as possible after milking.
7. Keep milk in a clean cool place.
8. Do not allow manure to collect around the barn door and in the corral.
9. Keep barn reasonably clean.
10. Do not sell milk from cows that have not been tested for tuberculosis.—W. E. Spangler.

CAUSE OF CLOTS IN MILK

Clots in milk are quite common. The condition is generally known as garget. Sometimes the milk is affected only slightly, and sometimes it is seriously affected. The cause is not definitely known, but it is due to an abnormal condition of the cow's udder. Sometimes the trouble will occur two or three days and then disappear. Occasionally it will occur at intervals through the whole milking period of the cow.

C. H. Eckles of the University of Missouri College of Agriculture suggests that the cow be given a physic of 1½ pounds of Epsom salts in the form of a drencr. A tablespoonful of saltpeter given once a day for three or four days is sometimes beneficial. If the animal has been receiving much grain, tre ration srould be reduced for a day or two. The amount of grain may then be restored after the condition disappears. If the trouble persists month after month and the cow is not especially valuable, it would be advisable to dispose of her, because it is not always possible to eliminate the trouble.

LIVE STOCK.

NEW BRUNSWICK'S LIVE STOCK SUPERINTENDENT

In this issue of the Maritime Farmer will be found an article by T. G. Hetherinton, New Brunswick Live Stock Superintendent, dealing with "Present and Future Livestock Activities in New Brunswick."

Mr. Hetherington is a native of Queens County, where he spent his boyhood days, as do many of our young men in rural communities—farming in summer and lumbering in winter. Then came the lure of the west where he spent a number of years until meeting with a serious accident which temporarily incapacitated him for the endurance of excessive muscular strain.

He returned home and while recuperating turned his attention to study with a view to taking a college course in either forestry or agriculture, the two industries with which he had been so closely associated since boyhood. Agriculture presented the most attractive features and consequently he entered McDonald College, St. Anne de Bellevue, from which institution he graduated, after specializing on live stock, with the degree of B. S. A., in the spring of 1917. On graduating he accepted a position on the staff of "Farm and Dairy", Peterboro, Ontario.

Just about this time Hon. J. F. Tweeddale had been given charge of agricultural affairs in the province and was looking around for a man to take charge of his department's live stock policy. His choice fell upon Mr. Hetherington as a man whose college training coupled with his intimate knowledge of the prevailing conditions in the province, eminently qualified him for the position of Live Stock Superintendent. Mr. Hetherington accepted the position in the summer of 1917. The energy and enthusiasm he has put in his work is responsible for the steady improvement that has taken place in the upbuilding of the live stock industry of the province during the past year.

There are a great many progressive live stock men in the province of New Brunswick who co-operate with Mr. Hetherington in his work. The problem of getting the disinterested into the ranks of the interested, however, confronts the agricultural leaders in New Brunswick just the same as in the other provinces. There is a mighty lot of work to be done during the next few years if New Brunswick is to attain and maintain its rank in the live stock industry. Let all pull together with Mr. Hetherington to attain this goal.

Year by year numbers of our New Brunswick men who were in the farmer-lumberman class are no longer dividing their energies, but are of necessity putting all their efforts into their farming operations. Live stock husbandry, the key note of a sound and sane farming policy must have the attention that its importance merits. It is safe in Mr. Hetherington's hands.

THE CONTROL OF BOVINE TUBERCULOSIS

By M. Cumming, B.S.A., Principal, Agricultural College, Truro

The herd of cattle at the College of Agriculture, Truro, Nova Scotia, was placed under the "Bang" system for the eradication of tuberculosis in the year 1911. Fortunately, we had a barn removed about half a mile from the main barns and we decided to place the reacting cattle in this barn. We fancy that our successful experience with the tuberculin test since we began the system is partly attributable to the fact that the reacting cattle were kept so far away from the non-reacting cattle.

The non-reacting cattle are kept in the main stock barns and are tested twice a year. During the past six years there have been a number of tests when there were no reactions whatever in this herd, but occasionally we do get some reactions which are difficult to understand, and up to date we have no adequate explanation. Whenever any reaction does occur, the reactor is at once removed to the reacting herd.

The cows of the reacting herd are, as already stated, kept in a separate barn and are pastured separately. Their calves are removed immediately and brought to the main stable. Up to the present time only an odd one of these has reacted to the tuberculin tests which are commenced when they are one year old and continued regularly at six-month intervals after that.

The milk from the reacting herd is all pasteurized and separated, the cream being used in the ordinary way and the milk being fed to calves and pigs. Our herdsman is of the opinion that this pasteurized milk is not quite as satisfactory as the normal milk, but, none the less, the difference is not great.

Our experience in buying cattle has not been very satisfactory. Since we began the system, we have always bought subject to the tuberculin test but, fortunately for ourselves, have also adopted the principle of placing the newly purchased animals by themselves for at least three months, after which they are re-tested. Unfortunately, quite a percentage of these animals after passing the test at time of purchase, reacted three months later, and still more unfortunately, some of those that passed this second test and were then placed with the main herd, reacted subsequently. For this reason we have been careful in regard to purchasing, and, in fact, have added no females to the main herd for a number of years, confining our purchases entirely to males.

We have had some seven years' experience with tuberculin testing followed in a systematic way, and yet there are some problems connected with the procedure which we do not fully understand. For example, there are occasional reactions in the main herd for which we have no explanation to give. But, however, that may be, we are highly satisfied with our experiences with tuberculin testing, and consider that it should be much more extensively adopted. However, there is no use shutting one's eyes to the fact that the person who adopts this must temporarily have to stand a substantial loss, but ultimately the fact that such person has a healthy non-reacting herd is bound to prove to his financial advantage.

The most successful breeders of pure-bred live stock are men who do not sell the young animals that definitely excel the parents. High prices do not tempt, nor equal merit in other herds or flocks concern such makers of breed history. It is with their own familiar animals that they produce the best results, for no matter how excellent the purchased animal may be, it seldom produces as good results in carrying forward the breeder's ideals of improvement.

There is no rule to lay down in the matter of shoeing. Every horse owner should use his own judgment. But when it is found necessary to protect the foot or to prevent the horse from slipping when the roads are icy, not a moment should be lost to have the horse properly shod.

The Basis of Profitable Dairying

The influence of feed on the production of milk is striking. No matter how good the individual dairy cow is, the quantity of milk she yields is, within wide limits, directly dependent upon the feed she receives.

If a cow is subjected to feed of poor quality, unpalatable and indigestible, no matter how much she may be fed, she is sure to go away down in her production and will not yield any profits. Such a cow becomes a "boarder"—that is why our experts have compounded a mixed feed, properly balanced according to the needs of the dairy cow, rich in milk-producing nutrients, with a high percentage of these nutrients in digestible form.

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a rich feed, but not too concentrated to feed alone and when fed liberally to dairy cows it will get the highest production possible with the least cost. There is no wastage in Monarch Dairy Feed—every pound has milk-producing value in it and more of it goes to the actual production of milk than of other feeds because such a high percentage of it is digestible.

Monarch Dairy Feed is composed of Oil Cake Meal, Cotton-seed Meal along with Bran, Barley feed and Corn feed. The mixture of Oil Cake and Cotton-seed Meals counteracts the constipation that would be caused by Cotton-seed Meal if fed alone.

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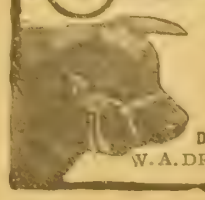

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THE ROLE OF WATER IN A DAIRY COW'S RATION

By Larsen, C., Hungerford, E. H. and Bailey, D. E., in South Dakota State College of Agriculture and Mechanic Arts

Some dairymen claim that if the amount of drinking water given to a cow is limited, the body temperature is raised and the composition of the milk modified, the percentage of fat especially being increased. In order to verify this assertion the authors undertook a series of experiments (1) on the effect of watering cows at different intervals with varying quantities of water on the following factors: amoun of food consumed, digestibility of food, quantity and composition of faeces and urine, quantity and composition of milk, composition and quality of butter fat, body temperature and physical condition of the cow. Data on the mineral metabolism of the cow were also obtained. The experiment, carried out on four animals, was divided into three periods, separated by a period in which the ration was normal. In the first period the animals were watered every 24 hours (an average of 61.65 lb. per head), in the second period every 60 hours (an average of 51.20 lb. per head), in the third period with half the normal ration of water (40.00 lb. per head).

A series of tables gives:—Composition of feed and water; weight of animals, amount of food consumed and daily milk yield, coefficients of digestibility of the rations, amount of water drunk and food digested daily, daily amount and composition of the faeces, relation of amount of water to dry matter consumed, average daily amounts and composition of the urine and the milk, analysis of butter fat, average temperature of the shed and cows, effect of room temperature on the total amount and percentage of fat in the milk; food constituents digested per 1,000 lb. of live weight daily, daily energy requirements per 1,000 lb. live weight, distribution of water in the cow's body, average daily rations and balance of food nutrients in the three periods of the experiment.

Results.—(1) **Food consumed.**—When the cows are watered once in 24 hours instead of two or three times there is a sight decrease in the total amount of food taken and in the quantity of milk produced, but this second decrease is not proportionate to the first. During the 30 days of the experiment the animals lost an average of 11 lb. per head. This loss was much greater during the second test (17 lb.) and the third (95 lb. per head on an average).

During the periods in which the cows received a full ration of water at long intervals, the expected decrease in milk production was not obtained. If the slight decrease in the amount of food consumed and the loss in weight be considered it must be concluded that cows can utilise the water stored in their systems for milk production and other functions. When the cows only received half the normal quantity of water (test 3) there was a marked decrease in the amount of hay consumed, milk produced and in body weight.

(2) **Digestion of rations.**—The coefficient of digestibility was increased in each of the tests in which the intervals between watering were lengthened and in those in which the cows only received half the normal ration of water. This increase in the coefficient of digestibility is particularly marked in the case of crude fibre. Cows watered once in 24 hours digested 55% of crude fibre as compared with 54% digested by the control animals watered three times a day; cows watered once in 60 hours digested 71.07% of fibre as against 55.7% by the control animals, and those receiving half a ration of water digested about 2% more than the control animals.

The increase in the digestibility of the nitrogen free extract and of the protein is not regular and is less marked.

As regards the actual amount of crude fibre digetsed, the cows in test 1 digested about 0.09 lb. per head daily, and those in test 2 only 1.26 lb. more than the control animals, those of test 3 digested 1.125 lb. less than the control animals.

Numerous investigations have led to the general acceptance of the theory that the digestibility of crude fibre depends largely on he active bacteria present in the intestinal tract and the action of the digestive juices. It is probable that an increased amount of water retards acterial action in digesting crude fibre, and that a decreased more concentrated and, therefore, more efficient and makes the chyme firmer and slower in moving through the digestive tract so that it is expcsed for a longer period to the action of the secretions in the tract.

These results show that to obtain the most efficient digestion of food it is wise not to water the animals too abundantly at feeding time or immediatel y before or after a heavy meal.

(3) **Effects of the quantity of water ingested on the composition of the excreta.**—The percentage of water in the faeces and the urine varies but little with the different quantities of water ingested; theer was almost no difference between the faeces of the control animals and thos in tests 1 and 2; in test 3 there was a decrease of about 2%. Frequent watering seems to have no appreciable effect on the composition of the faeces except that lengthening the intervals between drinking slightly reduces the crude fibre. When the cows only received half the normal ration of water there was an increase in the protein, nitrogen-free extract and crude fibre contained in the faeces.

When the cows received an unlimited supply of water three times a day they drank 3.5 lb. for every pound of dry matter consumed, when watered once in 60 hours they drank 2.38 lb. per pound of dry matter, and when receiving half the normal ration of water every 24 hours they drank 1.8 lb. per pound of dry matter.

(4) **Effect of the quantity of water ingested on the quantity and composition of the milk.**—In all the tests the composition of the milk and butter fat remained absolutely unchanged. It is for this reason that a cow receiving insufficient water goes dry without there being any modification in the composition of her milk. Frequent watering has little influence on the quantity of milk produced. When the normal water ration was reduced by half the milk yield was reduced a little at the beginning, this reduction increasing as the experiment continued till it was aout ¼. There is no doubt that the cows would have gone dry if this ration had been continued.

(5) **Effect of water on the body temperature of the cow.**—When the cows were watered every 24 hours the body temperature was lowered by the fraction of one degree Fahrenheit 15 minutes after watering. With intervals of 60 hours the temperature droppen 2°F. The minimum was obtained 1 to 1½ hours after watering (130 lb. of water per head). The temperature of cows receiving half the normal ration of water was 1°F. higher than when the received a normal amount; but there was no increase in the fat content of the milk.

During a special experiment the cows were exposed to room temperatures varying from 51 to 104°F. It was found that the fat content tends to increase with the body temperature, though the increase is but slight; about 4.4% for 69°F. and 5.04% for 104.8°F. Since, however, high temperature slightly reduces milk secretion, the total amount of fat increases in inverse ratio to the percentage, in the case quoted from 11.2 lb. to 10.2 lb. per head daily. In conclusion it may be said that keeping dairy cows in milk in hot sheds, blanketing them and withholding water in order to raise the fat content is very dangerous to their health.

(6) **Physical condition of the cows.**—The abnormal conditions brought about by withholding water were nervousness, gauntness and high body temperature. When the animals were watered every 60 hours and when they received half the normal ration of water a larger amount of energy was required to accomplish the body functions.

(7) **Chief functions of water in a dairy cow's ration.**—The results of their experiments led the authors to the following conclusions:—A good dairy cow probably requires more water than any other domestic animal. Water dissolves food (for this reason the more food an animal eats, the more drink it requires), distributes it to the different parts of the body and removes the waste products. The auhors showed that more than 12% of the total water drunk is eliminated through the skin in winter in the shed, and 27% in August; 56% of the water drunk is eliminated in the faeces and 15% in the urine. On an average, 15% of the water drunk passes into the milk (in good milkers this percentage is higher; in one of the experiment animals, among which there were no choice cows, this percentage was 24%). Water regulates the body temperature; the loss of water through the body was twice as great in August as in January.

(1) The effect of varying quantities of water in the ration or the composition of milk has been studied by many authors. Turner, Shaw, Morton and Wright compared experimentally:—(1) a full allowance with a limited allowance of water; (2) a heavy ration of turnips with a dry roughage ration; (3) wet beet pulp with dry beet pulp; (4) green clover with cured hay. They proved that, though individual cows produced milk with an abnormal fat content, the different rations did not as a rule influence either the quantity or the composition of the milk.

Gilchrist (Variations in the Composition of Milk and their Probably Causes, Durham County Council Education Committee Reports, Dairy Investigations, Offerton Hall, pp.7-27: 1909) found little or no difference in the quantity and quality of milk produced by cows either on pasture or a heavy mangel ration and that produced by cows on a ration of hay and grain.

Armsby found that cows drink more when fed a heavy protein ration than when fed a low protein ration, and that cows fed dry roughage drink about 40 lb. more water per day than those fed green hay. (Authors.)

The Ottawa Valley Journay of December 4th says:—

"A number of dairymen in the Chesterville district have commenced to send milk to Montreal again where they are getting higher prices for it than is being paid by the local condensery. The condensery during the month of November paid $2.70, but it has promised the farmers an increase for December, bringing the price up to $3.00 per 100 lbs."

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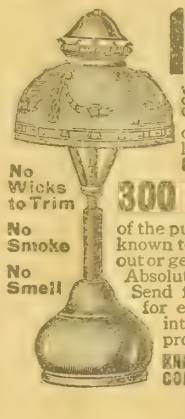

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THE HORSE

ANOTHER "FLU" AN EQUINE DISEASE THAT IS CAUSING GREAT LOSS AMONG HORSES

Although the serious epidemic of influenza now affecting the human family has no relation to the disease of the same name which affects horses, specialists of the United States Department of Agriculture point out a resemblance of symptoms and course of the disease in each instance.

Equine influenza is a common disease in the large cities of the country, affecting horses which pass through infected stables of dealers. Only, however, under certain influences not understood and when large numbers of horses in commercial channels are exposed to contagion, does it assume an ezootic or epizootic form. Unlike certain other infectious diseases, one attack of influenza does not grant a lasting immunity. However, previous attack or attacks or other unassignable reasons apparently make old horses less susceptible than young ones.

An Old Disease of Horses

History indicates that this disease has been recognized in various outbreaks of several hundred years past Even before the Christian Era, a severe epizootic believed to be influenza, is rcorded as having occurrd in Sicily, and again in A.D. 1301, it spread over a considerable portion of Italy, causing great loss among the war horses of Rome. In 1648 the disease affected Germany and spread to other parts of Europe, and in 1711 it followed the tracks of the great armies all over Europe, causing immense losses among the horses. Other extensive outbreaks obtained at intervals from 1813 to 1883, one of which was that of 1870-73 ,in connection with the Franco-Prussian War. The first recorded appearance of equine influenza in North America was in 1766. Probably the most severe outbreak, however, was that of 1870-72, when it spread over the entire country from Canada, south to Ohio, and then eastward to the tlantic coast and westward to California, although the severity of the outbreak of 1900-01 should not be overlooked. In these epizootics, there was a heavy loss of horses, and being prior to introduction of the motor truck in city commerce, business in the great commercial centres of the country was seriously inconvenienced and in some cases practically suspended for lack of available horses.

Like the influenza epidemics in the human family, epizootics of equine influenza are difficult to control. The true primary cause of the disease has not been established, though it is generally believed to be due to a specific germ, too small to be detected under the highest power misroscope. It certainly has the characteristic of extreme diffusibility, leading to spread of disease over a large area of the country in a few days, the outbreak running its course despite all efforts to prevent it, and the infection gradually subsiding without assignable cause.

Symptoms of the Malady

The symptoms are those of fever, in some cases, preceded by a chill. There is great prostration and depression of muscular force; the visible mucous membranes, especially those of the eye, becomes a deep saffron, ocher, or violet red color, from which fact the term "pinkeye" has been given the disease. There is a great diminution or total loss of appetite and a rapid loss of flesh, which frequently reaches 30 to 75 pounds for each 24 hours. In complicated cases, the fever abates after 6 to 10 days, and there is a general restoration to health. The death rate is relatively low (during the epidemic of 1872 varying from 2 to 7 per cent.), the higher rate occurring among city horses. The complications are many and sometimes serious. Among such are those of the intestines and lungs. Pneumonia, one of the frequent complications, is always serious, as it affects the animal when reduced in strength and resisting power.

High Death Rate from bad Ventilation

The great propagating fields for "flu" among horses are the badly ventilated barns, that have no outlet for the vitiated air. All animal life on the farm requires oxygen in the system to enable them to resist disease. In close and badly ventilated barns this natural operation is restricted and the inmates are an easy prey to disease germs.

Inquiry as to the cause of so many deaths among horses in France, from influenza, led the French Government to enforce measures of better ventilation in barns. A census was taken—previous to the war—of the death rate of horses and as many as 126 per 1,000 annually died from pneumonia and 26 per 1,000 from glanders. After the measures for better ventilation were fully undertaken the death rate from pneumonia fell to 4 per 1,000 and 2 per 1,000 from glanders. The oxygen of the air is free to all and to exclude it from the barn is to court disease and death. Good ventilation does not mean cold drafts of air; it aims to have the same freshness and health-giving qualities in the barn as is to be found in the sunlight and freedom of the open field.

STRANGLES IN ARMY HORSES

Of all the infectious and contagious diseases affecting army horses, strangles or distemper no doubt ranks among those which cause the most trouble. It more often affects the young horses and is characterized by swellings under the throat which usually develop into abscesses of the lymphatic glands. The complications that develop are bad enough under ordinary conditions, and many of them are very serious, but those that affect army horses are much worse as a rule and more often fatal. This is due to the many conditions that the animals are subjected to during shipment. Sale barns and stock yards are badly contaminated with the infection. Vigorous campaigns were started among the contractors furnishing animals to the Government, but it was difficult to secure cooperation and assistance from stockyard companies and from the railroads.

It would seem that an animal sick with strangles is easily recognized under normal conditions, but at the time of purchase the secretions from the eyes and nose are cleaned off and the parts washed, and sometimes the insids of the nostrils are greased, The animal may be given a stimulant as large as he can stand. He is spurred on with the whip and is so excited that it is very hard to detect any symptoms of sickness about him. Purchasing officers should do away with as many unnatural conditions as possible and better animals would surely be purchased.

In the campaign for the better sanitary conditions for the inspection and purchase of animals for army use the following regulations were carried out: From barns where horses or mules are tied the manure is to be removed daily; the watering trough to be scrubbed daily and disinfected once each week; the feed-troughs to be cleaned each week and disinfected; the owner of the animal to inspect the animals daily and any showing signs of shipping fever to be removed to a hospital and remain until recovery or death. The stalls from which such animals have been removed should not be occupied again until they have been thoroughly cleaned and disinfected. This should be done within 12 hours. Receiving and shipping pens ,if uncovered, must be kept reasonably clean and disinfected semi-annually. If they are covered they must be cleaned and disinfected monthly.

Many of the animals purchased were in the incubative stage of this disease and enroute to their destination they became sick. Many of these were held four or five days and sometimes a week before they were shown. The majority of them, however, were shown about the second or third day after their arrival at the contractor's stable. Most contractors favored this, as it gave them an opportunity to fill the animals on hay and water, which greatly improved their appearance. By so doing they

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greatly reduce their percentage of rejcted animals. Contractors are aware many times that the animals they are selling are exposed to the infection of strangles and that they will develop the disease during shipment to the remount depot. It seems as though the Government should very rigidly enforce the sanitary campaign mapped out a few months ago, for should any of the contractors refuse to comply with these regulations it would lessen the number of animals purchased very little, as the shippers would send their animals to some contractor who would keep his premises in such a condition as to be able to secure a contract for furnishing animals for service. The inspection of animals should be performed as soon after they arrive in the market as possible, as this would greatly lessen their chances for taking up the various infections commonly found around the market. Any contractor who purposely and knowingly conceals from the purchasing board the fact that the animal is affected with strangles or any other contagious and infectious disease should be forbidden to furnish animals to the United States. Just how greatly we may profit from the experience of the past winter in the control or prevention of strangles in army animals time alone will tell. Lieut. George H. Conn.

COLT WITH A "STRANGE DISPOSITION"

"I have a grade Belgian colt eighteen months old and well grown that has a strange disposition. He is gentle in every way, but when the least excited seems to go wild. I have noticed this trait through his getting into the wrong stall a time or two, and when he makes this mistake he seems terribly frightened, and is hard to handle. He has never been roughly used; in fact, he has never received a blow or a harsh word, to my knowledge. He does not lead up as he should when haltered, seems suspicious of the man ahead, and has no great respect for the rope; that is, he is hard to handle, and often hangs back or refuses to come at all. How should I bit him so that he will handle well when I come to drive him? At what age should I begin to use the bitting rig, if at all? I should like to make a good sensible horse out of this colt, if possible. His dam is a grade Belgian, easy to handle, although a trifle nervous. The sire is an imported horse, and has no bad habits, so far as I can learn."

It is just possible that the colt's extreme nervousness under excitement comes from heart or brain trouble. The untrainable horse is often so from a physical defect, only revealed by postmortem. Nothing will give a colt more confidence than a whip, intelligently used. Turn the colt loose in a well-fenced yard; a boxstall will not be big enough for one of his disposition. Stand near the centre and pop the whip a little—enuogh so that he will start away from you. Let him run around loose several times, and then begin touching him with the whip on the quarters enough to keep him moving. It needs tact; if he moves very fast and becomes very much frightened just let him run around. As he shows a disposition to stop, move him along, and every time he gets his head away from you, start him up again. After a while he will show a tendency to face you, and you can speak to him encouragingly, if you think best, though for my part I think it best to remain still and silent. Then pop the whip again, and he will probably run off again from you; continue as before, until he again faces you. Do not make the mistake of trying to accomplish everything the first day; if he is very much frightened, be satisfied if he merely faces you, and turn him out again the next day. After a while he will find that though the whip pops and even occasionally stings a little it does not touch him so long as he faces you, and sooner or later he will take a step or two toward you.

This may not seem a great accomplishment for several hours' patient work when by the severe use of the whip you could have brought the colt to put his head on your shoulder in ten or twenty minutes, but the measure of your accomplishment will be the amount of confidence and willingness to come to you that the colt develops. You may now take a step backwards; never move toward the horse, and if he follows you, quit for until he will come to you and follow you without the halter. Then halter him for the first time in these lessons, but never pull on it; use the whip until he follows the slack rope and teach him some other signal, such as snapping your fingers, though a silent sign of the hand is better. The principle involved is that the animal acts at your (and not his) volition; that, being slightly or greatly afraid of the whip, he comes to you for easement. You can never give confidence to a nervous horse by petting his fears; he considers you the harbor of refuge. The horse at first is afraid of the whip in your hand or he must be made slightly afraid of it, and gradually to perceive that you have a dual personality that can protect or make things uncomfortable for him, and that he cannot avoid you in the second person. A horse with proper whip handling undergoes an entire mental change and confidence replaces fear to an extent that I believe impossible by any other process.

Having taught the horse to come to you with the whip, do not fall into the common error that he will go away from you by the same indication, until you have further trained him, and that the whip like the reins has many functions.

A colt can be bitted at any age, if the lessons are short enough, and the means suitable to his age be adopted.

L. OGILVY.

HORSES ARE BAD WITH MUD FEVER

Mud fever or scratches is generally caused by exposure to mud or water, melting snow, neglect of grooming, and is many times accentuated by constitutional predisposition. In a case so bad as you describe, you will require to clip the hair close to the skin, bathe in warm water, then apply a warm poultice of scalded bran twice in 24 hours. After the scabs have been removed, wash with warm water, wipe dry, then bandage for a short time till legs are thoroughly dry, then apply boric acid, dusting into the sores, afterwards cover with some oily dressing like vaseline, glycerine or castor oil. The only way to prevent the appearance of scratches is to keep the horse's legs and feet clean at all times. Standing in manure when confined to the stall must not be allowed. When they come in from their hitching up, if legs and feet are muddy, dry them as well as possible, but do not wash them during the cold weather. When they are thoroughly dry groom them well. For the swollen legs bandage firmly when horses comes in from exercise. You should keep your horses in the stable in the meantime until you have got them cured. Give them exercise, but keep them free of mud and filth till better.

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The average price of a farm horse in the United States, all ages included, declined from $145 in 1910 to $131 in 1916. In 1917 the average price went up to $132, but in 1918 the fall was resumed and the average price became $128. In 1910 the price of a farm horse averaged about 240 per cent. higher than the price of a cow; now a horse averages only 50 per cent. higher.

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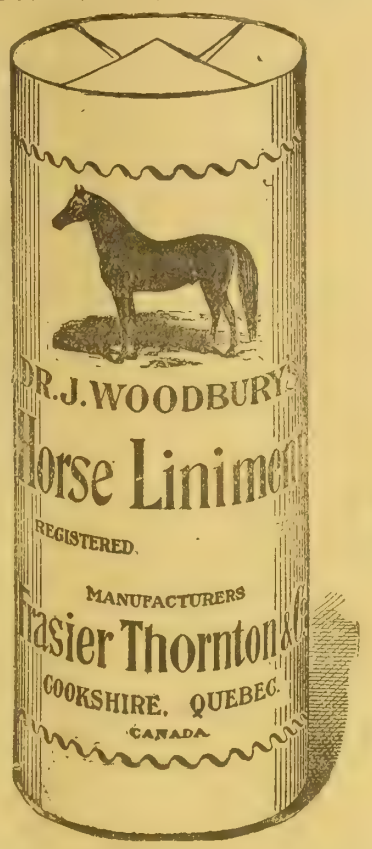

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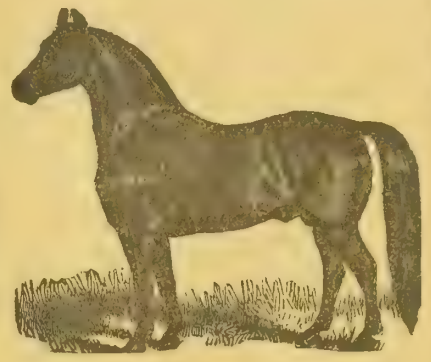

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DELIGHTED

Maritime Farmer:

I am sending herewith a list of the prize winners of the Colchester County Poultry Show held in Truro, Dec. 17th, 18th and 19th and would be obliged to you if you could make any use of it in the Poultry pages of your paper.

After the experience of a good number of years with Poultry and Poultry Shows I have no hesitation in saying that the show which we held in Truro on the above dates was the best exhibition of Pure Bred Poultry for collection in any one County Show. A great many of your readers would be interested in knowing where to obtain both stock and eggs between now and next summer and I think it would be a very good advertisement to refer to your paper to obtain this information.

I trust you can see your way clear to insert this and oblige.

Yours truly,

J. P. LANDRY.

[Editors Note : — The Maritime Farmer is pleased to publish the list of prize winners at the Colchester County Poultry Show as submitted by friend Landry. We will also be pleased to hear from other heads of departments in any of the three provinces. The Maritime Farmer can assist the heads of departments to give publicity to any movement they may wish brought to the attention of the public.]

Prize Winners at the Colchester Poultry Club Show

Anconas

Cock.—1st, W. J. McKinnon, Truro; 2nd, C. J. Cock, New Annan, N. S.;
Hen.—1st, C. J. Cock; 2nd, Edward Stevenson, Truro.
Cockerel. — 1st, Alfred E. Crowe, Truro; 2nd, C. J. Cock.
Pullet.—1st, C. J. Cock; 2nd, Alfred Crowe; 3rd, Alfred E. Crowe; 4th, C. J. Cock; 5th, W. J. McKinnon.

Andulasians

Cock.—1st, Joseph F. Carnell, Stewiacke; 2nd, C. J. Cock.
Hen.—1st Joseph F. Carnell; 2nd, C. J. Cock.
Pullet.—1st, Joseph F. Carnell; 2nd, Joseph Carnell.

Braham, light and dark

Cock.—1st, Joseph F. Carnell.
Hen.—1st, Joseph F. Carnell.
Pullett.—1st, Joseph F. Carnell.

Black Spanish W. F.

Hen.—1st, H. D. Robertson, Truro.

Campines, Gold and Silver

Cockerel.—1st, Wm. Gazley, Truro; 2nd, Miss Jennie L. Walker, Truro.
Pullet.—1st, Joseph F. Carnell; 2nd, Joseph F. Carnell.

Games, any variety

Cock.—1st, C. B. McMullen, Truro; 2nd, W. J. McKinnon.
Hen.—1st, C. B. McMullen; 2nd, W. J. McKinnon; 3rd, W. J. McKinnon.
Cockerel.—1st, Joseph F. Carnell; 2nd, C. B. McMullin.
Pullet.—1st, C. J. Cook; 2nd, R. A. Mingie, Truro; 3rd, Joseph C. Farnell.

Houdans

Hen.—1st, H. D. Robertson, Truro; 2nd, H. D. Robertson.
Cockerel.—1st, H. D. Robertson; 2nd, H. D. Robertson.
Pullet.—1st, H. D. Robertson; 2nd, H. D. Robertson.

Leghorns, S.C.W.

Cock.—1st, L. J. Walker, Truro; 2nd, Edward Stevenson.
Hen.—1st, Edward Stevenson; 2nd, Henry Waller, Truro.
Cockerel.—1st, Edward Stevenson; 2nd, Edward Stevenson.
Pullet.—1st, Geo. Retson, Brookside; 2nd. Edarwd Stevenson.

Leghorns, R.C.W.

Cock.—1st, Sydney Cable, Truro.
Hen.—1st, Sydney Cable; 2nd, Sydney Cable.
Cockerel.—1st, Sydney Cable; 2nd, Sydney Cable.
Pullet.—1st, Sydney Cable; 2nd, Sydney Cable.

Leghorns, S.C.B.

Hen.—1st, Robert Pubilcover, Truro;
Cockerel.—1st, Joseph F. Carnell.
Pullet.—1st, Joseph F. Carnell; 2nd, Joseph F. Carnell.

Leghorns, R.C.B.

Cockerel.—1st, Edward Stevenson; 2nd, Edward Stevenson.
Pullet.—1st, Edward Stevenson; 2nd, Edward Stevenson.

Black Leghorns

Cock.—1st, L. J. Walker; 2nd, L. J. Walker.
Hen.—1st, Henry Waller, Truro; 2nd, H. D. Robertson.
Cockerel.—2nd, L. J. Walker.
Pullet.—1st, L. J. Walker; 2nd. L. J. Walker.

Leghorns, any other variety

Cockerel.—1st, Joseph F. Carnell;; 2nd, Wm. Gazley.
Pullet.—1st, Wm. Gazley; 2nd, Wm. Gazley.

Minorcas, any variety

Cock.—1st, C. J. Cock; 2nd, Wm. Seaman, Bible Hill.
Hen.—1st, C. J. Cock; 2nd, C. J. Cock.
Cockerel.—1st, C. J. Cock; 2nd, J. W. Nairn, Truro.
Pullet.—1st, C. J. Cock; 2nd, C. J. Cock.

Langshams, black or white

Cockerel.—1st, H. D. Robertson;
Pullet.—1st, H. D. Robertson; 2nd, H. D. Robertson.

Orpingtons, Buff

Cock.—1st, C. J. Cock.
Hen.—1st, H. D. Robertson; 2nd, C. J. Cock.
Cockerel.—1st.C. J. Cock; 2nd, Edward Stevenson.
Pullet.— 1st, C. J. Cock; 2nd, Edward Stevenson.

Orpingtons, White

Cock.—1st, Geo. Retson.
Hen.—1st, Robert Wotherspoon, Lower Truro; 2nd, Robt. Wotherspoon.
Cockerel.—1st, C. J. Cock; 2nd, Geo. Retson.
Pullet.—1st, Geo. Retson.

Plymouth Rock Barred

Cock.—1st, Alfred Johnson, Lower Truro; 2nd, L. J. Walker.
Hen.—1st, W. J. McKinnon; 2nd, W. J. McKinnon; 3rd, W. J. McKinnon; 4th, W. J. McKinnon; 5th, John Suckling, Truro.
Cockerel.—1st, W. J. McKinnon; 2nd, John Webb, Bible Hill; 3rd, J. W. Nairn, Truro.
Pullet.—1st, W. J. McKinnon; 2nd, W. J. McKinnon; 3rd, W. J. McKinnon; 4th. John R. Semple & Son, Salmon River, N. S.; 5th, John R. Semple & Son.

Plymouth Rocks White

Hen.—1st, W. J. McKinnon; 2nd, W. J. McKinnon.
Cockerel.—1st, Earnest R. Dourley, Stewiacke; 2nd, C. J. Cock.
Pullet.—1st, A. F. Wilson; 2nd, Alfred E. Crowe.

Plymouth Rock, any other variety

Hen.—2nd. C. J. Cock.
Cockerel.—2nd. C. J. Cock.

Polands, any variety

Cock.—1st, C. J. Cock.
Hen.—1st, C. J. Cock; 2nd, C. J. Cock.
Cockerel.—1st, C. J. Cock; 2nd, C. J. Cock.
Pullet.—1st, C. J. Cock.

Rhode Island Reds

Cock.—1st, William Retson; 2nd, C. J. Cock.
Hen.—1st, William Retson; 2nd, C. J. Cock.
Cockerel.—1st, Wiliam Retson; 2nd, Wiliam Retson; 3rd, William Retson; 4th, C. J. Cock; 5th. William Retson.
Pullet.—1st, William Retson; 2nd, William Retson; 3rd. William Retson; 4th. Wiliam Retson; 5th, Robt. Wotherspoon.

Rhode Island Reds R. C.

Hen.—1st, H. D. Robertson; 2nd, C. J. Cook.
Pullet.—1st,William Retson; 2nd, William Retson.

Sussex Speckled

Hen.—1st, W.J.McKinnon; 2nd, W.J. McKinnon.
Cockerel.—1st, Frank Strudwick; 2nd, Frank Strudwick.
Pullet.—1st, Frank Strudwick, Bible Hill; 2nd, John McMullen; 3rd, John McMullen.

Wyandots, White

Cock.—1st, C. J. Cock; 2nd, C. J. Cock.
Hen.—1st, Allison A. Cumming, Bible Hill; 2nd, Edward Stevenson; 3rd, Allison A. Cumming.
Cockerel.—1st, W. J. McKinnon; 2nd, C. J. Cock; 3rd, Wm. Seaman.
Pullet.—1st, Thos. Hopper, Bible Hill; 2nd, W. J. McKinnon ; 3rd, Wm. Seaman; 4th, C. J. Cock; 5th, Allison Cumming.

Wyandots, any other variety

Hen.—1st, H. D. Robertson; 2nd, H. D. Robertson.
Cockerel.—1st, C. J. Cock; 2nd, C. J. Cock.

Any other variety

Hen.—1st, C. J. Cock.
Cockerel.—1st, C. J. Cock; 2nd, C. J. Cock
Pullet.—1st, C. J. Cock.

Breeding Pens

Wyandots, White Fowls.—1st, Wm. Seaman; 2nd, R. A. Mingie.
Wyandots, white chickens.—1st, Wm. Seaman; 2nd, Henry Miller; 3rd, W. J. McKinnon.
John Suckling.
Plymouth Rocks. Barred Chickens.—1st, Alfred Johnson; 2nd, John Webb.
Plymouth Rocks, A.O.V. Chickens.—1st, Henry Waller.
Leghorns, White Fowls.—1st, A. F. Wilson.
Leghorns. White Chickens.—1st, Edward Stevenson; 2nd, Geo. Retson.
Leghorns, A.O.V. Chickens.—1st, Ernest McLaughlin, Truro.
Rhode Island Reds, Fowls.—1st, Wm. Retson.
Rhode Island Reds. Chickens.—1st, Wm. Retson; 2nd, R. A. Mingie; 3rd, H. D. Robertson.
Minorcas, any other variety, fowls.—1st, H. D. Robertson; 2nd, H. D. Robertson.
Minorcas, any other variety, chickens.—1st, H. D. Robertson.
Sussex, any variety, Fowls.—1st Frank Strudwick.
Sussex, any variety Chickens.—1st Frank Strduwick; 2nd, Frank Strudwick.
Anconas, Chickens.—1st, C. J. Cock
Game, any variety Chickens.—1st. C
B. McMullen; 2nd. R. A. Mingie.

Utility Pairs

White Wyandots, Cockerels.—1st, C J. Cock; 2nd. W. Seaman; 3rd. Tjos F. Dunlap, Lower Truro.
White Wyandots, Pullets.—1st, C. J Cock; 2nd, J. W. Mairn.
Plymouth Rocks, aBrrde Cockerels.—1st, John R. Semple & Son; 2nd John Wright, Bible Hill; 3rd. Alfred Johnson; 4th, C. J. Cock; 5th, Wm Seaman.
Plymouth Rocks, Barred Pullets.—1st Alfred Johnson; 2nd, C. J. Cock; 3rd. John R. Semple & Son.
Plymouth Rocks A.O.V. Cockerels.—1st. C. J. Cock.
Plymouth Rocks, A.O.V. Pullets.—1st A. F. Wilson; 2nd. Alf. E. Crowe.
Orpingtons, Buff Cockerels.—1st, C. J. Cock.
Orpingtons. Buff Pullets.—1st, C. J. Cock; 2nd. John Suckling.
Rhode Island Reds. Cockerels, 1st William Retson; 2nd. C.J. Cock.
Rhode Island Reds. Pullets.—1st, Wm. Retson; 2nd. C. J. Cock.
Sussex. any variety. Cockerels.—1st Frank Strudwick; 2nd. Frank Strudwick..
Sussex. any variety. Pullets — 1st. Frank Strudwick; 2nd, Frank Strudwick.

Game Bantams

Cocks.—1st. Walter Ross.
Hen.—1st. Walter Ross.
Cockerel.—1st. Walter Ross.
Pullet.—1st. Walter Ross.

Cochin Black Bantams

Cock—1st Ernest McLaughlin.
Hen.—1st, Ernest McLaughlin.

Pigeons

Best collection pair of pigeons for breeding squabs.—1st, C. B. McMul-

It was a puzzle to me

I had a few dollars in the bank and was saving a little all the time, but without any definite plan. I looked at my neighbors, some of them men of means and wondered what they did with their money, their extra money, I mean. I supposed they invested it somehow, but how? That was the question and I was too bashful to ask.

One day, however, I read of a man who had been paying an instalment of $87.25 a month for a year and a half and had actually made $136 in interest on his payments during that time, while at the end of the eighteen months he was the possessor of 15 shares Canadian Pacific Railway Company Stock and in receipt of a dividend cheque for $37.50 every three months.

That was $150 a year, all made by a small Systematic Investment account with J. M. Robinson & Sons, Members of the Montreal Stock Exchange and doing business in Montreal, St. John and Fredericton.

To make a long story short that ended my puzzle—the answer had been found. I opened a systematic account with that house and my savings are earning the full dividend return of my investment. In a few months I shall have paid for and received a certificate for 20 shares of Dominion Iron Preferred and my income therefrom will be $35.00 every three months, $140 a year.

You, too, can follow this simple plan. I am sure that J. M. Robinson & Sons will send their very attractive little booklet explaining the plan, if you will drop them a line to 11 St. John St., Montreal, or to Market Square, St. John, N. B.

Thrift is the Maker of Character

Thrift is patriotic at this time. It is more—it is evidence of practical common sense, sound judgment and prudence, because it shows you are willing to make present sacrifice for future competence.

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Resources . . 130,000,000

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Ducks

Pekin Ducks, under 1 year. male.—1st, C. J. Cock; 2nd, Edward Stevenson.
Female.—1st, C. J. Cock; 2nd, Edward Stevenson.
Rouen Ducks over 1 year, male.—1st, John Wright.
Female.—1st, John Wright.
Rouen Ducks, under 1 year, male.—1st, John Wright; 2nd, C. J. Cock.
Female.—1st C. J. Cock.
Indian Runner, under 1 year, male.—1st, Edward Stevenson.
Female.—1st, Edward Stevenson.
A.O.V. Ducks, over 1 year, male.—1st, C. B. McMullen.
Female.—1st, H. D. McMullen.
A.O.V. Ducks, under 1 year, male.—1st, W. J. McKinnon; 2nd, W. J. McKinnon.
Female.—1st, H. D. Robertson; 2nd, H. D. Robertson.

Geese and Turkeys

African Geese, over 1 year, male.—1st, C. J. Cock.
A.O.V. Geese over 1 year, male.—1st, C. J. Cock.
Turkeys Bronze, over 1 year, male.—1st, C. J. Cock.
Female.—1st, C. J. Cock; 2nd, C. J. Cock.
Turkeys, Bronze, under 1 year, male.—1st, Alfred Johnson; 2nd, C. J. Cock.
Female.—1st, C. J. Cock; 2nd, Alfred Johnson.

Dressed Poultry

Best Pair Plymouth Rock Cockerels or Capons.—1st, Alfred Johnson; 2nd, John R. Semple & Son.
Best pair Orpington Cockerels or Capons.—1st, C. J. Cock.
Best pair Rhode Island Red Cockerels or Capons.—1st, Wiliam Retson; 2nd, C. J. Cock.
Best pair Sussex Cockerels or Capons.—1st,Frank Strudwick.
Best pair A. O. V. Cockerels or Capons having yellow legs.—1st, C. J. Cock.
Best pair Fowls.—st, Wm. Retson; 2nd, C. J. Cock.
Best pair Ducks.—1st, C. J. Cock; 2nd, John Wright.
Best pair Geese.—1st, C. J. Cock.
Best pair Turkeys.—1st, C. J. Cock; 2nd, C. J. Cock.
Best six Cockerels or Capons, any variety.—1st, Alfred Johnson; 2nd, Wm. Retson; 3rd, C. J. Cock.

Eggs

Largest and best dozen brown eggs.—1st, Wm. Retson; 2nd, Wm. Retson; 3rd, C. J. Cock.
Largest and best dozen white Eggs.—1st, Wm. Seaman; 2nd, C. J. Cock.
Largest and best dozen brown tinted Eggs.—1st Wm. Retson; 2nd, C. J. Cock.

CLASS 72

SPECIALS

Donated by Hon. F. B. McCurdy, Silver Cup, for the best exhibit of any one variety of fowls by one exhibitor. This cup is to be won three times before becoming the property of the exhibitor. Won in Jan. 1918 by W. Retson.—Wm. Retson.

Donated by G. H. Vernon, K. C., Silver Cup for the best exhibits of American breeds of poultry. This Cup to be won three times before becoming the property of the exhibitor.

Won in Jan. 1918 by W. Retson.

W. J. McKinnon.

Donated by Mr. J. P. Landry, $2.50 for the best Barred Plymouth Rock hen.—W. J. McKinnon.

Donated by Mr. J. W. Nairn $2.50 for the best Barred Plymouth Rock Cockerel.

Donated by Mr. W. A. Seaman $2.50 for the best utility pair White Wyandots Cockerels in Class 26—C. J.Cock.

Donated by Mr. Alfred Johnson $2.50 for the best utility pair, Barred Plymouth Rock Cockerels, in Class 36.—J. R. Semple & Son.

Donated by Mr. Frank Strudwick $2 50 for the best Speckled Sussex Cockerel.—Frank Strudwick.

Donated by Mr. G. W. Bates $2.50 for the best Speckled Sussex pullet.—Frank Strudwick.

Donated by Mr. Wm. Retson, Bus. of wheat, for the best pair of fowls in Class 26, Cock and Hen.—Wm. Retson.

Bus. of wheat for the best pair of chickens in Class 62. Cockerel and Pullet.—Wm. Retson.

Donated by R. A. Mingle Esq., $2.50 for the best exhibition of White Wyandote Chickens.—Wm. Seaman.

Donated by C. J. Cock Esq., $2.50 for the best pair of turkeys.—C. J. Cock.

$2.50 for the best pair of Indian Game chickens, cockerel and pullet.—½ to Joseph F. Carnell; ½ to C. J. Cock.

Donated by Mr. Dan McInnis, Dry Feed Hopper, for the best Exhibition pen of S. C. Rhode I. Red Chickens.—Wm. Retson.

Donated by The Borden Milk Co., one case condensed cocoa value $6.00, for the best pair of utility cockerels in Class 36.—Wm. Retson.

One case condensed coffee value $6.00, for the best pair of utility pullets in Class 36.—Alfred Johnson.

Donated by The Robert Simpson Co., Ltd., Toronto, Ont., one case of silverware for the best exhibit of dressed poultry in Sec. 12.—Alfred Johnson.

Donated by A. E. Hunt, Esq., umbrella, for the best exhibit of Anconas.—C. J. Cock.

Donated by G. O. Fulton, Esq., Box Stationery, for the best exhibit of Andalusians.—Joseph F. Carnell

Donated by F. L. Snook Esq., 10 loaves bread, for the best exhibit of Brahmas.—Joseph F. Carnell.

Donated by C. F. Cox, Esq., cold blast lantern, for the best exhibit of Spanish.—H. D. Robertson.

Donated by Cummings and Hiltz, umbrella, for the best exhibit of Campines.—Joseph F. Carnell.

Donated by Ryan Bros., pair rubbers, for the best exhibit of Leghorns R. C. B.—Edward Stevenson.

Donated by Cash Shoe Store, pair overshoes, for the best exhibit of Leghorns Black.—L. J. Walker.

Donated by Fraser's Ltd., pair gloves, for the best exhibit of Leghorns, A. O. V.—Wm. Gazley.

Donated by Smith Fraser Esq., box chocolates, for the best exhibit of Minorcas.—C. J. Cock.

Donated by Colonial Fertilizer Co., Windsor, N. S., $2.50 for the best exhibit of Langshans.—H. D. Robertson.

Donated by C. P. Blanchard Esq., bag bran, for the best exhibit of Orpingtons White.—Geo. Retson.

Donated by Alf. Lane, Esq., fishing rod, for the best exhibit of Orpingtons Buff.—C. J. Cock.

Donated by R. McG. Archibald Esq., bag chick feed, for the best exhibit of Plymouth Rocks Barred.—W. J. McKinnon.

Donated by Truro Market Ltd., $2.00 worth of goods, for the best exhibit of Plymouth Rocks White.—W. J. McKinnon.

Donated by W. B. Murphy Esq., 2 boxes chocolates, for the best exhibit of Plymouth Rocks A. O. V.—C. J. Cock.

Donated by Scotia Flour and Feed Co., bag of feed, for the best exhibit of Polands—C. J. Cock.

Donated by J. A. Marven Ltd., Moncton, N. B., box sweet biscuits for the best exhibit of Rhode I. Reds S. C.—Wm. Retson.

Donated by Truro Hardware Co., flashlight, for the best exhibit of Rhode I. Reds R. C.—Wm. Retson.

Donated by Colonial Fertilizer Co., $2.50 for the best exhibit of Sussex speckled.—Frank Strudwick.

Donated by Moxon's Drug Store, box cigars, for the best exhibit of Games.—C. B. McMullen.

Donated by McKenzie's Market, roast of beef, for the best exhibit of Houdans.—H. D. Robertson.

Donated by Colonial Fertilizer Co., $2.50 for the best exhibit of Leghorns S. C. W.—Edward Stevenson.

Donated by Conners Shoe Store, pair felt slippers, for the best exhibit of Leghorns R. C. W.—Sydney Cable.

Donated by R. J. Turner Esq., jardiniere, for the best exhibit of Leghorns S. C. B.—Joseph F. Carnell.

Donated by John S. Martin Esq., Port Dover, Ont., $5.00 setting of eggs, for the best exhibit of Wyandots white.—C. J. Cock.

Donated by J. E. Sponagle Esq., ½ doz. Cabinet Photos, for the best exhibit of Wyandots A. O. V.—H. D. Robertson.

Donated by Ernest Archibald Esq., rocking chair, for the best exhibit in the egg classes.—Wm. Retson.

Donated by J. D. Cameron Esq., length dress goods, for the best exhibition pen of chickens any variety—Wm. Seaman.

Donated by McCulloch and Creelman, bag of feed, for the best pair of dressed chicken.—Alfred Johnson.

Donated by A. A. Smith Esq., Radio Light Watch, for the best exhibit of Bantams.—Walter Ross.

Donated by H. Chase Esq., $2.50 for the best white Wyandote Cockerel.—W. J. McKinnon.

Donated by C. B. McMullen Esq., bag scratch feed, for the best Exhibition pen of fowls any variety.—Wm. Seaman.

Donated by The News Publishing Co. Ltd., Truro Daily News for 1 year, for the best exhibit of dressed poultry.—C. J. Cock.

$2.50 donated by Sydney Cable Esq., for the best S. C. W. Leghorn Cockerel.—Edward Stevenson.

Donated by Geo. H. Johnson Esq., Ingersol Watch, for the best exhibit in Class 33.—C. J. Cock.

Donated by The Canadian Rhode Island Red Club to its members. Handsome ribbons, for the best cock, best hen, best cockerel, best pullet, best pen and best exhibit in each of Single Comb and Rose Comb Reds.—William Retson.

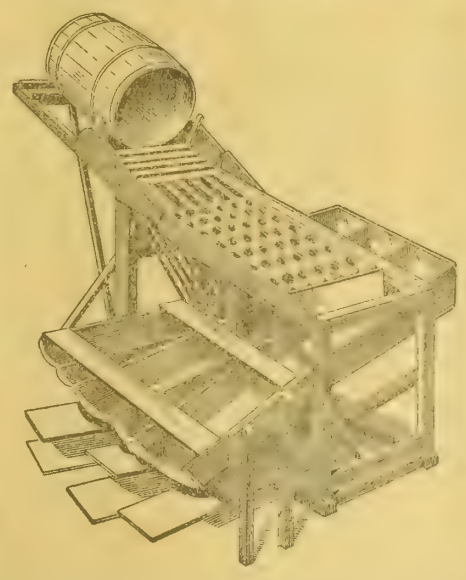
Donated by The Canadian Poultry Journal per R. H. Essex Esq., one year's subscription of the Journal, for the best exhibition pen of the following breeds, Speckled Sussex Chicken, Barred Rock Chicken, Rhode I. Red fowls and White Wyandot fowls.—Wm. Seaman, Frank Strudwick, Wm. Retson, Alfred Johnson.

The following contributions have been received and are absorbed in the general prize list.

Col. Co. Local Representatives	$10.00
Learmont Hotel	3.00
Mr. L. J. Walker	2.00
Mr. John R. McMullen	2.00
Mr. John Ross	1.00
Mr. A. Belliveau	1.00
Friends	1.75
Arthur Steven	5.00

The Association takes this opportunity to publicly thank Messrs. Spencer and Gaudet of the Princess Theatre, for the use of the Orpheum for holding their show, and all those who have helped make its 1918 show a success. Also C. B. McMullin for supplying the feed for the poultry during the show.

The Elderkin Fruit Sizer and Grader



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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N. B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

The day of this year will come and go,
As they ever have gone before,
And the weeks and months will surely pass,
And be numbered with those of yore,
The work of our hands will sink and be lost,
In the on-rush of wave and tide,
But our thoughts, and words, and deeds will live,
And forevermore must abide.
—Selected.

"Whom the gods would destroy, they first make tricky....Women are never tricky. Women are diplomatic."
from "The Book of Flossie May Darty"

FLOSSIE MAE, SUCCESSFUL WIFE

By Ellis Parker Butler

A man is mayor of Riverbank two years; and then, if he likes the job and can swing the votes, he may be mayor another two years, and so on endlessly. Mayor Darty liked his first two-year taste. It warmed his heart to be called "Your Honor." It quickened the beating of his heart to think that a descendant of Brian Boru, meaning himself, was ruler of the town. There were other reasons. The salary helped somewhat, but being the Honorable Padraic Darty helped his real-estate business magically. You can be plain Brick Darty and starve, but business will com eto the Honorable Pardaic Aloysius Darty, Mayor of Riverbank. Even the mayor of a small town begins to have henchmen and heelers who bring him business.

But most of all, Darty liked being mayor because it had put Flossie Mae, his handsome wife, near the top of Riverbank society, where she shone but third to the brilliant lights of Mrs. Doane and Mrs. Benderman, who still fought for the leadership.

"Dear soul of my heart," said Brick to Flossie Mae one day as his term neared its end, "do you want to be lady mayoress another term?"

"It is not 'Do I want to be?' Brick", Flossie Mae answered. "It is 'I mean to be.' That is, if you are willing to bear the cares of state that much longer. Are you?"

"I love the glory of it as a cat loves fish," said Brick with a grin. "So that is settled, dear light of the world. Lawyer Bean was here but this morning, sayin the Eight Big Men of Riverbank were well satisfied with me—as I hope the people are—and that I may have the nomination again if I wish it."

"Ah!" said Flossie Mae cryptically.

"I told him I had but to ask the wife of my soul what she desired, before I gave him my answer."

"Ah!" said Flossie Mae again.

"So now he shall have it," said Brick. "I will tell him this afternoon."

Flossie Mae said nothing for a minute.

"Brick," she said then, roughing his red hair with her hand, as she loved to do, "how is our money? Are we doing well? Could I, do you suppose, have another maid at the house, if I could get a good one?"

"Another maid?" he asked. "Sure, queen of the roses. There's nothing I'd like better than to see you with a house full of them, as I have no doubt the castle of Brian Boru was in the old days. Have you decided that Anna is no longer able to cope with the labors of our elegant dwelling?"

Flossie Mae kissed him.

"Anna is a dear," she said, "and I'll never part with her, but if we entertain a great deal this winter, the work may be too hard for her. Leave it to me, Brick dear; the house is my affair, is it not?"

That afternoon Rudge Bean, the cleverest lawyer in Riverbank, came to Darty for his answer and received it. He expressed his joy, with a dozen spasmodic grins, and went back to tell the Eight Big Men that Darty had said he was willing to run again, and Darty did a jig behind his desk. He was one of those who have a lot of boy in them.

The Eight Big Men of Riverbank, who were mighty and usually prevailed, owned the public-service corporations and much else. They had a way of making mayors and unmaking them, and they waited for Rudge Bean in Mr. Doane's office. They had decided to bury Darty so deep that he would never be resurrected.

"We can't put him in our pocket," Bean had said. "He can't be bought. He can't be driven, led or chased. He can't be mesmerized or persuaded. He's a dangerous man for us."

"Why?" old Doane had asked.

"There are a million reasons, more or less," Bean had said, "and one is that he is one of the independent brand of Irishmen; some nine hundred thousand other reasons are the gray-matter cells in the brain of that wife of his, Flossie Mae. She is all for Darty. She is going to try to make a big man of him—a governor or a Senator; and what we want is a man we can handle. We've got to put Darty in a can and solder the lid down tight."

"Well? Who do you offer instead, Bean?" asked Doane.

"We want a man with a dummy wife. We want a lovely nobody. I suggest Samuel Darlington.

The Eight Big Men of Riverbank mused over this name for a few minutes.

"Yes, he will do," said Doane then. "Old family, needy, has to keep up appearances, nothing against him. He'll do. We will begin to boom him today—"

"Oh, no!" said Bean, with his wry smile of cunning. "Never pin-prick an Irishman like Darty. That wild son of emerald sod would rip the world into shreds between now and election-day. No, we'll give him a pleasant narcotic."

"What do you mean, Bean?"

While they bent their heads together, Bean whispered his plan, and they went about the work silently and deftly, as they went about most things. Bean would promise Darty the nomination and the support of the Eight Big Men. He would spur Darty to attack the only other political power—the Gilroy-Penderson crowd—and lead him on to make himself eternally obnoxious to them. Then at the last moment they would "throw" Darty—leave him out of it—and force the nomination of Sam Darlington.

"All on the quiet! Not a peep out of anyone!" said Bean, twisting his face into a smile. "We'll have one surprised Irishman in Riverbank, and he will be as dead as he will be surprised."

Bean hunted up Darty then, and arranged things with him.

"There will be objections," he said. "There will be those who will say you are bound hand and foot by us, but don't worry, Darty. You know what we can do. Your job is to pound Gilroy and Penderson from now until the caucus. Take this attitude—'I don't care who is mayor, so long as it is not one of Gilroy's greedy grafters.' Pound that hard."

"I'll pound it till the cows come home to roost on Riverbank's ship of state with Brick Darty at the throttle once more," said Darty enthusiastically, and Bean went away well satisfied. He grinned an evil grin when he was outside.

Flossie Mae received the news that the Eight Big Men had promised to support Darty and made no unpleasant comment.

"I'm glad it is all settled, Brick," she said. "There's no doubt they can elect whom they choose."

The "whom" was a new one, a touch of elegance she had picked up through associating with Mrs. Doane and Mrs. Benderman. She used it whenever she could.

"Brick," she said presently, "we did not give Anna much last Christmas."

"What?" asked Brick, not catching her meaning at once, for his thoughts were on matters of grandeur.

"I say we only gave Anna a poor twenty-five dollars and a silk dress and a tortoise-shell comb and a plush-covered hot water bag last Christmas, and she is a faithful servant if ever there was one."

"There was also the gold-handled umbrella and the near-seal purse, angel of the world," said Darty.

"Trifles, Brick," said Flossie Mae, "and I know her heart is set on a sweet gold watch as thin as a lozenge, with her monogram all over one side. The new maid I will have by your permission will be a hoity-toity person, and we must not have Anna feeling jealousy and leaving us. Fifty dollars—"

"Ouch!" said Darty.

"Oh, very well!" said Flossie Mae. "I have a hundred or two of my own, if it comes to that."

There was, however, nothing Darty could refuse his wife, and the watch was bought.

"And see that, now!" said Anna with real tears in her eyes as she looked at the wafer-thin watch in its pretty case. "Sure, you treat me too good, Missus Darty! May God bless the ground you walk on, for you and the boss is the salt of the earth if ever there was one."

"Make us plain Irish, Anna," said Flossie Mae, "for salt kills the green sod, and Darty and I would not wish to do that. I'd not wish to be Lot's wife and no good but to be pounded up to use in the ice-cream freezer."

So they laughed over it, and Anna wiped her eyes and set the watch and thought Brick and Flossie Mae were a king and queen, as they were—as much as any may be in a free land.

The days passed. One evening Brick was sitting in his easy-chair with his shoeless feet propped on another chair before him—as is the inborn right of Irish kings, crowned and uncrowned—when Flossie Mae came behind him. She put the heels of her hands over his ears and covered his eyes with her fingers and bent down and closed his mouth with a kiss.

"What is all this, now?" asked Brick. "Are you making a monkey of the Mayor of Riverbank?"

"One of those Japanese ones," said Flossie Mae. "'See no evil, hear no evil, speak no evil,' Brick. I've seen a worry in your eyes. Are you suspecting things?"

"I am that," he admitted. "When the future of a scion o fthe Irish kings is in the hands of the Eight Big Rascals of Riverbank, and there are rumblings of treason—"

"Brick dear," said Flossie Mae, "it is what I feared! The curse of politics is upon you. Be trusting! Be guileless! I had a dream last night."

"I believe in them when you have them, dear heart of the world," said Brick.

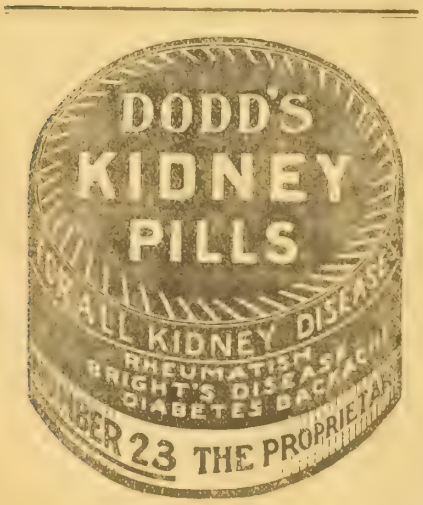
"I dreamed I saw the skins of eight big men nailed to the walls of the humble home of Pat Darty," said Flossie Mae, "but on the roof was the skin of one Rudge Bean stretched out like a parchment, and these words painted on it: 'Remember Flossie Mae!'"

Brick cogitated in silence.

"A wife that has no faith in her husband," he said presently, "and does not tell him the goings-on of her mind, is like a nettle in an undershirt."

Flossie Mae laughed.

"I mean there is treachery afoot, Brick dear," she said; "but forewarned is forearmed. The Eight Big Men and



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"You mean there is treachery. The hand I hardly bit at all when it fed me is going to give me a clout over the head?"

"Listen, Brick," said Flossie Mae. "You don't suppose I gave Anna a watch in mid-year for the pleasure of spending your good money, do you? The man the Eight Big Men mean to run against Miller is Sammy Darlington."

"A well-tailored lapdog," said Brick. "But how do you make that guess?"

"It is no guess, but a certainty, Brick," Flossie Mae assured him. "You know the business Sammy Darlington is in at the moment?"

"Agent for a London tailor," grinned Brick.

"And you know the clothes Rudge Bean wears? They come off a shelf and the white labels have to be cut off them before they can be worn in publice. No tape-measure has touched his form since he was a babe. What would happen if he had a suit made to order?"

"The end of the world," said Brick.

"And that is not due yet," said Flossie Mae. "So I put one and one together—"

"Wiat a bit," said Brick. "You go too fast for me."

"Well, Anna has a brother Joe, has she not?"

"A fine lad, and he has an easy job in the office of Carter, in the Opera House Block," Brick admitted.

"From the window of which he can look down into the office of Rudge Bean," said Flossie Mae, "and eight times this last week Sammy climbed the stairs to the office of Rudge Bean with his sample-book under his arm and held conversations with the right-hand man of the Eight Big Men. Three times he met Doane there, and once it was Doane and Benderman. Now, there are eight good reasons why Sammy Darlington would make a good candidate for mayor. The first is—"

"I know all of them," said Darty. "I have been blind!"

"Continue to be," said Flossie Mae.

She whispered rapidly in his ear, and as she whispered, he grinned and from time to time nodded his head.

"There's none so keen-sighted as them that pretend to be blind," he said at length. "Hang the sign around my neck and fetch me the dog."

"Whom," said Flossie Mae, with an accent on the "whom," "whom the gods would destroy they first make tricky."

"Meaning the Eight Big Men," said Brick, "and not yourself."

"Women are never tricky," said Flossie Mae with a toss of her head. "Women are diplomatic."

Rudge Bean, the cleverest man in Riverbank, was rubbing his hands in gleeful satisfaction and grinning at nothing but his general pleasure with the way things were going at just the minute when Mrs. Doane, in a superb satin morning-gown, came down from her room in her home some two miles from Bean's office. She had had her breakfast in bed and felt well satisfied with life, but as she made the turn in the stairs, she stopped short.

"Mary!" she said sharply.

"Yes ma'am?" the maid answered.

Mrs. Doane could scarcely believe her eyes. Mary was sitting on the hall bench reading the morning paper, when she should have been dusting.

"Are you ill?" asked Mrs. Doane, as if nothing else could account for the girl's remarkable behavior.

"Oh, no ma'am!" said Mary. "I'm quite well. I was just waiting for you to come down. I want to give notice, ma'am."

"Mary! What do you mean?"

"I'm giving notice, ma'am, as plain as I know how, that I'll be leaving you in two weeks," said the girl. "I've a better place offered me, with less work and more wages, ma'am, and a girl must make the best of her chances while she has them."

"Very well!" said Mrs. Doane grimly. "I trust you will not be sorry. Send cook to me."

"Yes ma'am," said the girl, and went to the kitchen.

The cook came.

"You've had no quarrel with Mary, Agnes?" asked Mrs. Doane. "She tells me she is going to leave me. Do you know why?"

"Nothing but the same reason I have, Mrs. Doane," said the cook. "I've been offered an easier place, with less work and better wages; so I will take this opportunity, ma'am, of giving fair notice and warning. Of course, ma'am, I'll let you have the two weeks to find some one—"

"That will do!" said Mrs. Doane sharply. "You may go back to the kitchen. I will speak to you later aobut the matter."

She looked at her wrist-watch and make a brief calculation. Mrs. Benderman, she knew, always did her own marketing,—in state, in the Benderman carriage,—and she should be downtown at this moment. She went to the telephone and called up the Benderman house. Jane, the unexcelled Benderman maid, answered, as Mrs. Doane had hoped she would.

"Is that you, Jane?" Mrs. Doane breathed into the receiver. "Mrs. Benderman is not in? Well, it was you I wanted to speak to, Jane. You know how ilght the work is in my house, and what a pretty room I always have for my maids? I'm letting Mary go, and I thought I would offer the position to you first of all—"

"Yes ma'am," answered Jane. "I'm sure I'm very grateful, but I've made other arrangements. Cook and I gave Mrs. Benderman notice this morning, Mrs. Doane, because we have a better place in view."

"Indeed!" said Mrs. Doane coldly. "You do not think you care to reconsider?"

"No, ma'am—I'm afraid not."

Mrs. Doane hung up. Her face was rather red now, for while she would have been willing to bear the Benderman reproaches if she could have stolen the Benderman maid and the Benderman cook, she dreaded those reproaches when her attempted theft had been unsuccessful. She hesitated with her hand on the receiver and then removed it from its hook and called the Farrington number. She was less lucky here, for Mrs. Farrington herself answered. As a matter of fact, Mrs. Farrington had called the Doane number and was saying "Hello—hello!" When the two ladies heard each other's voices, they were momentarily abashed. Each had hoped to get the other's maid on the wire.

In the eight homes of the Eight Big Men of Riverbank, and in the home of Rudge Bean, nine maids and nine cooks had given notice that morning!

Flossie Mae chose that afternoon to make a few calls—about nine of them. Before she left the house she called Anna to draw down the flimsy underskirt of her gown.

"And they all agreed, Anna?" she asked.

"Every one of them, ma'am—the whole eighteen. You can trust them all, Mrs. Darty, and not one of them will say why they've given notice. It was all agreed and sworn to at the meeting of the Domestic Servants' Union night before last, and they'll be faithful and true to the last. The way I put it to them they'll never give in, for they know no one but Mr. Darty would ever plan to start a Municipal Employment Bureau for us poor girls. Mum is our motto, ma'am, until you give the word."

"That is nice, Anna. I do thank you. Does it hang all right in the back now?"

"Yes, ma'am; it just needed a little pull. It's like I told them, ma'am. The Bureau will be a great thing for all the girls that want places, and by having the nineteen best of us to start with, the Bureau will get a grand reputation immediately, and all of them can get places in a minute, being the best to be had anywhere."

"Exactly!" said Flossie Mae. "I do thank you, Anna."

In making the rounds of her calls, Flossie Mae said nothing of the proposed Municipal Bureau for Domestic Servants. She spoke, with due indolence and negligence, of the success Darty was having in his business, and expressed her gratitude to the world in general for it.

Mrs. Doane, who had the pleasure of her first visit, listened with no great satisfaction.

"I suppose," she said rather sharply, "you'll be hiring another maid or a cook soon."

"Mr. Darty has said he is willing," said Flossie Mae modestly. "He is willing to let me have another maid and a cook now. I've been making inquiries, but I have not decided whom I shall hire."

"Humph!" said Mrs. Doane, and bit

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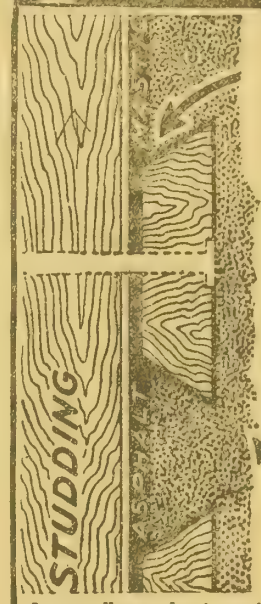

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her lips.

"There are so many good ones," said Flossie Mae, which was not at all true, as Mrs. Doane knew. There were, at the outside, hardly ten good maids in all Riverbank, and not over nine good cooks. Anna was one of the good maids, but the wives of the Eight Big Men of Riverbank were conscious that they had cornered all the others.

Mrs. Doane answered absent-mindedly the words that Flossie Mae spoke during her call. When Flossie Mae arose at the end of her call, Mrs. Doane did not stand.

"Sit down, Flossie Mae," she commanded. "I want to know what is at the bottom of all this."

"All what, Mrs. Doane?" asked Flossie Mae.

"Now, I wont have any of that!" said Mrs. Doane. "I like you, Flossie Mae, and you know it. I took you up when you came to Riverbank and married that terrible red-haired genius that you have made mayor, and I like him well enough too. He is an amusing person."

"He wouldn't be half so amusing if he was not mayor," said Flossie Mae.

"Humph! I thought so! So that is it, is it? Well, who is keeping him from being mayor, if he wants to be?"

"Dear me!" said Flossie Mae. "Nobody, I'm sure!"

"Now, Flossie Mae," said Mrs. Doane, "I know you and your tricks and manners. I've heard enough today to let me see through a grindstone. I've been telephoning. I know whose maids and cooks have given notice."

"Anna gave me notice," said Flossie Mae innocently.

"Notice, fudge!" said Mrs. Doane. "You couldn't drive that girl away from you with a cat-o'-nine-tails! Notice, indeed! You've done something to get the maids and cooks of the wives of what are called the Eight Big Men to give notice. You can take your pick of them, or send them all out of town. I'm not a fool. You want something—what?"

"I'm sure that I have never done anything to make you think such horrid things of me," declared Flossie Mae.

"Every maid and every cook that is worth having in a house giving notice at once! What do you want?" demanded Mrs. Doane again.

"There is only one thing that I could want, and that has been promised already," said Flossie Mae. "I want Brick to be mayor again, and Mr. Rudge Bean has promised that. The Eight Big Men have promised it."

Mrs. Doane was silent.

"And of course," said Flossie Mae gently, "the Eight Big Men always keep their promises."

Mrs. Doane set her lips in a hard line.

"They will this time!" she said sternly. "If that is what is in the wind, we'll make short work of it, I can promise you! Nine wives to be without help because of some fiddling little politics! Indeed!"

When Mrs. Doane gave her informal tea to the eight wives most concerned and stated her suspicions, there were objections to the plan she proposed.

"For my part," said Mrs. Benderman angrily, "I do not propose to let myself be run over by any such person as Flossie Mae Darty. She comes to town a nobody—"

"And it may be your maid and your cook she means to take," said Mrs. Doane. "She has cornered the market." in Riverbank and is free to take her choice."

"Well, what is to be done, then?" asked Mrs. Benderman.

"Just what I told you," said Mrs. Doane. "We are nine ladies here, and our husbands can make the mayor they choose. They must make Mr. Darty mayor again. I do not know what influence you have with your husbands, but I can speak for myself. Mr. Doane will not deprive me of my cook and my maid, I can tell you that!"

"And if he insists?" asked Mrs. Bean, who was rather afraid of her husband.

"I will cook for him myself," said Mrs. Doane grimly. "I did it before and I will do it again, no matter what the consequences may be. Fortunately—I say fortunately—he has never recovered from the dyspepsia he incurred when I cooked for him last."

"Poor Mr. Bean's stomach is so tender!" sighed Mrs. Bean.

"Men who are as successful as our husbands always have tender stomachs," said Mrs. Doane. "For my part, I mean to give my cook two days' vacation, beginning tomorrow. I am going to be cheerful and brave over it all, and make friend bread as I used to make it just after we got married."

"Dumplings for Mr. Benderman," said Mrs. Benderman grimly. "I have a recipe of my grandmother's. They are delicious until about two o'clock in the morning, but I will have emptied the pepsin down the drain. I will take a nap in the afternoon so I can sit up in bed and talk to Mr. Benderman."

Mrs. Bean sighed.

"The last time we had my fried steak and onions, we had to have two doctors, one for me and one for Rudge," she said.

"Waffles!" said Mrs. Farrington. "Mine are limp and leathery. Dear Mr. F. puts his hand on his stomach and closes his eyes and groans. He walks for hours and hours with his hand on his stomach and swears when I mention the hot-water bottle."

"I read a recipe a few days ago," said Mrs. Burt, "that sounded so delicious! You take boiled parsnips and mash them and brown them in a dish with cheese and pie-crust. When he eats my pie-crust, Mr. Burt gets green under the eyes and around the mouth. He lies flat on his back and says 'Ah-h! Oh-h!'"

Some five days later Mr. Doane crept into Rudge Bean's office and asked the stenographer where the handy-man was.

"He wont be down to-day," said the girl. "He's not feeling very well."

"Nobody's down!" growled Mr. Doane. "Everybody's sick! I'm done up myself! Get the infernal rascal on the telephone!"

The message was short when Mr. Doane got Bean on the wire.

"Look here, Bean," he said. "You've overreached yourself. I don't know what all the rigramole means that my wife was telling me, but this thing has got to stop! Understand that? You've got to elect this man Darty mayor again. Understand that? No nonsense! He's a good man, and he's made a good mayor—"

"Now, don't you come shouting at me like a wild man, Doane!" Bean shouted back at him. "I wont stand any such talk. I'm a sick man—"

"You do what I tell you!" howled Doane.

"Oh, shut up!" said Bean, who was in agony. "My wife telephoned Flossie Mae Darty an hour ago. Go home and go to bed! You nor nobody else can make me do what I don't want to do!"

He slammed the receiver on its hook; and Mr. Doane, being able to do nothing else to show his anger, slammed his receiver on its hook. For a full minute he glared at it; then he ordered the girl to call Sam Darlington.

"Look here!" he said. "This is Doane speaking. You can't be mayor this time. Understand that?"

"Not this time?" asked Darlington. "Very well, Mr. Doane. When can I be?"

"How do I know?" asked Doane savagely. "I haven't asked Flossie Mae Darty yet. Do you think I own this town? If you want to know when you can be mayor, go ask her yourself!"

IT PAYS TO START THE CHILDREN RIGHT

"Love what I have to do" should be the motto of every mother. Children's wants are so numerous and a mother has such constant demands upon her that she needs to retire within herself often and, no matter how tired she may feel, repeat again and again "I love what I have to do." Then suddenly she will feel fetter, and it will become easier to go on with the task of caring for and training the children. It pays in dollars and cents, as well as in peace of mind and satisfaction of spirit, to devote much thought toward starting the children right.

What are some of the simple ways in which a mother can help her little ones? Let her begin the day happily, no matter how she feels, and never be discouraged nor allow the children to become so. Together mothers and children can learn to be honest, obedient, and faithful.

It should not be forgotten that all virtues thrive best in a healthy boy. Therefore, the child should be given plenty of fresh air, and he should sleep in a well ventilated room, wear clean, comfortable clothes and eat simple food.

The children should be permitted to take hold and help about the house a little. At 4½ years they can wash dishes, and they love to do so. They can also help make beds, brush up crumbs and do many other things. But they must not be nagged at their tasks and mothers should remember that interest in useful work may be most successfully developed by keeping it in the realm of the play spirit.

Apart from the influence of the churches and schools it comes back every time to the parents and the home to develop in the children the simple practices which lead to right and happy living.

The mother should be patient in answering questions, and if she does not know the answer, should try to find out with the children. Fun is as natural as breathing to most children. Try to laugh with them at their simple jokes.

It is very prudent to take a little time at the end of each day, to tell a short story. Stories are not all to be found in books. It is a big accomplishment to learn to do things

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And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight and dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all — young or old.

MRS. M. SUMMERS, Box 309 Windsor, Ontario

Read My FREE Offer:

To Mothers of Da[illegible] I will explain in a simple [illegible] effective [illegible] irregularities [illegible] young [illegible] ness and [illegible] about your [illegible] nothing to give my method [illegible] ment a [illegible] you wish to [illegible] costs [illegible] to [illegible] fere with one's daily work. Is [illegible] asking for? Write for the free, treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address

MINARD'S
"KING OF PAIN"
LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

in the child's way—things they like to do but which are often denied them because mothers feel they have not time to be bothered.

If the little ones see that father and mother are trying to find something to love in all their trying tasks, home will always be full of sunshine. If there is a fretful child in the flock the mother should find out first if he is being properly nourished; then she should try telling him stories which will take his mind off himself.

Many children are often disaggreeable because they haven't enough of the right things to do, such as games and songs, that provide activity and stimulate the mind and occupations that answer the child's need to be doing and making something.

A most important point for the mother to realize is the necessity of sticking to the lessons she needs to teach every single day until the right habits are permanently formed in the child.

No one can tell a mother exactly the things it is best to do with children, but if she begins to watch and think, read when she can and exchange experiences with other mothers many suggestions will be found to meet the needs She should take a glimpse backward into her own childhood and many ideas will occur to her. And through it all she will find that the children are helping to bring the parents up too. Courage and joy prolong life and parents can well afford to stand and wait, feeling sure that if their motives have been right and they can find something to love even in the hard things of life, their little ones will see and know and will "rise up to call them blessed."

RELIEF AT LAST

I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
Address

MRS. M. SUMMERS, Box 309
Windsor, Ont.

SHORT CUTS FOR THE HOUSEWIFE

Keeping the stove blacking in some handy place is quite a problem. Under the sink it becomes too damp or the dish pan drips on it, or it becomes mixed with other things. Have the bottom step of the back stairs put on hinges so as to form a box. Any carpenter can do this in five minutes. The stove blacking can and polishing cloths and brushes may all be kept here.

Many a woman has strained her back trying to put her hat in that hat box on a high shelf without the trouble of taking the box down. Cut the front of the hat box down to the bottom, paste on a strip of linen for a hinge and the difficulty is met. When the hat is removed or returned to the box all that is necessary to push up the cover a trifle, pull down the flap and there is no need of taking the box from the shelf.

Many times after a layer cake has been made and the filling of jelly or soft icing is put between the layers, the layers will slip about and slide off, while the cake is being moved about. Take two clean broom straws (never use broom straws until boiled water has been poured over them) and stick them down through each end of the cake. This will hold the layers firmly together. When it comes time to serve the cake, remove the straws. The holes they make are so small they will not be noticed.

Every housekeeper has experienced that indescribable sensation of trying to step down one more step when she has already reached the bottom of the stairs, especially the dark cellar stairs. And even more dangerous is stepping off with the belief that the bottom has been reached when there remains yet another step. If the bottom step is painted white this danger will be obviated as far as the cellar stairs are concerned. Put on several coats of the best hard white paint and let it dry thoroughly. The housekeeper will soon get used to looking for the white step and there will be no more stumbling.

Baby's playthings scatter themselves all over the house. This is to be expected, but when it comes time to pick them up, the question is, where shall we put them? Baby will want them again the next day and they must be conveniently handy for his use. Cover an empty soap box with cretonne or colored burlap. Make a cushion for the top and put padding all around the edge. Then if the cover falls on baby's fingers it will not crush them. Insert castors, the sort with flat bottoms that go on with screws, and paste colored pictures on the sides of the box. This toy box may be moved about the room with a push of the foot, and the playthings will be ready for the next day.

LAUNDRY NOTES FOR WASHING AND IRONING DAYS

A spoonful of salt added to the starch on a windy day will prevent it from blowing out of the clothes.

A little washing-blue in the "boil" suds will whiten clothes wonderfully.

Very thin handkerchiefs may be slightly stiffened by adding a small quantity of hot-water starch to the blue-water.

Always iron embroideries on the wrong side.

If a little kerosene is added when boiling the clothes they will require less rubbing to remove the dirt. The odor of kerosene will not remain in the clothes after drying.

A handy little apron, which makes hanging up clothes much easier, is made by taking two-thirds of a yard of ticking and finishing one end with a band, as you do an apron. Next turn up nine inches at the bottom and sew at each side and through the middle. This will form two pockets for holding clothes-pins, and will save much stooping to pick up the pins.

One of the greatest savings of time and hard work in our family is the jar of soft soap. This we usually make on wash-day, using a liberal quantity in the boiler with the soiled clothing. For windows, wood-work, and cleaning floors or smoked kitchen walls, it is unexcelled. For the glass on pictures or the windows, we usually use a little on a damp cloth, then wipe off directly with a soft dry cloth, or it may be added to the water.

To make, shave one bar of good yellow laundry soap in one quart of water; add two tablespoonfuls kerosene and one tablespoonful borax-powder. Boil down to one pint, and pour in some handy large-mouthed jar or pitcher.

All the skill and care used in making the original high quality PURITY FLOUR is maintained in milling

"More Bread and Better Bread and Better Pastry"

Canada Food Board
License Nos.,
Cereal 2-009
Flour 15, 16, 17, 18

Western Canada Flour Mills Co. Ltd.
HEAD OFFICE
Toronto, Ont.

PURITY FLOUR
(Government Standard)
REMEMBER THE NAME
Purity Oats are given the same exacting care

BUTTONHOLES IN SILK

In making buttonholes in a waist of foulard silk I found, after cutting the hole, that it frayed most dreadfully. At once the thought struck me that if I would lay a piece of "mending-tissue" in the hem that the holes were cut in, and press with a hot iron, it would form a substantial body to work on. This I did, and was very successful indeed.

A broken vow is not a tragedy, but a broken courage, a broken will toward the right, is.

IT MEANS MILK

"We are losing every year 300,000 children under five years old, a third of whom die from preventable causes." Thus speaks Mrs. Ira Couch Wood, chairman of tre Child Welfare Committee for the Illinois Council of Defense. Continuing Mrs. Wood says:

"One of three things is the matter —either they are not getting enough food or they are not getting the right kind of food, or they have physical defects which could be remedied to make for proper growth. We have a very small percentage of people who cannot secure enough food. It is not a matter of poverty but of ignorance. Parents need education and re-education to bring home the fact that there are standards ni child development and that the proper food in the majority of cases will bring the child up to the standard.

"Our children should be one hundred per cent perfect in this great free country where we have boasted that every man has his chance. Of course, some will be handicapped by heredity, but if our children are fed properly, we should be the foremost nation in the world. It means milk and butterfat and plenty of green vegetables, very little meat, and you get a sound diet for children."

A Happy New Year :

Now that Munition Contracts are cancelled, we are able to resume regular work. It is gratifying to know that our efforts have helped attain a splendid final victory.

We will appreciate enquiries and orders for general foundry and machine shop products.

THE SMITH FOUNDRY COMPANY, Ltd.
FREDERICTON, New Brunswick

WOMEN'S INSTITUTE VICTORY CELEBRATION

Splendid Programme Descriptive of Women's Part in the War and What Her Work Must Be In Order to Hold Ground

A "Victory Celebration" program was carried out at the Women's Institute meeting of Friday, Dec. 13th.

It consisted chiefly of a description of woman's part in the war, and what her work must be now in order to keep the ground she has won. She must "Carry on"—she must look toward a greater and more glorious victory.

Woman threw herself whole-heartedly, unselfishly, and efficiently into every line of work during the war, and her efforts must not in any way relax now that the great reconstruction period is upon us, and with the Allies, and especially the British Empire, rest such huge responsibilities.

The first number on the program was a most excellent paper written by Mrs. Chestnut,—"Canada's part in the war."

Next, Mrs. King gave an account of Red Cross work from its foundation to the present, dwelling particularly on Canada's part, and our own province during the lats four years. It was astounding the amount of money and supplies sent across to England and France.

Mrs. J.E. Keith told how the soldiers Comforts Society has helped to make the life of the men in the trenches both comfortable and happy, and of the men's grateful acknowledgement of the same.

Mrs. Steeves talked about the Canadian prisoners in Germany. Her account of their privations and sufferings came first hand and was very interesting.

Mrs. Slipp, to show us a mother's experience, read a poem telling the story of one mother who had sacrificed everything in order that her son might grow up physically, mentally, spiritually, the very best—

"I never could be satisfied with less."
Yet when the call of his country came, she would have him ready to defend his home, his mother, and his country's flag.—

"He's gone! Dear God! With bleeding heart I know
I still could not be satisfied with less."

Mrs. Jonah described the hard lot of the women and girls in the munition factories. Their lives and their health were so constantly in danger, that their self-sacrifice was no less than that of the men in the trenches.

Mrs. Sterling Parlee and Mrs. Frank Roach talked of the work done by women on farms, in the workshops, in the manufacture of ships and air-ships, and even building huts, which were in some cases made in England, carried to France in parts and set up there. Mrs. Roach spoke particularly of the part women did in taking the place of animals in doing farm work in France. Returned soldiers speak of it as quite a common sight to see a plow drawn by two or three women. Thus they had kept things going and saved their beloved France.

Miss Burgess had been given the subject of food conservation, and gave an account of the very excellent work done by the young girsl in canning vegetables, fruits, meats and fish. These girls had also been knitting and sewing for Red Cross.

Mrs. Robinson related facts and stories to show how all, from the least unto the greatest had depended on prayer and the power of God and had not hesitated to ask for His help, and to acknowledge the same.

Then came a paper by Mrs. Humphrey's entitled "What next". This was so good, and so useful to us all at this critical time, that Mr. Humphreys has been prevailed upon to allow the Record to publish, and it will appear next week.

The more entertaining part of the program was both pleasing and inspiring.—

Mrs. Eveleigh recited "Our Flag the Union Jack"; Mrs. Elliott—"The Birkenhead Drill", and Master Sydney Hargreaves—"Ye Mariners of England".

Mrs. King sang "Rule Britannia" and Mrs. King, Mrs. Forsythe and Miss Gretchen Mills sang most beautifully as a trio, "The men of Harlech."

As usual Miss Sherwood helped in her own special way at the piano.

The Women's Institute of Hillsboro held an interesting session at the home of Mrs. L. M. Stabell on Saturday afternoon, Dec. 7th. Mrs. Karl Duffy, 1st Vice Pres., presiding in the absence of the President. The roll was answered by a "joke".

Four new members enrolled, paying dues.

Miss Mina Stiles, Miss Ina Steeves, and Mrs. Fred Erb were appointed a press committee.

The convenor of the yarn committee reported the buying of more yarn and distributing the same.

Fifteen ($15.00) dollars was voted for the St. James Military in St. John to be used in the diet kitchen.

Mrs. Chas. Steeves, convenor of the shipping committee, reported the shipping of twenty (20) boxes and two (2) bundles of socks to boys overseas.

Miss Ina Steeves read a very interesting paper on "Christmas Customs".

Mrs. Robertson gave a short talk on the "Value of Enthusiasm" and afterwards sang a solo, which was much enjoyed. Twenty three members were present.

Meeting closed with singing the National Anthem, followed by The Woman's National Anthem.

J. M. ERB, Secy.-Treas.

Hillsboro, N. B.
Dec. 16th, 1918.

"If I Could Only Be Strong and Healthy Like Other Girls."

THIS is the longing of the girl who is pale, weak and anaemic.

She is lacking in energy and strength, and is so easily tired out that she does not feel like taking outdoor exercise or joining others in social gatherings.

The healthy, happy outdoor girls get in the way of leaving her to herself, and she gets lonely, discouraged and despondent.

The source of trouble is in the condition of the blood, which has become thin and watery, and utterly lacking in nutritive qualities.

The anaemic condition is shown in the pallor of the lips, the gums and the eyelids, as well as in the pale face and angular form.

Nature has provided for the purifying of the blood by having it sent to the lungs periodically to come in contact with the fresh air and take up new oxygen.

Unfortunately this plan of nature has been defeated by human beings living too much indoors and breathing over and over again the vitiated air of ill-ventilated rooms. This is the usual cause of anaemia, as well as a reason for its continuation.

The blood gets ever thinner and more watery, until the human system is literally starved.

The digestive system has failed, and your health must go naturally downhill until you can find some means of restoration.

Fortunately, Dr. Chase's Nerve Food furnishes the vital substances needed for regenerating the entire organism when in a run-down condition.

Gradually and certainly the building-up process is established, and the pure, rich blood created in the system carries health and strength to every part of the body.

Weakness and disease, the cause of discouragement, failure and unhappiness, give place to new hopes, new confidence and stronger determination to succeed.

The appetite is sharpened, digestion improves, and you find yourself enjoying your meals and taking a new interest in life. As you gain in strength and energy you feel encouraged to keep up the use of this restorative treatment until thoroughly restored to health.

The rosy cheeks and healthful appearance of people who have used Dr. Chase's Nerve Food is its strongest recommendation, and accounts for its ever-increasing popularity.

It is for sale by all dealers, 50 cents a box, 6 for $2.75, or by mail from Edmanson, Bates & Co., Limited, Toronto. Look for the portrait and signature of A. W. Chase, M.D., the famous Receipt Book author, on the box you buy.

OUR COUNTRY SECTIONS IN THE WINTER SEASON

(Contributed)

In the large towns and cities they have all sorts of attractions and meetings to interest people and take up their attention during the long evenings of the winter season, from November to April. How do they get along in the country districts? How do they pass the time there during these six months? Well, all that mainly depends upon the people themselves, upon those who live and labor in rural communities. If the people in a rural district are intellignet, go-ahead and thorough believers in improvements of all kinds, they will go to work and make their particular district a centre of light and attractive force during the long evenings of winter. If the church-going people in that district act up to their profession, the various societies in connection with the church such as the missionary societies, the Y. P. S. C. E., and such like, will often hold entertainments, and not only provide an evening's pleasure, but bring out the latent talent that is in that particular secion. Then what is to hinder one or more of these societies, with the minister at their head, from providing a course of lectures from well known public men on popular subjects. That would be a good act, and would result in a great deal of benefit. If there is a temperance society, division or lodge in the district, nothing should hinder them from giving a monthly entertainment of an evening of addresses, readings, recitations, dialogues, songs and instrumental music. The farmers of that district might hold monthly meetings, and discuss intelligently and impartially certain subjects in connection with their calling; an dwe are sure such meetings where there would be an interchange of ideas and opinions, would be very helpful and beneficial. The Red Cross and what Patriotic Societies may be in operation could also provide social evenings of entertainment, that would be profitable as well as pleasing. In fact, we can hardly refrain from asking the question, what could not be done, if our friends in the country would only set to work and do it, to provide abundance of entertainment, pleasing, profitable, humorous, helpful, and attractive, during the long evenings of winter. It is up to them now to consider what they might do, if they tried hard enough, and what could be done. To all our friends in the rural district we would say, go right to work and do something in this particular direction. Take an interest in the section you live in, and try and make the hall in your locality, if you have one, or the school-house, if you have not got one, or even the church, a centre of light to the community during the winter. And when you have decided to go ahead and do this good work, let all hands hold a public debate and argue and settle the question, what shall we do?

Suppose we all go to work now and do something in this line. The war is practically over, and Canada will soon enter upon a new life; a life of reconstruction in every department. Each country section as well as every town and city will be called upon for a decision. We must not only work but we must improve and improve. Let us all do our own part in this grand work.

But there is one thing that used to be a very common attraction and pastime, in almost every country section, especially in the fall and winter season. That was the singing school. That was the place where the young men and women, yes, and some of the older ones, would congregate. That was where the singing master, generally a man that had a good knowledge of vocal music, who could sing well, and who generally led the choir in some church, would teach them not only to sing, but read music. Those were the times when the old Harmonicon, the Dulcimer, the American Vocalist, and some others of the old-time music books would be in circulation and well-handled in the majority of country homes, especially on Sunday afternoon or evening, if it happened that a number of friends would gather in a neighbor's house, and spend an hour or two singing the old major and minor tunes that have gone out of use altogether. There was a time when all who had good voices would sing the praises of God in church, in prayer-meetings or in any religious gathering. They would sing heartily and with spirit. Now, besides the choir there are only some who sing. It has been often asked, why is there such a decline in congregational singing? One reason is the disappearance of the old-time singing-school. It was the singing school and the singing master who was at the back of hearty and effective congregational singing. Would that there was a music teacher in every important country section, and that he taught a singing school three or four months in the year. What an advance there would be made in the divine art of music, especially sacred music. It would be an uplift certainly.. Social life, especially in the country, would be made more attractive. When the singing school is revived and the singing master of other days return, life in our country districts will become brighter, and the good effect will follow in the course of time.

$5.00 for $4.00

The Dominion of Canada, in accordance with Order-in-Council P.C. No. 2462, offers for sale in Money-Order Post Offices, Banks and other authorized places, the 1919 issue of

War-Savings Stamps

"War-Savings Stamps will provide financial assistance to the Government, an excellent investment for small savings, and a strong incentive to every-day economy."—
Sir THOMAS WHITE, Minister of Finance.

A WAR-SAVINGS STAMP is Canada's promise to pay Five Dollars on January 1st, 1924. It costs you $4.00 if purchased before January 31st, 1919, and the purchase price increases one cent each month after that date.

The difference of one dollar represents the high rate of interest earned. W-S.S. are a splendid investment for every man, woman and child in the Dominion of Canada.

Certificates are issued providing spaces for ten W-S.S., and in order to protect you against loss through fire, theft or other cause, you may register a certificate, with one or more W-S.S. attached, at any Money-Order Post Office. A Certificate registered in your name is of no value to anyone but yourself.

THRIFT STAMPS are also on sale and cost 25 cents each. These bear no interest, but they help you to save to buy a W-S.S.

Sixteen Thrift Stamps on a Thrift Card will be exchanged for one War-Savings Stamp.

You have all the resources of the Dominion back of your investment in War-Savings Stamps, and if at any time circumstances compel you to realize on your investment, your money is available.

SOLD WHEREVER THE SIGN IS DISPLAYED

13

RESOLUTIONS TO MEND

One man said, "No, I don't make New Year's resolutions. What's the use? You are sure to break them and then you stop trying."

I hate that point of view.

It is one of the half truths that do more harm than lies.

A Broken Vow is Not an Absolution

Doubtless vows do do harm when one feels that in breaking them one has been absolved from trying again until next New Year's Day. But why on earth should one feel that way?

New Year's resolutions may not accomplish miracles. Few things do. But they are a step in the right direction. They don't furnish the stick-to-it-iveness. We have to do that ourselves. But they furnish a definite goal. They trace out a path. And most of us travel better in a path.

I think we all ought to reckon up our character accounts on New Year's Day. We need such stocktakings sorely. There are businesses whose owners never know whether they are solvent or not because they never take stock properly. And there are individuals who never know whether they are solvent in the business of living, whether they are getting on any from year to year, whether their assets are greater than their liabilities, because they never stop and take stop.

Stop Today and Take Stock.

So by all means take stock on New Year's Day and then make your vows to stop the leaks, and to make more progress in the coming year.

Don't make the vows too ambitious and all embracing, and don't expect that they will be broken. But if, by any chance they should be broken don't throw them away in the dust heap of broken vows and other unpleasant memories.

Just As Good As New

Just pick them up, patch them together with the cement of new resolution and undauntable courage and go at it again. If you will honestly and thoroughly use those that remedy you will find them every bit as good as new.

"It is not vows that keep the world right, but the prayers of a man's soul from day to day."

(1)

FOOD PRODUCTION MUST BE INCREASED

The horse is a vital factor in such accomplishment. His efficiency is measured by the degree of fitness for constant use.

Stuffed Collar Pads

Are the only guarantee against bruised, galled and chafed shoulders. They are better than other kinds, being soft, springy and absorbent. They make possible the continued use of a horse collar long after its worn condition would otherwise compel its discontinuance.

New Patented Hook Attachment

(Found only on pads made by us)

Consists of wire staple with felt washer. It gives hook a firmer hold and prevents pulling off, even though fabric is weakened by long usage. This is the greatest improvement since we invented the hook.

Thirty-Seven Years Making Pads
Look For the Felt Washer
SOLD BY DEALERS EVERYWHERE

The American Pad & Textile Co.,
Chatham, Ontario

WINNERS WHEREVER SHOWN

(Utility and exhibition combined.)

At the recent Maritime show, Halifax, they won as follows: 123 Cocks, 15 Hens, 123 Cockerels, 234 Pullets, 1st old Pen, 1st Young Pen. I still have several good Cockerels for sale at from $3 to $5. Eggs for hatching in season. Enquire of

SAMUEL STEEVES,
Sunny Brae, - - - N. B.

SHORTHORNS

BULLS and HEIFERS FROM the CHAMPION HERD of QUE.

I have a choice lot of young bulls and aged bulls for sale. All show animals. Bred from **Oak Buff Monarch No. 102905. The Champion of this province.** This bull is for sale at $1600. I can spare a few heifers. Come or write your wants.

GEO. REG. MOONEY, Inverness, Que.

SUCCESSFUL DAIRYMEN

have found that it pays to dehorn their cows. Drovers pay more when they are dehorned, and shippers are insisting on having cattle dehorned. The KEYSTONE DEHORNER is the most effective instrument for the purpose. Write for booklet.

R. H. McKenna, 219 Robert St., Toron

Butter Parchment at Farmer Office

MARKETS.

MARKET REPORT

CHARLOTTETOWN

Dec. 27th, 1918.

Beef, Ox, carcass, 18c; retail 22 to 24c.

Beef, cow, carcass, 16c; retail, 20c to 22c.

Veal, none.

Hogs, carcass, selects, 21½c, organs included.

Lamb, carcass, 22c lb.

Mutton, carcass, 18c lb.

Beef Hides, 15c lb.

Sheep Skins, $3.00 to $3.50.

Calf Skins, 30c lb.

Potatoes, 50c to 60c per bushel.

Carrots, 1¼c per lb.

Turnips, 20c per bushel.

Parsnips, $1.75 to $2.00 per 100 lbs

Oats, 80c to 82c per bushel.

Cornmeal, $3.90 to $4.10 per 100 lbs.

Bran, $2.20 to $2.30 per 100 lbs.

Oatmeal, $6.00 to $6.25 per bag.

Middlings, $2.40 to $2.50 per 100 lbs.

Oil Cake, $3.75 to $4.25 per 100 lbs.

Ontario Flour, $12.25 to $12.50 per bbl.

Manitoba Flour, $12.50 to $12.75 per bbl.

Chickens, 28c to 33c per lb.

Fowl, 20c to 22c per lb.

Turkeys, 35c to 40c per lb.

Geese, 30cto 34c per lb.

Butter, Creamery, 50c to 53c.

Butter, Dairy, 40c to 45c.

Cheese, 27c to 27½c lb.

Eggs, 53c to 58c per doz.

Hay, 95c to $1.00 per 100 lbs. loose.

Hay pressed, $18.50 to $20.00 per ton

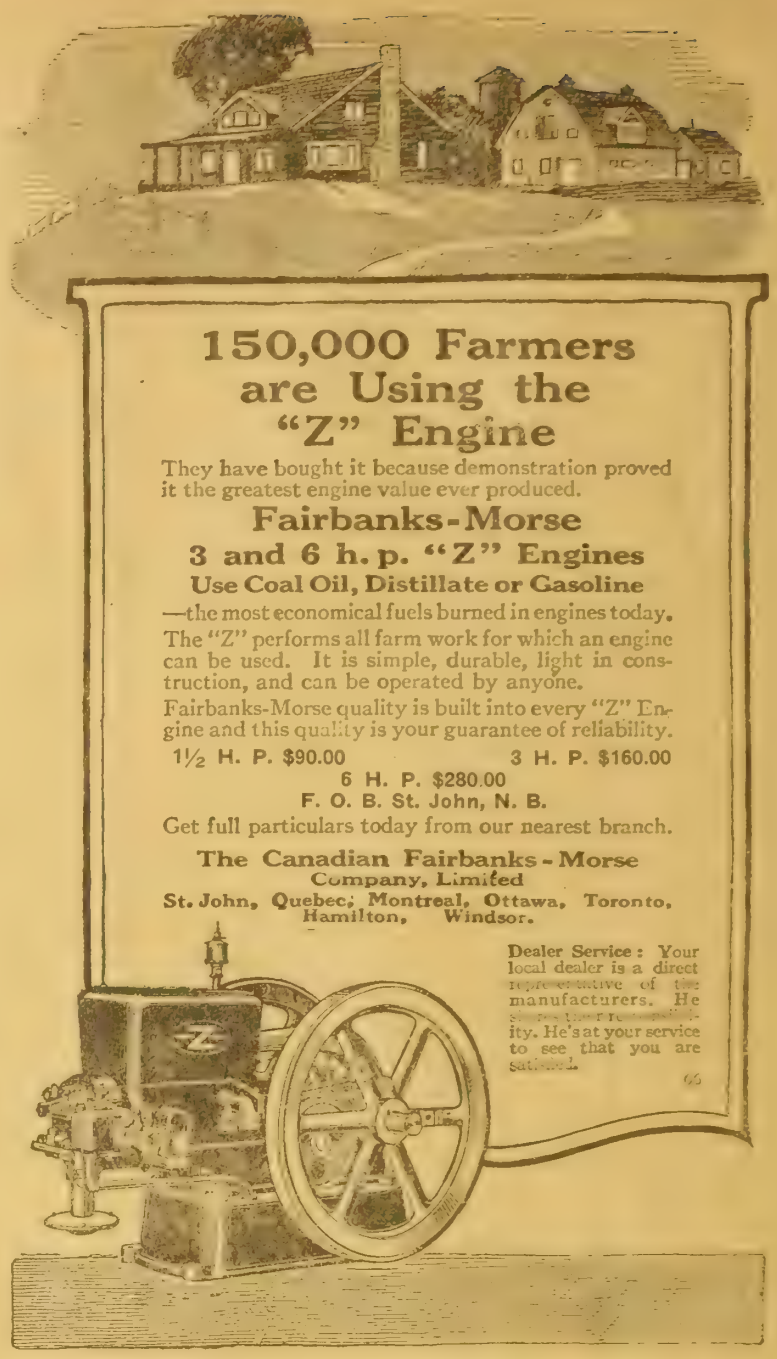
Straw pressed, $12.50 to $14.00 per ton.

MARITIME PROVINCES SHEEP IMPROVEMENT POLICY

By Norman Stansfield, Acting Chief, Sheep and Goat Division

As a war measure and for one year only it was decided to change the policy of distribution of pure-bred sires in the three maritime provinces this year. The old policy of distributing pure-bred sires to live stock associations has, undoubtedly, accomplished great improvement in the districts where these sires have been placed, but it was felt that the improvement was not as fast as it might be. Therefore the policy has been changed and the following method was inaugurated as a war measure for one year only and to test out the workability of the policy.

The Dominion Live Stock Branch co-operated with the provincial departments of agriculture in the work of distribution of sires and encouragement of the sheep industry. The provincial departments of agriculture notified the sheep raisers within their provinces, through the medium of advertisement, that it would be possible to obtain pure-bred sires at very little above the market value of grade sires, and pointed out that under such circumstances there was no excuse for the using of grade sires. After all applications were collected and tabulated, the pure-bred rams within the province were purchased by the provincial department and re-distributed under this policy. The supply of home-bred rams was insufficient in all these three provinces to supply the demand, so that it was necessary to purchase in other provinces other rams to supply the demand. A representative of the Sheep Division of the Dominion Live Stock Branch, with a representative from each of the three provinces, purchased over 200 rams in Ontario for this distribution policy, and at the same time approximately 200 pure-bred breeding ewes were purchased for distribution by the provincial authorities. Twenty-five dollars was the price at which ram lambs were distributed, and thirty dollars for shearling rams. The work of distribution was in each instance done by the provincial authorities, and the work of collection by the Dominion authorities, the expense being borne co-operatively. In the past the Dominion Live Stock Branch has distributed pure-bred rams and good results have occurred, but this new policy was tried as an experiment to find out if more immediate good might not be the result with the same expenditure.



150,000 Farmers are Using the "Z" Engine

They have bought it because demonstration proved it the greatest engine value ever produced.

Fairbanks-Morse
3 and 6 h.p. "Z" Engines
Use Coal Oil, Distillate or Gasoline

—the most economical fuels burned in engines today.

The "Z" performs all farm work for which an engine can be used. It is simple, durable, light in construction, and can be operated by anyone.

Fairbanks-Morse quality is built into every "Z" Engine and this quality is your guarantee of reliability.

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Dealer Service: Your local dealer is a direct representative of the manufacturers. He [illegible] ity. He's at your service to see that you are satisfied.

DON'T SLAUGHTER WHEN ANIMALS ARE OVERHEATED

Wm. H. Fieldman, of the Colorado Agricultural College, has pointed out the inadvisability of slaughtering meat animals when overheated, giving the following information:—

It often becomes necessary to slaughter animals which through accident or otherwise have become injured. In many instances the flesh of these animals is edible if the proper precautions are taken before killing the injured beast. The essential point in this connection is to allow the animal to become thoroughly cool and recovered from any excitement incidental to the injuries. To slaughter an animal that is over-heated from any cause is prohibited in all government supervised packing plants, for carcasses of such animals will not bleed out properly nor will the meat from such an animal have keeping qualities, no matter what means may be taken to preserve it. Serious poisoning and death may result from eating such meat, which is usually very offensive to the taste and smell.

ONTARIO OFFERS FEEDS

Attention is called to the advertisement of the Resources Committee of the Province of Ontari which appears in other columns.

Last year when the scarcity of feeds was apparent the Ontario Government arranged for the manufacture of 1500 cars of Standard feeds. The War has relieved the sitution and now some of these feeds will be available for the Maritime Provinces and other parts of Canada. Feeds are being offered at $67.00 a ton delivered Maritime Province points. Those interestde will do well to read the advertisement which appears on page 197 of this issue.

REMEDY FOR STRINGY MILK

Stringy milk is caused by bacteria which enter the milk after it has been drawn from the cow. It is not caused by the feed or any abnormal condition of the cow. Milk affected in this way is not unhealthful, but it is certainly not appetizing. The bacteria which cause the trouble live in water ordinarily, and probably enter the milk from the cows' bodies, or from utensils. Where trouble is had from this condition, the utensils, especially the strainer cloth, should be boiled. If this treatment does not eliminate the trouble, the fresh milk should be heated on the stove to a temperature of 150 degrees, then let stand 20 minutes and cooled as uickly as possible.

SHOULD COWS BE FED TURNIPS?

This is an old question about which considerable difference of opinion exists. If my reader is Scotch, he or she will likely answer the question by saying "Yes," as Scotchmen, turnips, and good farming are three things usually found together on farms in Canada.

There was a time when butter buyers were not so particular about the flavor of butter as they are at present. It is common to hear women purchasers on city markets, say to farm butter-makers, "Your butter is turnipy," which is sufficient to cause a loss of the sale. Creamery-men object very strongly to "turnipy cream." While it is doubtless true that some careful feeders are able to feed quite large quantities of turnips to cows giving milk, without causing any serious trouble, there is always danger, which can best be avoided by not feeding these to milking cows. If they are grown on the dairy farm they are best fed to dry cows, fattening cattle, young stock, pigs, etc. However, if they are fed in the stable where cows are milking, and more especially where the root house opens into the stable and where the turnips are pulped in the stable or in a feed-room adjoining, the odor of the turnips fills the air, which is carried into the milk pail at the time of milking and thus the milk, cream, and butter become tainted from the stable air, even though the milk cows may not be fed any of the turnips..

The safest plan is not to grow turnips on a dairy farm. Grow mangels, or sugar beets, and corn for silage. These crops will give as good returns as turnips, are no more expensive to grow, and are much safer.

"Safety first" is a good motto on a dairy farm.—Prof. H. H. Dean, Ontario Agricultural College, Guelph.

DISINFECTION AND HORSE DISEASES

Just as much is done scientifically to prevent the spread of infectious diseases among horses as among men. Owners of horses kept in sale barns clean and disinfect their premises when needed, daily, weekly, semi-monthly, semi-annually and annually. All stalls where disease has been discovered, if only a cold, are cleaned and disinfected immediately. Manure is continually being removed.

There is a great difference in the appearance of barns. Some have dirt floors, others cement. Some are good frame structures, neatly white-washed, others are of brick and are disinfected with crude oil compounds. Of late the white-washed barns have been condemned. It appears that hermetically sealed microbes do not die but are only covered up forever and ever. No official has courage enough to insist upon the use of one disinfectant in all places. Perhaps no official knows enough about any disinfectant to underwrite it.

The present influenza is no respecter of fresh air traditions. Soldiers and sailors living in the open air have been as rapidly and as dangerously smitten as those who lived in crowded tenements. The mortality has been greatest in government-cleaned, disinfected and ventilated places. This is no criticism of the Government, merely an observation. It applies equally to horses in cantonments.

Strangles or shipping fever is a disease described 460 B. C. among army horses. The Arabs have proverbs in reference to the control of this disease in camps. Branding a good commercial horse with the army stamp does not make him immune. The healthiest horse jammed into a cantonment paddock along with 499 others has a chance to pick up some infection. Army horses could be kept as free from diseases as commercial horses by exercising the same amount of care. All horses go "through the sweat" in every part of the world. It is only through gross carelessness that virulent diseases get a start among army horses.

George E. Wentworth.
Cook Co., Ill.

MOUSE CONTROL IN ORCHARDS

"Mice in the orchard are allies of the Hun," says R. B. Cruickshank of the Department of Horticulture of the Ohio State University. Further in this connection he says, "that unless the young trees are protected, considerable damage is often done during the winter by the rodent."

As a protective measure he suggests that during the fall or early winter all weeds and rubbish should be hoed away from the trees, leaving the soil clean and well firmed about the trunks to a distance slightly beyond the spread of the branches. A slight mount around the trunk of the tree is an additional advantage.

EASY CAKE WITH ONE EGG

½ cupful soft butter or lard, 2 cupfuls brown sugar, 1 egg, 1 cupful sweet milk, 2 small cupfuls raisins, 3 cupfuls flour, 5 level teaspoofuln of baking powder, 1 teaspoonful each of nutmeg and cinnamon.

Bake this in a long dripping pan 10 by 15 inches.

GIVE FOALS A CHANCE

The first winter is one of the most important periods in a colt's life. The colt that goes into the winter thin and in poor condition has less chance to winter well than the colt that enters winter quarters in good shape. Colts frequently lose bloom and flesh at weaning time. To avoid this is important. They should have learned to eat hay and grain before weaning time; also to be separated from their mothers. A very satisfactory method of weaning is to let the colts nurse in the morning and take them away, not permitting them to see or hear their mothers until the ordeal is over. If they have learned to eat hay and grain they can be weaned and gain in weight during the time. Recently, colts weaned at the University of Missouri College of Agriculture gained 20 pounds each during the week they were weaned. After weaning, a good blue-grass paddock surrounded by fences in which colts cannot injure themselves, plenty of good fresh water and good grain together with exercise and satisfactory shelter, should carry colts up to the time winter sets in, in good condition. Care at this time frequently means the difference between good yearlings and inferior ones, says E. A. Trowbridge. If a colt is worth having he is worth taking care of.

Keep hte stock comfortable. There is probably no term that signifies more regarding the condition in which stock should be kept than the term "comfortable;" and if one bears this in mind, and keeps his stock comfortable—that is, not hungry or cold, or excited, or standing in an uncomfortable position, or sleeping in an uncomfortable bed—his returns will be satisfactory.

In the past eight years South Dakota has nearly trebled the value of her manufacture of butter and cheese. In 1910 it was $8,185,890, and in 1918 it had increased to $23,454,825. Her annual butter production is 35 million pounds, an increase of 75 per cent over that produced eight years ago.

FERTILIZERS !

THE best potatoes grown in N. B. last year were grown with our best by test Potash Fertilizer.

We produce our high grade 2-8-2 and 3-6-5 brands expressly for N. B. potato growing, securing our own potash in Canada, all in water soluble form.

If you are using other makes of Fertilizers try as an experiment some of our brands alongside and watch results.

We produce a full line of Fertilizers. Write us for prices, terms, etc.

CANADIAN FERTILIZER CO., Ltd.

CHATHAM, ONARIO

THE SUCCESSFUL ICE HOUSE

The successful ice house is not necessarily the most expensive one. The secret (of keeping ice) is in the strict observance of four principles all of which finally reduce to one, namely, good insulation. The four principles are: first, there must be good underdrainage to carry off the melted ice, for otherwise it would form a conductor of heat to the remainder of the ice stored, and would gradually melt it from underneath. Water melts ice much faster than air, for the latter merely affects the surface while the former penetrates throughout. Second, there must be perfect ventilation at the top of the ice in order that the covering of sawdust, straw, hay, moss or leaves may be kept as dry as possible so that it will not form a conductor for the heat from the air and melt the ice on top. Third, the ice must be packed so as to prevent the circulation of air through the mass, for there is certain to be some heated air enter into the house when the doors, windows, ventilators, or top are opened. These currents of air rapidly warm up, while dead air does not readily become heated because of the fact that air is a very poor conductor of heat. Fourth, good insulation at the sides and bottom must be carefully provided.

The size of the house needed may be determined from the fact that a ton of stored ice occupies approximately 42 cubic feet of space. The average size of house for a small farm is about ten feet high from the ground to eaves, with an inside area 12 x 14 feet. Afte rallowing for the space occupied by the sawdust around and under the ice, this will give room for the storage of from 25 to 28 tons of ice. A cubic foot of solid ice weighs close to 30¼ pounds, so that 35 cubic feet of solid ice would weigh a ton. From this we can estimate the amount possible to cut from a pond. The thickness of the cakes cut ranges from six inches in the central states to 16 and even 20 inches in the north. Probably 12 to 14 inches is the average. The cakes are cut in various sizes also, perhaps 12 x 16 and 16 x 16 are common sizes, but this is not important. Assuming cakes 12 inches thick and 12 x 16 inches, there will be 26 of them to the ton, each one weighing 76 1-3 pounds. In the field, allowing for breakage and waste, a surface of 50 feet square will harvest 45 tons of 12-inch ice.

Having determined upon the size of house and the outlay of money that can be afforded, it remains to determine the material to be used and the plan to be followed. Beyond any reasonable doubt woo dis better in many ways than stone, brick or concrete for ice house construction, although any of these may be used with satisfaction if the ice is packed far from the walls and well insulated from them by ten or twelve inches of sawdust. The only objection ti wood which any one can have is its tendency to rit under the continued inuence of moisture inside and dryness outside.

BUY REGISTERED SEED

Farmers who contemplate purchsaing seed grain for next spring's sowing, should keep in mind the advantages which they may realize by purchasing registered seed rather than seed which cannt receive any official recognition. These advantages are briefly as follows:

1. Registered seed is more reliable as regards purity of variety, freedom from weed seeds and ability to produce a strong, vigorous growth.

2. Registered seed may be expected to yield from three to five bushels more per acre than ordinary unselected seed of the same variety.

3. Crops from registered seed mature more evenly than do those from unselected seed.

4. Grain harvested from a crop grown from registered seed may in turn be registered providing it is up to standard, is not more than three generations removed from Elite Stock seed, and that it has been properly inspected both while growing and while in the sack prior to shipping. Since registered seed brings more per bushel than does ordinary seed, the financial advantage may be realized from sowing this kind of seed is obvious.

The ability to have the immediate progeny of registered seed recognized as above mentioned is a new departure, but is one which should appeal strongly to the average farmer. It frequently happens that farmers who have a particularly well prepared field to desire to procure from it a supply of seed of outstanding merit. Where registered seed is sown on such a field the chances of harvesting an outstanding crop are especially good. Where such a crop is harvested it is a distinct advantage not only to the farmer himself but the country generally to have the cleaned seed recognized and handled for seeding purposes rather than to be used for feed.

Farmers who sow registered seed next spring, and whose crops are promising during the growing season, should apply to the Secretary of the Canadian Seed Growers' Association, 114 Victoria St., Ottawa, Ont., to have their crops inpsected before they are harvested. This inspection of the growing crop is absolutely essential to an official recognition of the threshed grain.

BETTER STABLES NEEDED

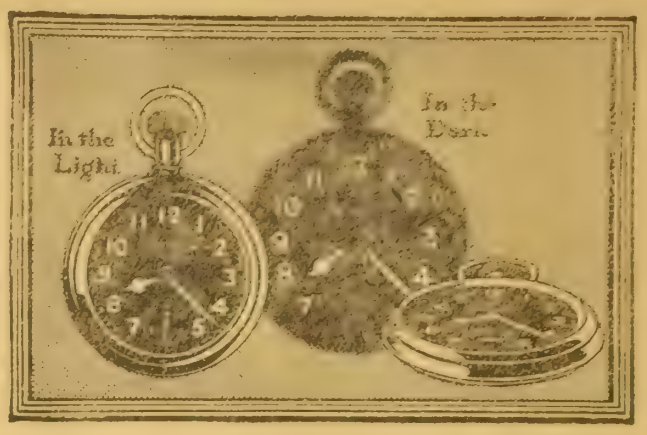
It is the firm conviction of many authorities who have watched the situation for years that many herds of dairy cattle throughout Canada, notwithstanding the fact that they are provided with the best of feed, and plenty of it, are bringing their owners in very little profit because of the stabling condition under which they are housed. To make profitable use of food, a cow must be healthy, strong and vigorous, as the production of milk is a great drain on the body of an animal. When conditions exist that destroy the vigor and stamina, a cow soon comes to the point where she is not able to digest, assimilate and convert into milk a great surplus of feed. To prevent this happening dairymen should do all in their power to shelter their herd in such a way that they will remain strong and vigorous, and then work in the niceties of a perfectly balanced ration. The robust cow will get stuff out of a straw stack the nutrition expert never found there, while the devitalized cow will not get half out of the green alfalfa hay that the investigator put therein. The present is a good time to look about the stable and see what can be done with it.

FERTILIZERS ON OLD HAY LANDS

Nova Scotia farmers buy every year great quantities of fertilizers. To offset this outlay it is of the first importance that the materials used should be used to the best possible advantage. The Nova Scotia College of Agriculture has conducted a series of experiments, the results of which are very interesting and valuable.

Some 600 lbs. of phosphoric acid and fertilizer such as acid phosphate or basic slag, and about 100 lbs. of sodium nitrate were aplied to an acre. Then a third of an acre allowed on which the phosphoric acid was applied alone. This alteration was carried out over a sufficient area to make results conclusive.

The crop grown was oats, the seeding being done early in June. All through the summer the plots treated with the phosphoric acid and nitrate showed a marked superiority over those receiving phosphoric acid alone. When the crop was threshed it was found that in a number of cases the 100 lbs. of nitrate had increased the yield of oats by over 14 bushels per acre. The average increase from the addition of nitrate to the acid phosphate was 8½ bushels per acre. A much more marked improvement occurred with some phosphoric acid fertilizers tha nwith others. A fuller account of the whole experiment may be found oin the 1918 Annual Report of the Secretary for Agriculture. The outstanding fact established is that a comparatively small quantity of sodium nitrate applied with any phosphoric acid fertilizer materially increases the crop returns.



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Real Radium in the substance on the hands and figures makes them glow brightly, no matter how dark it is, and this glow lasts for the lifetime of the watch.

You do not need to strike a match to see the hour.

On the farm, in mines, factories, camps, for outdoor work or exercise, you will find a Radiolite much more useful than the ordinary watch. It is indeed worth more than it costs.

More than 50 million Ingersoll watches have been sold during the last 25 years, and Ingersolls can be bought in any town or village just the same as in the big cities—same high quality, same low price. Ask for Ingersoll Radiolites—$3.00—at any dealer's.

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WINTER CARE OF FARM HORSES

It is often claimed that the winter care of horses is much more important than at any other season of the year. In spring, summer and fall they are worked every day, and are fed regularly and liberally watered. They are cleaned at regular intervals, and the labor in the open air tends to keep them healthy and vigorous. In winter when team work is not needed, the horses are often neglected, some days going without being cleaned, and perhaps going for a week or more with no more exercise than they get while being led to water. Many stables are not properly ventilated. The air is breathed over and over again, and becomes noxious in a short time. Under such care and treatment horses soon become debilitated.

A cold stable is to be shunned as much as a badly ventilated one. Horses should not be kept in a dark stable or where they are constantly compelled to face the light. The best way is to have the light admitted into the stable behind the horses. When they are not frequently driven or worked they well littered with straw, and the droppings removed at least once a day. In the winter there is no excuse for not cleaning the horses every day. Practical experience proves that a coarse brush is better than anything else for removing dirt from the skin without annoying the animal.

There is much diversity of opinion as to the best winter feed for horses. If they are heavily grained, and also fed hay, they will prove costly animals by spring, unless they have performed profitable work during a portion of the time. Horses that are kept fat by feeding plenty of grain will not prove as efficient as those which have been kept on less grain. Only as much grain should be fed in winter as to keep the animal in good spirits and fair flesh.

Every farmer has observed that horses will eat too much hay if given the opportunity. If there is good clean oat straw it may be fed to horses in winter if accompanied with a proper allowance of grain. However, several weeks before the opening of spring, hay should be fed, instead of oat straw.

While stable blanketing in winter has many advocates, many good horsemen have never favored the practice. The only time to use blankets is after the horse returns heated from a trip in the cold weather, or if the animal is sick. A horse with proper food and stabling can withstand more cold with less inconvenience and is less likely to take cold from an omission to blanket while waiting on the road, than if accustomed to constant blanketing in the stable.

FACTORS OF UNCERTAINTY IN CALCULATING COST OF PRODUCING FARM PRODUCTS

The cost of production is a wide term when applied to farm dairy products. Consumers who are hard hit by the high cost of living, and who are accustomed to figuring out with accuracy the cost of factory products, will find, when they get a better knowledge of the farmers' business, that calculation on a similar basis is impossible. The cost of producing farm products cannot be figured out as accucrately as the factory cost of factory products. There are so many varying conditions that cannot be computed that there is always a factor of uncertainty about it that cannot be eliminated.

Of course the cost of producing milk or butter fat from the standpoint of cost of feed can be fairly accurately obtained. But the food of production is only one factor. The labor of production must be estimated. Besides we give the cow credit only for the butter fat or milk she produces and estimate that the skim milk and the calf and the manure will pay for the cost of labor, interest on investment, depreciation, etc., Now, in some instances these products will more than pay the cost of labor in fact much more and in other instances it might be a questionable estimate.

Some people do not get much value out of their skim milk because they do not feed it in connection with other proper feeds. This by-product is an unbalanced ration and if not balanced with the right kind of food much of its value is lost. Then too, if fed to well-bred animals, it is easy to understand that one can get a greater value out of it than when fed to unthrifty scrub animals.

It is the same with the calf. If it is well-bred and well born and properly fed and cared for, it is worth much more than if it is only a scrub poorly fed and indifferently cared for. Here again the food cost of butter fat or milk does not always show the correct cost.

With the manure the some conclusions must be drawn. The value of the manure depends in part on the ration fed. Well-fed and liberally fed animals produce manure superior as plant food to those that are underfed or impropely fed. We can't get something out of nothing. Then how is this manure handled? There is a chance for a large part of its value (its plant food) to be absolutely wasted by careless handling. And again if it is carefully preserved, on what crops is it applied and row much is used at one application? There is a chance for great waste or loss for it may be as much of an unbalanced food to the plant as skim milk is to the calf. If it is unbalanced then it should be balanced by adding the plant food nutrient that is lacking.

The three above named by-products of dairying may therefore be so handled that they do not pay for the cost of labor or they may be so handled to much more than pay the cost, consequently the food cost of butter fat or milk may or may not represent the entire cost.

The cost of butter fat or of milk as determined by the usual method of keeping a dairy record is in a sense not the real farm cost. It is the cost where the food is charged to the cow at market price. And this market price may or may not be farm cost of the food. It always should be greater than the farm cost else the farm profits are not what they should be but in some cases at least the farm cost of hay or grain is greater than the market price and in these cases the determined cost of butter fat or milk by the record is less than the actual cost. If these foodstuffs were grown for less than the market price then the determined price as shown by the record would be greater than the farm cost.

Some years the cost of farm crops placed in silo or barn is more per ton than other years, and this affects the cost of the dairy products produced on the farm. Also the market price of some articles of feed, such as hay and oats, is many times below the cost of production, and to be fair to the cows these prices should be charged at market prices and not at what it costs the farmer to produce them.

The cost per unit of different dairy foods produced on the farm varies on different farms. One farmer may be a better farmer than his neighbor. He perhaps has a greater advantage in having a better farm. The land has been kept up in crop-producing power or was originally more fertile. He may have greater executive ability than the other. We find this everywhere in all kinds of business. Or one man has a greater working capital which enables him to do things on time and in the best way. It takes working capital to take advantage of farming opportunities just as well as it does to take advantage of other business opportunities.

Business men in other callings often criticize the farmer because he cannot tell the cost of farm products. Some say that if other business were run as slack so far as knowing the cost of production is concerned, it would go to the dogs and it probably would. The cost of production in farm products varies with almost every season. Men in other vocations who scold and find fault with the farmer because he does not keep accurate accounts and does not know the actual cost of production would find if they got actually up against the actual proposition that they would not know any more about the problem when they got through than the farmer does.

A BURIED TREASURE

One of the great drains through which the earnings of Nova Scotia farmers go out of the country is the purcahse of imported fertilizers. Probably the Province will never have an adequate supply within its own bounds of these materials, certainly not some of them. There is a possibility that the vast amount of fish scrap now wasted about our shores may some day become a valuable asset. However that may be, there is a huge resevoir of useful fertilizers underlying a large part of our farming area. Whole hills and ridges of limestone are scattered over the western end of the Province particularly.

The chief difficulty thus far in making use of this vast store is the lack of capital for its development. Behind this, of course, lies the fact that most people have not yet realized its value. As fertilizers go, ground limestone or even burnt lime, can be produced very cheaply, and with comparatively small outlay for plant

The results of the use of lime are not spectacular. One fair application will increase the yield of our average soils, say from 4 to 7 bushels per acre of ordinary grains per each year, over a period of 4 or 5 years, enough to make the difference on many farms between failure and success.

The experience of other agricultural countries emphasizes the value of lime. English farmers use it habitually and universally. The U. S. with a soil naturally containing a much higher percentage of lime than ours, placed it on the same basis as other necessities for production during the stress of war, and allowed only a ton per farmer, except by special permit, so that there might be enough to go around. The State of Illinois, one of the finest and most progressive agricultural areas in America, had one plant for grinding the limestone in 1912, and now has 57.

Here is an opportunity for a comparatively small capital investment to make available to farmers one of our great natural resources. Parties interested would do well to communicate with Prof. Harlow at the College of Agriculture, Truro.

ECHOES FROM THE NOVA SCOTIA DEPARTMENT OF AGRICULTURE

(Continued from page 203)

cotton seed, the Dept. of Agriculture, with characteristic decision, secured export license for this substitute. Farmers, Co-operative Associations and the trade generally have purchased some 1500 tons of this excellent feed and the Department is ready to secure further quantities if necessary. Linseed meal is particularly valued in Great Brtiain, Holland and Denmark and the armistice has already resulted in substantia lpurchases by these countries. Consequently this food has increased in price to Canadian buyers through the cessation of hostilities.

SEED WHEAT

Never in the history of Nova Scotia were there so many fine fields of wheat as in the past season, and never was the temptation so strong to grind it into flour, bran and shorts. Most of the N. S. wheat this year is of fine quality, having fortunately escaped the wet weather. The Department of Agriculture is advised that many farmers plans to mill all their wheat, saving none for seed. It is hoped that those who have first class wheat will save as much of it as possible to supply themselves and sell to their neighbours. The home grown seed, this year particularly, will be much preferable to that which can be imported. It cannot be too strongly urged, both from the patriotic and the business points of view, that a good share be saved for next spring's seed. Should there be a surplus then it can be turned into flour at a time when the shortage of imported flour will be more acute than at present.

SAVE YOUR SEED GRAINS

Last year Nova Scotia farmers had to import thousands of bushels of oats, wheat and barley for seed at very high prices. A repetition of this can be avoided next year if every farmer now will take account of his own and his neighbour's needs along this line and plan accordingly. Nova Scotia has had a record crop of grain, although some of it has been discolored by rain, yet its quality for seed has not been reduced. Indeed, it is far superior to the seed that will be available from other sources. Western Canada, which usually is the source of supply, suffered heavily by drought and frost. Past experience proves that grain grown under these conditions lacks vitality and will not give satisfactory results. The Secretary for Agriculture, who arranged for the importation of many cars of the best seed that could be got last spring, states that in general those who saved the home grown seed had the best returns. So from both points of view, of initial expense and of crop results, every farmer should do his best to provide himself with the home grown seed.

USE HOME GROWN SEED

The old scripture saying: "A prophet is not without honour save in his own country" is no longer applicable to seed grains. Experiments at the College in Truro, as well as the experience of hundreds of farmers, prove that home grown seed oats, wheat and barley, when properly selected, yield better crops than the imported grains. In the past, the very opposite impression has prevailed, largely because the imported seed was cleaned of foreign matter and small seeds, whereas the home grown was only to be had in its natural condition. Fortunately during the past five years, farmers have turned more and more to the home grown, acclimated article, and under the policy of the Dept. of Agriculture for the encouragement of fanning mills, a large number of these have come into the Province. These mills should be worked to capacity this winter in the preparation of clean, virile, home grown seed.

A GOLDEN AGE FOR SHEEP BREEDERS

It is reported by men of the N. S. Dept. of Agriculture, who travel about through the Province that farmers are saving their ewe lambs to a greater extent than ever before. This is important and encouraging news, and indicates one of the real gains which Nova Scotia is making through war conditions. This Province is not excelled by any in Canada for sheep raising, but the numbers kept are still far below its capacity and supply only the merest fraction of the demand for mutton and wool products. However, with the additional ewes this year and the infusion of so much good blood made possible by the action of the Local and Federal Depts. of Agriculture, the outlook for sheep breeding in N. S. is very bright.

FEED FOR DAIRY CATTLE

Apart from linseed meal, of which through private enterprise and the efforts of the Dept. of Agriculture, there is a considerable quantity on the marwet in Nova Scotia, the other feeds now obtainable fall into three groups: First—those with rather low protein content (say 10% to 16%) and with a comparatively high fibre content (say 8% to 18%). This class of feeds may be used to best advantage in feeding dairy cows. Second—those feeds which have rather more protein and less fibre. These are especially valuable hog feeds. Third—The feeds which are particularly high in protein as linseed and cottonseed meal. These may be used to add protein to the ration and stimulate the flow of milk.

There is a variety of these proprietary feeds to be had and the farmer is often puzzled as to which is the best to buy. In general these feeds which have about the same protein and fibre content are of about equal value for feeding purposes. For example: if you are offered a number of feeds varying from 10% to 12% in protein and from 8% to 10% in fibre there is probably little difference in their feeding value, and the one offered at the lowest price is the one to buy.

MAPLE SUGAR
CANE SUGAR
BEET SUGAR

wanted, but especially MAPLE SUGAR, for it grows on the spot, has not to be imported, takes no shipping space and is so valuable a food product these days that every maple grove owner should make nothing but the best syrup and sugar. Anything but the best is not doing your best for food production. Tap all your trees.

A Grimm Champion Outfit

ensures good syrup and sugar, and no waste. Put your maple bush in thorough working order and write us about a good outfit.

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Clydesdale horses, Ayrshire and Guernsey Cattle, Shropshire Sheep.

Present Offering:—1 imported pure bred Stallion.

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Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

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OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 18 months old, sired by Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

Clearing Sale of Shorthorn Cattle

Am offering for sale my herd of pure bred registered Shorthorn cattle. These cattle range in age from 7 years to 3 years, or a little less, with one bull calf two weeks old, and are all fine in type and color.

I have also exceptionally good grade cattle of various ages for sale. All will be sold at a reasonable price and offer an unusual opportunity to anyone desiring to start a herd of choice stock or to renew an old herd.

J. E. HETHERINGTON, - Codys, N. B.

GUERNSEY BULLS!

I offer for immediate sale, the Guernsey Bull, Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

FOR SALE !

One pair two year old Mammoth Bronze Turkeys, $8.00 (eight dollars.) One fine Guernsey Bull Calf, three months old. This animal is well grown, from a dam with a fine milking record.

SARAH E. MOSES SMITH,
WOODWARDS COVE, - - N. B.

FOR SALE
R. O. P. HOLSTEINS.

Two bulls ready for service, and several bull calves. The right type and prices right.

For description and price write,

D. R. NICHOLSON,
"Riverview Farm", Coxheath, N. S.

FOR SALE!

Present offering, one Bull Calf.

P. R. L. FAIRWEATHER,
Rothesay - - N. B.

Butter Parchment at Farmer Office

Lawndale Stock Farm
Jerseys and Shorthorns (Pure Bred)

JERSEYS:—

One registered Bull Calf, solid colour, (fawn) dropped in October, 1918. Out of a R. O. M. dam, by a "Golden Fern's Lad" sire.

Our latest importation consists of a young cow and yearling heifer, direct from the Island of Jersey.

SHORTHORNS:—

One registered Bull Calf, red, little white, dropped in March, 1918. He is large, in splendid condition, and out of a fine milking dam.

One or two heifer calves, red, little white, dropped in the summer of 1918, out of good milking dams; all three of the aforementioned calves are sired by the best son of "Stately Monarch", Champion in three Provincial Shows.

Our latest importation is a new Herd Bull, direct from the Milking Shorthorn herd of Lord Rothschild, Tring Park, England.

I. M. LOVITT, M.D.,
Yarmouth North, - Nova Scotia

Maple Green Farm Holsteins

Just now we are offering some fresh calved cows and some due to freshen shortly, also yearling heifers and heifer calves, all with official records or from official record dams. Remember this is the only herd in Eastern Canada which owns two Jr. 3 year olds with official records of 25.05 and 26.54 lbs. butter in 7 days.

Herd sires in service, "Maple Grove Mercena Mercedes," No. 11727, the sire of our 26.54 lb. Jr. 3 year old and who so far has not a tested daughter testing under 4%. Our Jr. herd sire, "Homestead Hengerweld Rooker," No. 20652, three-quarter brother to our 25.05 lb. Jr. 3 year old.

For particulars write

R. L. HICKS
Dalhousie Jct., - - N. B.

ROSEWARNE
S.C. White Leghorns

I am now booking orders for baby chicks and hatching eggs from my well known bred-to-lay strain. Chicks will be very scarce this spring, and there will be a wild scramble later on for supplies, so get your order in early and pick your date.

My cockerels and pullets, out of same matings as day-old chicks were sold from last season, swept the board at Halifax.

Send for prices and mating list.

ERNEST CRAZE
Port Williams, - - N. S.

GLENRANE STOCK FARM

We are offering some very fine pure bred registered calves from 2 weeks to 8 months old These calves are sired by "Homestead Hengerweld Rooker" ¾ brother to a 26 lb. jr. 3 yr. old. They will be sold reasonably if taken at once. We also have several litters of very fine York pigs.

ROBERT C. HICKS,
West Bathurst, - - - N. B.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

FOR SALE!

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st, 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and 1st in grade cow, competing against all breeds at our late show at Charlottetown. with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

A number of Young Bulls fit for service, out of Record of Merit cows. This herd has been under test for a number of years. Herd now headed by "Star of Fern Brook" and by "Star Glen Cairn", brother of the noted Jean Armour.

J. FRANK ROACH, Proprietor,
Phone 111. - - - - Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.

We have young bulls for sale whose two nearest dams (both Canadian champions) average as high as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows: and one ready for service from a 41-lb. sire and an 18,000-lb two-year-old dam. Send for our BOOK OF BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT

BELLEVUE STOCK FARM
Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, HAMMOND RIVER, N. B.

We are offering for sale calves of both sexes, sired by Dutchland Pieterje Count, a bull of splendid size and type, whose four nearest dams have records averaging 28.61 pounds of butter in seven days. His dam is a daughter of Colantha Johanna Lad, who has 101 A. R. O. daughters, 4 over 32 lbs., 7 over 30 lbs., three of them world's records for 365 days. If you want something choice, come and see these calves or write for further particulars.

We will also book orders for young Yorkshire pigs for next spring's delivery.

WM. S. HARDING, Prop.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

We have sold 13 head in the last few weeks but there are some dandy good ones left yet. Special offering—2 heifer calves and several bull calves, sired by Prince Colantha's Canary B. whose four nearest dams average 32.84 lbs. butter in 7 days; 105 lbs. milk in one day. These are beauties. A couple of yearlings and two-year-old heifers, bred to Prince, due in the fall. Several young cows and heifers milking, due to calve from August to December. We have a couple of bull calves fit to head the best herds in the provinces. Come and see them. We would be pleased to meet you at Truro if notified.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

BULL'S CREEK FARM
R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lbs. butter each in seven days. These cows have in turn been bred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkable combination of breeding and will sell a heifer calf or two. Get your orders in quick, they won't be here long.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

Registered Jersey Heifer

We offer for sale the registered Jersey Heifer, "Pride of Rose Bank," 3 years old, milking sired by Foxhall's St. John O'Dreamwold, whose dam gave over 10,000 lbs. milk in a year. Also Peerless Incubator, Barred Rock and White Leghorn Cocks and Cockerels, which would exchange for Barred Rock Hens.

ORCHARD HILL FARM
Brown's Flats - N. B.

Five Ayrshire Bulls for Sale !

From good milking strain. All fit for service.

Prescott Blanchard,
Truro - Nova Scotia

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 24. SUSSEX, NEW BRUNSWICK, JANUARY 21, 1919 Number 8.

Feeding Cattle in Nova Scotia

By Prof. John M. Trueman, N.S.C.A. Truro, N. S.

The food requirements of cattle may be placed in two divisions; first, the amount needed to maintain the animal, anad second, the amount used to produce growth, fat, milk, or work. The amount needed to keep the animal body in proper condition without laying on fat or producing growth, or giving milk or doing work is called the maintenance requirement, and uses up from one-half to two-thirds of all the food the animal is able to eat. By fixing in our minds the fact that animals must use a relatively large amount of food to maintain life we are strongly impresed with the necessity of giving them extra food in order that the products useful to man may be obtained.

In studying feeds we divide their chemical compounds into two main classes. First, crude protein, which is the part of the food which the animal uses to produce red muscle, and to build up the body. All of our farm feeds contain these protein compounds. They are found in the form of gluten in wheat and corn, and are contained in large quantities in the seeds of flax and cotton. The richest protein seed grown in Nova Sdotia is the field pea. The leguminous fodders such as clover hay and peas and vetches are quite rich in protein and for that reason are especially valuable as farm feeds.

The second class of food stuffs includes those chemical compounds especially valuable for the production of heat, fat and work. They are called the carbchydrates and fats, and are represented by fibre, starch and sugar, and by the oils or fats found mostly in seeds. In making up a ration for farm animals it is necessary to arrange for the right proportion of protein and carbohydrates.

The requirements of a ration are stated as so many pounds of digestible protein and so many pounds of total digestible nutrients, the latter term including the protein as well as the carbohydrate sand fat. In the table at the end of this article the column headed total digestible nutrients is made up in this way.

Numerous experiments have shown the average amount of digestible protein and total digestible nutrients required to mainta a cow of any given weight, and also how much is necessary to produce a pound of milk. The standards given below are those in use at the Nova Scotia Agricultural College and are practically the same as those given in the 1915 edition of Feeds and Feeding by Henry & Morrison.

Feeding standard for dairy cows:—

	Digestible Crude Protein lbs.	Total Digestible Nutrients lbs.
For maintenance for each 100 lbs. of live weight	0.07	0.7925
To the allowance for maintenance add:		
For each pound of 3.5% milk	0.061	0.319
" " " 4.0% "	0.065	0.350
" " " 4.5% "	0.069	0.379
" " " 5.0% "	0.073	0.405
" " " 5.5% "	0.077	0.431

If the cow weighs 1000 lbs. multiply the maintenance standard for 100 lbs. by 10. If the animal weighs 1200 lbs. multiply by 12 and so on.

By this standard a cow weighing 1000 lbs. would require 0.7 lbs. of digestible urotein and 7,925 lbs. of total digestible nutrients for maintenance. If she were giving 30 lbs. of 4½ milk per day she would require in addition to the allowance for maintenance 1.95 (30 times .065) pounds of digestible portein and 10.50 (30 times .350) pounds of total digestible nutrients. Adding these to the requirements for maintenance we get a total requirement of 2.65 pounds of digestible protein and 18.42 pounds of total digestible nutrients for one day for a cow weighing 1000 lbs. and giving 30 lbs. of milk.

	Digestible Protein	Total Digestible Nutrients
For maintenance 1000 lbs. cow	0.7	7.925
For 30 lbs. of 4% milk	1.95	10.50
Total requirement	2.65	18.425

The following ration would supply this amount of nutriment:—

RATION NO. 1	Digestible Protein lbs.	Total Digestible Nutrients lbs.
18 lbs. Mixed Hay	0.846	8.55
50 " Turnips	0.500	4.70
2 " Wheat Bran	0.250	1.22
2 " Wheat Middlings	0.268	1.39
1 " Crushed Oats	0.097	0.81
2 " Cotton Seed Meal	0.740	1.56
	2.70	18.13

If the cow weighed 1000 lbs. and was giving 25 lbs. of 4½ milk daily the requirement would be 2.32 lbs. of digestible protein and 16.67 lbs. of total digestibel nutrients. This amount would be supplied in the following rations.

Ration No. 2

Mixed Hay	15 lbs.
O. P. V. silage	30 lbs.
Wheat Bran	2½ lbs.
Wheat Middlings	2 lbs.
Crushed Oats	2 lbs.

Ration No. 3

Mixed Hay	20 lbs.
Wheat Bran	3 lbs.
Middlings	4 lbs.
Crushed Oats	2 lbs.
Cotton Seed Meal	½ lb.

For heavier milking cows the concentrate of grain part of the ration should be increased, but they will not eat any more hay than the amount given in the previous rations. Scottie's White Floss, an Ayrshire cow in the College herd that produced over 12000 lbs. of milk in 1916 did her best work on the following ration which contains a very small amount of hay, but an additional 16 lbs. of roughage in the O.P.V. silage.

Ration No. 4

Hay	8 lbs.
Silage O. P. V.	16 lbs.
Turnips	60 lbs.
Bran	5.5 lbs.
Middlings	3.0 lbs.
Cotton Seed Meal	1.5 lbs.

This cow was fed 18 lbs. of grain daily for a few weeks, which is six pounds more than the amount given above, but this extra amount of grain protein produced no increase in milk flow, although it probably kept the cow in better condition and enabled her to kee up her milk production longer in the spring.

Two of the large Holstein cows at the College produced 70 lbs. of milk per day on the following ration:—

Ration No. 5

Hay	14 lbs.
Roots	72 lbs.
Bran	8 lbs.
Gluten	6 lbs.
Banner Feed	5 lbs.
Oil Meal	2 lbs.

These cows weigh 1300 lbs. or more each, and although they ate a small amount of hay they ate 21 lbs. of grain mixture. Both cows gave over 80 lbs. per day for some time and never had more than 21 lbs. of grain per day.

Rations No. 6 and 8 are given as samples of what may be fed when grain is high or difficult to get; although not as good as for producing milk as a heavier grain ration they will give fairly good results with most cows. They are figured for a 1000 lb. cow, giving 25 lbs. of milk.

Ration No. 6

Mixed Hay	18 lbs.
Turnips	50 lbs.
Crushed Oats	4 lbs.
Wheat Bran	4 lbs.

Ration No. 7

Mixed Hay	18 lbs.
Turnips	50 lbs.
Bran	4 lbs.
Middlings	3 lbs.

Ration No. 8

Hay	15 lbs.
O. P. V. Silage	30 lbs.
Wheat Bran	3 lbs.
Turnips	15 lbs.
Cotton Seed Meal	1 lb.

Ration No. 9

Mixed Hay	15 lbs.
Corn Silage	30 lbs.
Wheat Bran	3 lbs.
Middlings	2 lbs.
Oil Meal	1 lb.
Cotton Seed Meal	1 lb.

Ration No. 9 uses corn silage which is lower in protein than O.P.V., and consequently more high protein grain is needed to balanace it properly. It is an excellent ration, however, and can be used whenever corn can be grown succecssfully.

Ration No. 10

Mixed Hay	20 lbs.
Turnips	30 lbs.
Any feed in the bran group	3 lbs.
Linseed Meal	3 lbs.

Ration No. 11

Mixed Hay	12 lbs.
O.P.V. Silage	30 lbs.
Any feed in the bran group	3 lbs.
Oil Meal	3 lbs.

Ration No. 12

Mixed Hay	10 lbs.
O.P.V. Silage	30 lbs.
Any feed in the bran group	3 lbs.
Linseed meal	1 lb.

Ration No. 13

Mixed Hay	20 lbs.
Any bran group feed	5 lbs.

Ration No. 14

Mixed Hay	10 lbs.
O.P.V. Silage	30 lbs.
Turnips	25 lbs.

Ration No. 13

Any feed of the Middlings group	4 lbs.
Linseed Meal	1 lb.

Ration No. 14

Ground Oats	3 lbs.
Shorts	3 lbs.

A study of rations, Nos. 1 to 9, will show that the feeds used in them are practically all straight farm feeds without any mixing. This class of feeds can be sold by the dealers without being registered or the analysis given on the bag. Linseed meal and Cotton Seed meal are not included in the free list but must be sold under a guarantee of their composition. In addition to those two there are on the market a long list of mixed, or proprietary feeds that are made up of a numbe rof by-products of various mills which must be sold under a registration number.

(To be continued)

6th Annual Convention of Dairymen's Association of Nova Scotia, College of Agricultuue, Truro, Jan. 8 & 9

The Sixth Annual Convention of the Nova Scotia Dairymen's Association and Creamery Butter Exhibition was held at the Agricultural College, Truro on Thursday and Friday, Jan. 9th and 10th. and was the most successful in the organization's history.

The officers of the Association for 1918 were:—

President—A. M. Wheaton, Wolfville, N. S.

Vice President—Harold Falconer, Stellarton, N. S.

Secretary-Treasurer—W. A. McKay, Truro, N. S. (N. S. A. C.)

Directors—President, Vice-President and J. D. McKenzie, Bridgewater, N. S., H. M. Aitken, River Hebert, N. S., J. C. Chisholm, South River Station, N. S.

The opening session, held in the College of Agriculture on Thursday, Jan. 9th, was attended by delegates from all the principal Creameries in the Province, and a number of visitors, representatives of different business firms, etc.

The President, A. M. Wheaton, of Wolfville, was in the chair and after a few appropriate, introductory remarks by Prof. Cumming, gave the President's address for the year.

This was followed by the report of dairying by W. A. MacKay.

The output of the Creameries showed a small increase over 1917 and a total turn over of $943,000,00.

Prof. Trueman delivered an address on Feeding the Dairy Cow.

Mr. H. R. Brown gave a report on cow testing, illustrated by chart, showing that where records were kept the production, per cow, increased from 20 per cent to 80 per cent as compared to where records were not kept.

Mr. H. W. Coleman, Dairy Superintendent for New Brunswick, gave the report of the judges, followed by presentation of special prizes by Mr. Harvey Mitchell.

A complete report of the prize list follows:

DAIRYMEN'S ASSOCIATION OF NOVA SCOTIA

Summer Butter Competition 1918.

Name	Address	Official Score	Award
Pictou Co. Dairy	Stellarton	91.10	1st.
LaSociete Industrie Laitiere	Meteghan	90.96	2nd.
Intercolonial Creamery Co.	South River Station	90.78	3rd.
Scotsburn Creamery Co.	Scotsburn	90.50	4th.
LaHave Creamery Co.	Bridgewater	90.45	5th.
South River Creamery Co.	Lock Katrine	89.97	6th.
Brookfield Creamery Co.	Brookfield	89.94	7th.
Cumberland Co-operative Creamery	River Hebert	89.62	8th.
Milburn Creamery Co.	Malignant Cove	89.56	9th.
Margaree Creamery	Margaree Forks	89.40	10th.
Acadia Dairy Co.	Wolfville	89.26	11th.
Baddeck Creamery	Baddeck	89.14	12th.
Antigonish Dairy Co.	Antigonish	88.88	13th.
Crystal Spring Creamery Co.	Little Bass River	88.58	14th.
Bay View Creamery Co.	Selma	88.22	15th.

Special Prizes in Summer Butter Competition.

Smith and Proctor Prizes, Halifax, N. S.

Cash $60.00 Duplicate Association Prizes.

Fitted Club Bag

To Creamery Manager having the most representative increase in butter made during the year.

Won by W. L. Brenton, Brookfield.

Club Bag

To the butter maker having the most uniform score during the season.

Won by J. D. McKenzie, Bridgewater.

De Laval Company Limited, Peterboro, Ont.

To the Creamery having the highest average score during season.

1st. An Alpha Testing Outfit.

Won by Pictou Co. Dairy Co., Ltd.

2nd. An Alpha Moisture Test.

Won by Intercolonial Creamery Co.

R. B. Colwell Prizes, Halifax, N. S.

Five Prizes of $10.00 each to the highest monthly score.

June:
Brookfield Creamery.

July:
Pictou Co. Dairy Co., Limited.

August:
La Societe d'Industrie Laitiere Ltd.

September:
La Societe d'Industrie Laitiere Ltd.

October:
Antigonish Dairy Co. Limited.

Winter Dairy Exhibition.

Section 1—28 lb. Box New Made Butter.

Award	Name	Address	Score.
1st.	LaHave Creamery Co., Ltd	Bridgewater	95.6
2nd.	Scotsburn Creamery Co., Ltd	Scotsburn	95.0
3rd.	Brookfield Creamery Co., Ltd	Brookfield	94.8
4th.	Antigonish Dairy Co., Ltd	Antigonish	94.0
5th.	Acadia Dairy Co., Ltd	Wolfville	93.5
6th.	Baddeck Creamery (Won on Flavor)	Baddeck	93.3
7th.	Intercolonial Creamery Co.,	South River	93.3
8th.	Bayview Creamery Co., Ltd.	Sterling Brook	92.6

Section 2—30 lb. Box in Prints.

1st.	Scotsburn Co., Ltd	Scotsburn	95.7
2nd.	Antigonish Dairy Co., Ltd	Antigonish	95.1
3rd.	Brookfield Creamery	Brookfield	94.4
4th.	Acadia Dairy Co., Ltd	Wolfville	93.7
5th.	LaHave Creamery Co., Ltd	Bridgewater	93.2
6th.	Intercolonial Creamery Co., Ltd	South River Station	92.9
7th.	Bayview Creamery Co., Ltd	Sterling Brook	92.3
8th.	Pictou Co. Dairy Co., Ltr	Stellarton	92.1

SPECIALS.

By the Canadian Salt Co., Ltd. Windsor, Ont.

To the highest scoring Butter in Section 1 or 2

1st. Scotsburn Creamery Co., Ltd $12.00
2nd. LaHave Creamery Co., Ltd 10.00
3rd. Antigonish Dairy Co., Ltd 8.00

The above Salt Co., also donated badges for the members of the Association.

By C. Richardson and Co., St. Mary's, Ont.

To the Highest Scoring Butter in Section 1 or 2

1st, Scotsburn Creamery Co., Ltd—Sterling Silver and Mahogany shield.
2nd. LaHave Creamery Co., Ltd—Sterling Silver and Mahogany Shield.

By J. B. Ford Co., Ltd. Wyandotte, Mich.

To the Buttermaker making the highest total score in Secion 1 or 2.

1st. A Size 12 Elgin Movement 15 Jewel watch, 20 year gold filled case.
Won by Scotsburn Creamery Co., Ltd.

2nd. Cartridge Premo Roll film Camera, single Archromatic lens, reversible finder fovesing scale.
Won by Brookfield Creamery.

BUTTER BUYER'S TROPHY.

Donated by Smith & Proctor, R. B. Colwell and Nickerson & Co., Halifax and Smith and Proctor Ltd., and The Harris Abattoir Co., Ltd. Sydney.

To become the Property of the exhibitor of the highest scoring butter at the Exhibition it must be won three times before becoming his absolute property.

Won by Scotsburn Creamery Co., Ltd. in Section 2.
Previous Winner—1916—Brookfield Creamery
1917—LaHave Creamery Co., Ltd.
1918—Siotsburn Creamery Co., Ltd.

Friday forenoon was devoted to a Scoring Competition, the winners and scores being:

1. John E. Falt, Antigonish.....96.4
2. Alex. Cameron, Lr. South River 93.9
3. D. E. McLeod, Baddeck.....92.8
4. W. L. Brenton, Brookfield....92.3
5. J. D. McKenzie, Bridgewater..91.5

This was followed by a general discussion on the quality of butter, dealing particularly with the new grade standards, and emphasizing the fact that all the butter at the convention of which the cream had been pasteurized had scored th highest and showed the best keeping qualities.

Friday afternoon was the business session, Reports of committees, Officers, etc.

The officers elected for 1919 are as follows:

President—H. Falconer, Stellarton.

Vice-President—J. D. McKenzie, Bridgewater.

Directors—President, Vice-President and J. C. Chisholm, Lower South River, W. L. Brenton, Brookfield and Robert T. Stewart.

Members of the National Dairy Council, Harold Falconer, Stellarton, and D. W. Murray, Scotsburn. Sec'y. Treas. W. A. McKay, Truro.

The following resolutions were considered and after full discussion were adopted:

No 1.—Moved by Harold Falconer, Seconded by D. W. Murray.

Whereas, at the Dairy Conference held in Ottawa Nov. 25-28 last, it was thought by the representatives present it would be to the best interests of th Dairy Industry to form a National Dairy Council and whereas,

After due discussion and consideration the National Dairy Council of Canada was formed and whereas.

That some method of having some immediate financing for the Dairy Council, it was duly passed that each provincial representative pledge himself that his province would pay to the National Dairy Council the sum of One Hundred Dollars and whereas.

Each Province had two representatives, this Provincial Association is pledged to pay to the National Dairy Council the sum of Two Hundred Dollars.

Therfore be it resolved that this Dairymen's Association of Nova Scotia do authorize the treasurer to pay to the National Dairy Council the sum of Two Hundred Dollars, the same to be paid before Feb. 1st, 1919, and the method employed for raising the funds for this amount be a tax levied on each creamery proportioned according to the amount of business done by each creamery during the year 1918.

Adopted.

No. 2.—Moved by John E. Falt, Seconded by J. D. McKenzie.

Whereas, the system of cream grading when followed by creameries has resulted in a marked improvement in the quality of the cream received and in the butter manufactured therefrom, and

Whereas, this improvement has not been noticeable where a premium was not paid for No. 1 cream.

Therefore, be it resolved that this Association recommends to the Creameries of the Province of Nova Scotia the advisability of cream grading to conform to the grade standards as advised by the National Dairy Council, coupled with the payment of

a difference of at least two cents per pound fat between grades.

Adopted.

No. 3.—Moved by Robert T. Stewart, Seconded by John E. Falt.

Whereas, the world war is about to be terminated successfully to the Dominion of Canada and

Whereas, That from now on will come a period of readjustment of the Agricultural Industries in Canada, and

Whereas, it is generally agreed by agricultural experts that the larger part of the agricultural portions of Nova Scotia is better suited to Dairying than any other branch of agriculture, and

Whereas, to bring about the necessary changes in the condition of the country to make the citizens of Nova Scotia realize the opportunities that lie before them in Dairy Work, a very progressive and effective means of education will have to be effected, and

Whereas, a beginning has been made along this line through the medium of the so called Maritime Dairy School which has been in existence in connection with the College of Agriculture at Truro for two years and was supported financially and otherwise by the three Maritime Provinces, and

Whereas, the present buildings, plant and equipment are not large enough for the development of the school,

Be it resolved that the Dairymen's Association in Annual Convention assembled, place its appreciation on record for the good work that has been done in the past in getting the Dairy Interests of the Maritime Provinces centred togethr in the Maritime Dairy School.

That it is convinced that better and more efficient work can be done through the medium of one school of sufficient size and capacity than more.

That a school of this class should be purely Maritime, that is, owned and operated co-operatively by the three Maritime Provinces.

That just as soon as possible a school of sufficient size and with proper equipment to best accomplish these purposes be established.

That a committee of three are appointed from this Association to present this resolution to other interested associations and also to the proper Government Officials in the different provinces.

Adopted.

No. 4.—Moved by J. D. McKenzie, Seconded by Harold Falconer.

Whereas, that from information that we have received from the results of the Summer Butter Competition, be it therefore resolved that this Association carry on this Competition again during the season of 1919, and we would also recommend that we impress upon our Creamery Managers the importance of having a butter that will conform to the new grade standards as recommended by the Dominion Dairy Conference at Ottawa, Nov. 1918.

Adopted.

No. 5.—Moved by Robert Stewart, Seconded by John C. Chisholm.

That the use of inferior bulls by the farmers of Nova Scotia is in a large measure responsible for lack of increased production by the dairy cows of the Province is recognized by everyone. Being sure that a more general practice of cow testing would mean the elimination of many of these inferior animals:

Therefore be it resolved that this Association request the Provincial Department of Agriculture through the Superintendent of Agricultural Societies, the District Representatives and other officers of the Department to make greater efforts to increase the practice of cow-testing.

Adopted.

No. 6.—Moved by Alex. Cameron, Seconded by W. L. Brenton.

Believing that to the creameries and cheese factories of Nova Scotia increased production per cow and per patron is of greater importance than an increased number of patrons, or in fact than any other factor in the development of dairying in Nova Scotia,

And believing also in view of the results obtained in all parts of the Province that cow testing and the keeping of dairy records is the one and only method of bringing about that increase,

Therefore be it resolved—that this Association strongly state its conviction that the management of every creamery and cheese factory in the Province should take some definite action to extend the work of cow testing among their patrons.

Adopted.

No. 7.—Moved by J. D. McKenzie, Seconded by D. W. Murray.

Considering the large increase in the production of milk and butter fat by patrons of various creameries and cheese factories in Nova Scotia, who have been carrying on the work of cow testing for some time, and believing that persistent efforts will finally make the practice much more general,

Therefore be it resolved—that this Association express their sense of gratitude to the Dairy Division of the Dominion Department of Agriculture for the manner in which this work has been conducted in the past, and that we also request that no effort be spared to extend the work in the future.

Adopted.

No. 8.—Moved by H. A. MacDonald, Seconded by D. E. McLeod.

Whereas, at the meetings of this Association last evening and this morning, it was showed us the amount of very effective work which was done by the Judges in placing the awards,

Therefore, be it resolvd, that we express our appreciation of the work in connection with the present exhibition, and also their work in the past, to the Judges, Mr. Harvey Mitchell, Mr. D. J. Cameron and Mr. H. Coleman.

Adopted.

No. 9.—Moved by J. D. McKenzie, Seconded by Robert Stewart.

Whereas, in the years past the following have contributed so liberally to the success of the exhibitions which have been held in connection with this Convention,

Therefore, be it resolved that the thanks of the Dairymen's Association be forwarded to The Canadian Salt Co. Ltd., The DeLaval Company, Ltd., The J. B. Ford Co., C. Richardson & Co. and also the butter buyers, Messrs. Smith & Proctor, R. B. Colwell, Nickerson & Co. of Halifax and Messrs. Smith & Proctor and The Harris Abattoir Co., Sydney.

Adopted.

No. 10.—Moved by R. B. McLennan, Seconded by W. L. Brenton.

In years past the Dairy business of Nova Scotia had in the person of Mr. George Vinten a strong supporter and advocate, but for some years ill health has kept him from our councils,

Therefore, be it resolved that we extend the sympathy of this Association to Mr. Vinten on his inability to be with us and that a copy of this resolution be forwarded to Mr. Vinten.

Adopted.

The keynote of the whole convention this year was that if Dairying is going to be made the success in Nova Scotia that the circumstances and possibilities warrant; that all connected with it have got to get down to business much harder in the future than in the past.

BACK TO ORDINARY OPERATIONS

The Smith Foundry. Fredericton. one of the firms whose efforts along with those of other Canadian shell makers. have helped to attain a splendid final victory for Britain and her Allies, are annuouncing that munition work having closed, they are able to resume their ordinary operations. Look up their ads. in the columns of the Maritime Farmer, where they have been consistent advertisers for a number of years, of their general foundry and machine shop products.

AN AWFUL MILITARY APPOINTMENT

The appointment of Col. W. E. Thompson, as officer commanding the Sixth (Halifax) Military district has been announced. Col. Thompson has been basking in the comforts of Halifax for four long years. He has a partner, Lieut. Col. Adams, who has been risking his life for almost the same length of time in the same city. Both were majors in the militia when the war started. Neither has seen active service. Yet one has been placed in command of the most strongly fortified British possession in America. And this selection was made in the face of Canada's promise that it was the men who fought Canada's battles were to be preferred to the stay-at-homes.

If Col. Thompson had been selected for any other post than that of O. C. of the front door of Canada, one would not think so much of it. But every man who returns from the front, whether he be a winner of the Victoria Cross, Military Cross, Military Medal, or other distinguished honor, or for that matter the entire lot, will be compelled to SALUTE Col. Thompson, should be happen to be at the landing place, DISCHARGING HIS ONEROUS MILITARY DUTIES.

It has been the proud boast of Canadians at the front, that in two years they never lost a gun, never relinquished a foot of ground they had consolidated, and never failed to take a position they were sent forward to attack. And their reward when they reach Canada, should the landing be at Halifax, will be to salute an officer, who by no possible stretch of imagination, is entitled to the post he occupys.

Thousands of young men left the farms of the Maritime Provinces voluntarily. Hundreds of these brave lads are buried in France or Flanders. Their comrades who survive will return to find, not one of their fellows, but a man whose military record has been ridiculed pretty extensively, in command at Halifax. Well might that magnificent Canadian McRae express himself:

"Take up the quarrel with the foe,
To you with falling hands
We throw the torch; be yours to hold
it high.
If ye break faith with those who die
We shall not sleep, though poppies
bloom
In Flanders fields."

Had he in mind. when he penned these wonderful lines, which will endure forever, such things as the appointment of this man Thompson to the position which he presently occupies. Is this to be the reward of men who have bled and suffered, and whose hells in the last few years have been measured by their service? Are they to be ignored while our home clinging soldiers are given the highest positions in the gift of the Canadian military authorities? If farm organizations wish to resolute, here is a fitting subject for every farm organization in Canada. Send them to General Mewburn, the Minister of Militia, Ottawa. If he doesn't realize how public opinion looks upon this thing; then let the fathers of fighting Canadians enlighten him.

THE PASSING OF CARL STEEVES

A few sort weeks ago we visited the farm of J. Carl Steeves, of Petitcodiac, where the Government Clover Huller was in operation. Seven hundred pounds of good clover seed had been threshed on this farm this fall and the huller was still busy. He talked of plans for the future and was enthusiastice over the prospects of sowing clover seed with a lavish hand in the spring of 1919. This progressive young farmer was just the type of young man that one delights to meet and whose cheerfulness makes one better because you had met him. He will not sow clover seed in 1919. Divine eProvidence had other plans in store for him and called him to the great beyond on the third inst. He succumbed to an attack of the dreaded "flu" at the early age of twenty-six years, leaving a bride of only a few months and a mother and sister to mourn their loss. We extend our sincerest sympathy. His passing is a loss to the province. ,

Maritime Farmer's Automobile Department

Subscribers will have an opportunity of getting many supplies at reasonable prices. Tires for small cars.

The Maritime Farmer has arranged for an automobile supply depot for its subscribers. The Maritime Farmer will run regularly an automobile information department. It will be illustrated and in it will be given in each issue valuable hints for the upkeep and operation of your car. An expert will be in charge of this section of the paper. If you are having troubles with your cars, write us, when the service starts, and if you are a subscriber, we will ask our expert to unravel your tangle. Any car owner will find information in this section which may save him many times the price of the subscription to the Maritime Farmer. If there is a car owner who does not get up against it good and hard at some stage of the game, he is a rare bird and is to be envied. The auto expert will be paid by us to help you, and we believe he will be able to do so.

In regard to supplies, we will be able to furnish you a tire for small cars, Maxwells, Fords, Gray Dorts, Chevrolets, etc., in plain and non-skids. These tires have a guarantee behind them of 3,500 miles. They are made by a reliable company. The prices will be f.o.b. St. Jorn or Sussex, non-skids $19.00; plain tires $16.25. We offer spark plugs at 90c., 95c. and $1.00. They can be supplied for any make of car. They sell in the open market at $1.25, $1.35 and $1.50. These prices are cash with order. REMEMBER WE ARE NOT GENERAL DEALERS. WE ONLY SELL AT THESE PRICES TO BONAFIDE SUBSCRIBERS OF THE MARITIME FARMER.

We have a number of other lines which will interest you and would appreciate a line from you. Later we expect to have all sizes of tires. Last season we contracted for our supply but were cut out because we declined to sell at the high price fixed for us by the manufacturer. We wanted tires for MARITIME FARMBR SUBSCRIBERS and WE PROPOSE TO GET THEM.

Tell your friends about it. If they own cars, get them to subscribe to the Maritime Farmer. We will save them a good many dollars in the years to come.

THE MARITIME FARMER

And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the people of the Maritime Provinces.

Official Organ of The Farmer and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The Maritime Poultry Association, and the Newfoundland Agricultural Board.

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The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

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DATES OF ISSUE.

February 4-18
March 4-18

JANUARY 21, 1919.

CORNER STONES OF SUCCESSFUL AGRICULTURE

Live stock raising, be it cattle, sheep, or swine, is a safe line of agriculture for any farmer in Maritime Canada. Taken as a whole and comparing one year's records with another, the sections where live stock play an important part in the farmer's programme have fewer off years and there are also fewer mortgages recorded against the farms.

To grow live stock successfully, however, it is necessary that an abundance of feed be produced at home. The less feed the farmer needs to purchase the better it will be for his bank account. Roots, clover and grains can be grown in abundance in all sections of the Maritime Provinces, and there is absolutely no need of the great inroads purchased feeds make upon our resources.

There are several prominent factors that our live stock breeders should not fail to consider, viz. drainage, liming, good cultivation and good seed, and to our way of thinking the order of their importance is the order in which they are herein named. It is a waste of time, energy and money to farm wet soil. A farmer may not be so situated in regard to finances and labor that he can afford to do any great amount of this class of work in one year. This is, however, a line of work that he cannot afford to go undone. No one can afford to farm wet soil, because he cannot get the utmost returns for time and money expended from a soil in which the plant's feet are so to speak, constantly in the water. We know how busy a man the farmer is. We have been through the mill and know whereof we speak, and we know that if he plans to do a little drainage work each year, he will eventually reach the goal. The added revenue from the ditched areas will as years go by assist very materially to accomplish the work on the remainder of the farm. Get the main waterway arranged first, and go at the work in a systematic way by following a well defined plan. If a plan of this kind is followed there is always a place where one can spend an hour or perhaps a few hours at a time ditching between busy seasons and from time to time during busy seasons, whenever the opportunity offers, and it is surprising how much will be accomplished throughout the esason in this way, during periods of time that perhaps would otherwise be used to less advantage. Show us a farmer who follows this plan and we will show you a farmer who will be steadily cilmbing the ladder of independence.

Next to drainage comes the question of liming to sweeten the soil and make it in every way more congenial for plant growth. There are thousands, yes, millions of tons of lime stone in the Maritime Provinces. Arrangements can be made to procure some ground lime stone at reasonable cost in almost any section, providing the farmers of the respective districts wish to procure this valuable product at rock bottom prices.

We heard a farmer a few weeks ago say that three years ago he had used ground lime stone at the rate of two tons per acre on a field from which he had never been able to get a satisfactory hay crop. The application of the ground limestone has wrought a change and even without the use of manure or fertilizer he has succeeded to cut two bumper crops of hay off the limed area. There are hundreds of instances of this kind. Soil overlaying lime stone rock has been found to be benefited by the application of ground lime stone.

Ground limestone is produced in a commercial way by several advertisers in the columns of The Maritime Farmer and then there is the Government Lime Stone crushers that groups of farmrs may get to do work for them at a nominal cost per ton.

Now that the soil is drained and limed the next step is good cultivation. Every extra harrowing makes the soil particles finer and the plant food therein contained more available. If, while the process of cultivation is going on, one can incorporate either staple manure, comport or commercial fertilizers with the soil where required, so much the better for the crop, and in many cases a small outlay for plant food of this kind gives a handsome dividend on the outlay at harvest time.

The fourth and last point in good farming systems which we wish to emphasize at this season, is the use of good seed. The best is none too good. It makes no difference how much preparation may be given the other factors of ones farming practice unless good seed is used the results will be disappointing. The farmer who builds his farming fabric on the four corner stones of drainage, lime, thorough cultivation and good seed will always have an abundance of feed for his live stock, and on a foundation of this kind will surely raise a structure of which any farmer and community may look with pride.

THE IMPORTANCE OF SAVING GOOD BREEDING STOCK

During the past four years, millions of men who had previously been producers of the largest part of the food stuffs required in Europe, have been engaged in fighting for their country, and, as a result, thousands of farms, flocks and herds have been depleted and the finest lands made unfit for cultivation. These European countries are looking to Canada for good breeding stock to restock their abandoned farms. The demand is unlimited and European markets will be able to receive double our present production, if we can produce stock of the quality required.

It is the sires of high quality which have made many a herd great and have done so much good to the live stock industry of Canada. Often the highest priced stock is the cheapest in the end.

A pur-bred sire of good type and individuality is the one that should be used by every live stock breeder in the country. The sire whose ancestors have not made good, or that is a poor individual, will likely turn out to be a liability rather than an asset. His use will never improve live stock even if one does get him cheaply. He is dear at any price. It is also very important that the females usd as a foundation, are good, strong, healthy animals of robust constitution representing the best type of the breeds which you are working with, and that they are descendants from ancestors that have proved worthy of the breed they represent in regard to conformation, quality and production.

This year above all others, with the high price of hay and live stock, farmers should endeavour to utilize to the best advantage possible, all roughages such as straw, corn stalks, etc., by running these through a cutting box and mixing with a small amount of cut hay, with the addition of a few pulped roots and a small quantity of meal, you will have a food which breeding stock will thrive and winter very well on, and at the same time enabling the farmer to keep his usual quota of breeding animals.

A good many farmers are in the vicinity of lumber mills or finishing mills where they are able to procure sawdust or shavings for bedding in the place of straw, or where they could use dry muck for an absorbent. By utilizing all the home grown roughages and keeping more live stock, the farmer will be increasing the fertility of his farm by a method which has been proven most conclusively the best and most economical way of maintaining agricultural production, never more essential than at the present time.

FEEDING CATTLE IN NOVA SCOTIA

In this issue of The Maritime Farmer will be found an article on "Feeding Cattle in Nova Scotia" by Prof. J. M. Trueman of the N. S. A. C., Truro, N. S. This timely article is from a bulletin recently issued by the Nova Scotia Department of Agriculture. The subject under discussion is also applicable to conditions in New Brunswick and Prince Edward Island, and should be read with interest by all farmers who have cattle to feed.

Prof. Trueman needs no introduction to the readers of The Maritime Farmer, suffice to say that as a practical agriculturist, he enjoys an international reputation. His addresses to farmers are always brim full of just the kind of information that helps. The feeding of cattle is a live question at the present time. Save this issue of The Maritime Farmer for future reference, you will get the value of your year's subscription out of the article in question.

* * *

J. W. Richardson, Caledonia, Ont., speaking at the recent Guelph Winter Fair, said:

"Farmers that you can trust are what we need to represent us in parliament, and I would be in favor of supporting Liberals and Conservatives on this basis. But you'd have to be sure that they ot just men who ownedwere real farmers, and n farms, as is often the case with those who get into parliament."

* * *

In order that people may be happy in their work, three things are needed. They must be fit for it; they must not do too much of it; and they must have a sense of success in it.—John Ruskin.

Self-conceit blinds; self-will destroys; self-oblation consecrates; self-sacrifice saves.

* * *

Look up, not down. Look forward, not backward. Love all and hate none.

Hairless Pigs---The Cause and Remedy

(E. B. Hart and H. Steenbock, Wisconsin)

(E. B. Hart and H. Steenbock, Wiscon

Every spring on the farms of Wisconsin as well as in other section of the "hog belt" there are born a considerable number of hairless pigs. Practically every county where swine raising is developed and from which we have had reports has had cases of this malady. It occurs in the northern as well as in the southern counties, and in the western as well as in the eastern part of the state.

In some other sections of our country, notably from Montana, the losses from hairless pigs have been enorous. It is estimated that from 100,000 to 1,000,000 are lost annually in that state alone from this cause, and it has become a serious menace to the swine industry in several states and to some of the swine breeders in our own state.

Hairless pigs are of normal weight and size, perhaps a litle above normal weight; they are generally carried the full gestation period and often four to seven days overtime. When absolutely hairless and born alive they may live a few hours after birth, but always die sooner or later. They are characterized by thick, pulpy necks, thick skin, no squeal, and no vitality. Where perfectly hairless the skin is smooth, shiny, and bald, except for a few hairs around the eyes and nose. The hoofs of hairless pigs are thin-walled and undeveloped. In the same litter there may be variations from pigs with full haired coats and full vigor to pigs with scanty-haired coats and little vitality.. Those with some hair may live if given special attention and care.

Pigs in this condition are more likely to be born from gilts than from old sows. They are more likely to be born in the spring than in the fall.

Goiter is the Cause

The cause of this malady in both sow and young pig is goiter, an enlarged, improperly working thyroid gland. The thyroid gland, at the center and base of the throat, in its enlarged condition accounts for the thick necks of the little pigs. The sow is also suffering from an enlarged thyroid, but this cannot be so readily observed due to the large, fat, fleshy neck. The goiter in the sow does not seriously affect her health and it does not affect her use for meat, but unless corrected it does interfere wtih her breeding functions. The thyroid gland of a normal new-born pib is about the size of a pea, while that of a hairless pigs is the size of a hickery nut. The gland in a normal sow varies in size, but usually is not larger than a walnut, while in a sow producing hairless pigs it is the size of a man's fist.

Studies of goiter in the human race have shown that when the thyroid gland is removed or its functions interfered with, as in goiter or in cancer of the thyroid, the hair and nails cease to develop and the skin of the face and neck becomes thick and pulpy. These conditions correspond very closely with those found in hairless pigs.

The immediate cause of goiter in the human race is not clearly established by medical science but a cure for the simple form has been found in the use of iodine. It is surprising how widely prevalent goiter really is. It is estimated that 85 per cent. of the dogs on the streets of Chicago show more or less enlargement of the thyroid; and goiter or "big neck" is being recognized more frequently in calves, lambs and colts. In the states of Oregon, Washington and Montana considerable losses by big neck in colts have, lambs, and calves have been reported and cases among lambs have been reported in our own state. At one time the sheep raising industry of Michigan was in danger because of goiter in lambs. Before the discovery of salt deposits around the Great Lakes its future seemed hopeless, but with the development of the salt industry and the use of salt by sheep growers goiter rapidly decreased. The salt contained appreciable quantities of idoine. At present the refined rock salts coming from Michigan, as well as from other parts of the United States, do not contain enough iodine to make their use a guarantee of goiter prevention.

Use of Iodine Prevents Hairless Condition

The fact that hairless pigs are the product of a mother suffering from goiter suggested the possibility of curing and controlling this malady with iodine. The thyroid gland forms a chemical substance containing iodine which it circulates thorugh the blood stream. This compound is of the greatest importance to the proper development of an animal. When conditions arise requiring more of this compound, and the iodine supply in the food is not increased, the gland enlarges to let more blood pass through it in a given time. It is, therefore, either a failure to absorb the iodine from the feed or a failure of the thyroid gland to absorb the iodine that is in the blood that causes goiter.

The thyroid gland of the hairless pig contains no iodine; a normal thyroid in its dried state contains about .2 per cent. iodine. The iodine supply in our feeding materials is comparatively low and this is true for all feeding materials. However, in most instances there is enough iodine present in our feeds when it is properly assimilated; but under certain conditions of life, the exact analysis of which is not possible in the present state of our knowledge, our farm animals are unable to absorb sufficient amounts of iodine.

How tao Use Iodine

We have successfully corrected the hairless pig trouble by giving the sow during her entire gestation period 10 grams (approximately 1/3 of an ounce) of potassium iodine per 100 pounds of feed. This material can be procured from almost any drug store. tI should be powdered to a meal as fine as flour, and then mixed with 100 pounds of feed.

There is no way, so far as we know, of telling beforehand whether or not a sow has goiter. But where hairless pigs have occurred on the farm it would be good insurance against their reoccurrence to use potassium iodide. At present prices for this chemical a sow can be carried through the entire gestation period for about 26 cents. Special quack remedies should be avoided; nothing but iodine will do the work and the products of vendors of special drugs should be avoided. This malady is not abortion, but is due to the poor working of the thyroid gland.

Tests of this treatment at the Montana Experiment Station have shown that about half of the amount of potassimu iodide we have used, when fed for 60 days, will prevent hairless pig production. We have not as yet had an oportunity to try the smaller dose, but would recommend that from 5 to 10 grams of potassium iodide (1/3 to 116 of an ounce) per 100 pounds of feed be used. Do not use more as it would be unnecessary and a waste of money. t Ihad better be fed the entire gestatoin period, or at least the last 75 days of gestation, until further experiments have decided whether a shorter period of use would be equally efficient.

Variations in the Malady

This malady is subpect to the greatest variations. Four sows in the same pen, fed the same ration and cared for in identically the same way, may give the following results: Two will come through with sound, normal litters; the third will give a mixed litter, that is, some with a good hair coat and some with scanty hair coat, or absolutely hairless; the fourth will give all hairless pigs. We believe these results are probably due to constitutional differences in the animals, inherent factors which always display themselves with any group of animals. A ration that is near the border line of deficiency in iodine and at the same time is slightly out of balance in some other respect may well affect some individuals more than others.

Again, a farmer may lose 90 per cent. of his spring pisg by this malady and yet that same breeding stock may produce under summer conditions, such as pasture and exercise, good litters in the fall. tI is such conditions as summer pasture and exercise that are important factors in preventing this malady without the use of potassium iodide.

Proper Rearing May Prevent Hairless Pigs

We have reared a considerable number of sows on rations made partly of grains, but with 25 per cent of alfalfa in the ration and under these conditions have never had a case of hairless pigs. They were even confined in pens while on these rations. But when our young stock was started at weaning time on concentrates such as grains and skimmilk, and little or no roughage was used in the ration, hairless pigs often resulted; and there was just as much iodine in one ration as in the other.

Alfalfa or clover hay should form 25 per cent. of the ration. If choice leafy hay is fed in a rack, sows will (usually) eat this proportioni of hay. However, if they do not eat enough of uncut hay to make about 25 per cent. of the ration, the hay may be cut and mixed with the other feed.

An extraordinary outbreak of hairless pigs occurred in the spring of 1917 in areas in Montana not previously affected. There had been a cold, long winter, roughage was scarce and the animals were wintered mainly on grains. nI the spring of 1918, after a mild winter, with practically no snow and plenty of hay, there were almost no cases of hairless pigs in the "unaffected" areas.

In Wisconsin, the spring of 1918 saw some of our breeders experiencing this malady for the first time. The winter had been extremely severe and roughages were scarce among those suffering most. Our experience indicates that the liberal use of roughage and the feeding of rations not excessively high in protein are by far the safest rules to follow in the rearing of gilts for breeding purposes, if the too common occurence of hairless pigs is to be prevented. Farmers should not rely wholly on grains and skimmilk for their breeding gilts. Introduce 25 per cent of the ration as cut alfalfa or clover. This gives bulk to the ration and insures proper elimination of waste through the intestines; it keeps the intestines in a healthy condition and will allow the absorption of sufficient amounts of iodine naturally present in the feed to meet the sow's needs without the use of potassium iodide. Keep the animals dry and provide exercise. Goiter is more prevalent in northern, mountainous districts with cold, long, damp winters and little sunshine, than in the warm climates with plenty of sunshine and opportunity for exercise.

The suggested method of rearing breeding swine may not always prevent goiter—some cases will need the potassium iodide treatment—but we believe proper rearing will go a long way toward solving a growing difficulty in this state. However, if you had hairless pigs in the spring of 1918 it will be advisable to use the potassium iodide treatment this winter.

Summary

Goiter, or an enlarged thyroid gland, the function of which is disturbed, is the cause of hairless pigs. Both sow and young are afflicted with enlarged glands.

The enlarged glands are deficient in iodine, which is essential to the proper action of this gland and the production of normal young.

Iodine, supplied the female breeding stock during the gestation period, will prevent this trouble. One-third to one-sixth of an ounce of potassium iodine to each 100 pounds of feed will prevent hairless pigs. Do not use more.

Rearing the breeding sows with plenty (25 per cent.) of good roughage, such as alfalfa or clover hay, in the ration and not an excessive amount of protein may do much toward preventing this trouble and thus avoid the necessity for using the potassium iodide treatment later.—Wisconsin Bulletin No. 297.

Explanations of Illustrations

Accompanying this article in bulletin form are several illustrations which are not available. Figure 1 shows " Dead Hairless Pigs." Figure 2 shows "A Mixed Litter of Haired and Hairless Pigs." Figure 3 shows "An Instance of Correction with Potassium Iodide." Figure 4 shows "A Gilt raised so as to Help in the Prevention of Hairless Pigs."

In reference to Figure 1 the authors say: Note the thick necks indicating a goitrous condition. The mother of these pigs had been started on a grain ration high in protein and no roughage. On this ration she did not thrive well and was changed to one consisting of 15 parts of alfalfa, 25 parts of oats, 25 parts of middlings, and 10 parts of oil meal. She had produced two littlers of hairless pigs on this ration before being changed to the ration of 33 parts of clover, 33 of corn and 33 of oats on which she again produced hairless pigs. This trouble was corrected in this same sow by the use of potassium iodide.

In regard to Figure 2 it is said that a sow may produce a litter in which there are both haired and hairless pigs. The hairless ones are dead, while those with the hair will show life and may be raised. This sow grew up on a ration of 30 parts of corn, 30 of oats, 30 of middlings, 8 of oil meal and 1 of tankage. She was under strictly confined conditions but appeared normal in every other respect, excepting in reproduction.

Figure 3 shows the same sow as in Figure 2 on the same ration, but to which was added 10 grams of potassium iodide to each 100 lbs. of feed. All the young were born alive and in normal condition.

In regard to Figure 4 the authors say: We believe that hairless pig production is often the result of improper feeding of young sows, such as giving them too high protein feeds and too little roughage in the ration. This sow was reared on a ration of 15 parts of corn and 25 of alfalfa. While the sow may grow at a somewhat slower rate than normal, yet the litters have always been haired and strong where sows have been reared on a ration containing 15 to 26 per cent. of roughage.

HORTICULTURE.

STORAGE LOSSES IN APPLES DUE TO FUNGI

Storage losses are generally explained as the result of improper storage conditions. This is no doubt to some degree correct, and when the losses occur in cold storage houses something is genrally amiss and neglect has occurred in maintaining proper conditions. But one must ask: Do apples which are properly stored, not suffer from rot? The answer is simple enough. Apples will keep almost indefinitely up to the time when a slow maturing process—which is a chemical process, changes the composition and natural collapse of the fruit takes place, providing they are absolutely sound when placed in storage.

The losses in storage amount annually to many thousands of barrels, simply because showing blemishes of one kind or another are stored with sound ones. The apple scab is one of the most common agents givnig rise to decay of fruit kept in storage. As long as the temperature of the cold storage is kept low—about 32 degress F. or close by—no rot is likely to show. But should such apples reach the vendor or the consumer the trouble will begin as soon as the temperature changes. Any injured or scabby surface of an apple is quickly invaded by the common fungi such as pink rot, blue mould, etc., and once these fungi commence their destructive work, a barred of apples is often destroyed more quickly than it could be eaten by an average-sized family. As soon as the rot is observed in a barrel, prompt action is called for. Out with all the apples; throw the bad ones right out, save what can be saved of partly spoiled fruit for immediate use, wipe the sound ones with a dry cloth and store them in a well ventilated but cool place, examining them from time to time. One rotten apple in a barrel will start all the others to rot in no time.

From the above it will be seen that, while improper storage conditions—and once in the hands of the consumer a barrel of apples will rarely find proper, i. e. cool, well ventilated, but particularly uniform temperatures—have some influence in starting the rot, if the apples are in good condition when placed in storage, the consumer will not so likely be the loser—as he benerally is. The time will come when the consumer will be allowed to deduct from his bills the losses which are due to the negligence of others, particularly at a time when high prices prevail.

CARE OF HOUSE PLANTS

In caring for house plants it should b eborne in mind that they are of two classes and that such plants as ferns, palms and the rubber plant will do better in those parts of the room where the light is limited, while floweriny plants, such as geraniums, tulips, narcissi and cyclamen, must hape as much light as possible. Plants are more like human beings than like bric-a-brac and if grown to brighten the home during dull winter months they must not be left to take care of themselves or they will soon fail to fulfill the purpose of the ir presence.

There are not a large number of successful house plants and those which experience has shown are best suited ofr the purpose demand certain definite conditions. The fundamental condition relates to the atmosphere of the room. If this is suitable even the soil is of secondary importance. The atmosphere must be kept at a suitable temperature and also, for success, must contain plenty of moisture. A dry atmosphere, even when plants are well watered, is fatal to good growtth. Regular watering is another important factor for success.

Plants wil lgrow better in houses heated by hot water than they will in those heated by hot air or steam. The latter systems absorb the moisture from the atmosphere with the result htat the plant either loses some of iits leaves by withering or fail sto make healthy growth. Pans of water stood on the radiators to give off moisture always improve the conditions for the plants. The blooms will last longer when the atmosphere is kept somewhat cool and moist. The ideal temperature rangs from about 50° to 70°. Higher temperature necessitates more frequent waterings. Some plants need to be watered daily, others not more than two or three times a week. A pot which rings hollow when tapped with the knuckles needs water. Over watering is bad for plants and only one or two varietise, like the spirea, will succeed if the pots are allowed to stand in water. All pots should be supplied with good drainage in the form of broken crocks filled in at the bottom of the pot when the plants are potted.

Fresh air is always beneficial, but not in the form of direct draughts. A temperature of 40° or lower will ofetn seriously affect the tender house plants. Palms and ferns are the better for sponging once or twice a month. Never water a sickly plant too freely; it more often requires to be repotted. Healthy plants will be benefitted by a yearly repotting. Healthy plants and plants in ower require much more water than those which are sickly. Soil should not be watered so often that it becomes soggy and always cold. A plant with cold feet and a hot head soon dies.

FALL SPRAYING OF ORCHARDS

An increasing number of the most experienced orchardists throughout the middle states and New England will apply the dormant spray to their orchards late in autumn or early winter. This practice has given better results dormant spraying in Morch or April, which has generally been the custom heretofore. The San Jose scale seems to increase and multiply during the warmer days in winter. If autumn spraying is thoroughly done with the rigth stuff, it sticks on until he new leaves are well developed and thus prevents San Jose scale from breeding or multiplying in either winter or spring.

Whether scalecide or other miscible oil sprays are used, or lime sulphur, spraying of the apple or peach may be done any time after the leaves have falle nin November or December when the temperature is well above freezing. Usually the ground is then dry and firm, so that the team and spray rig can get over the orchard more easily than in spring when thaw makes the ground muddy, if not impassible.

Another vital advantage in dormant spraying in late autumn is that on most fruit farms work is then less pressing. Even if help is scarce, it will be possible to get the spraying done in the slack time of November. But if this job is put off until next spring, when the help question may be even more serious, one may not be able to spray at all.

,For this reason also it pays to have a good spray rig with all modern improvements. My neighbor spent $700 for a power sprayer, which it first seemed extravagant, but it is proving the greates labor saver and money maker ha has ever had in his peach and apple orchard. Another labor-saver and money maker is the low-down tractor for plowing or cultivating orchards. With it one man can work as many acres of orchard as two or three men, each with a two-horse team. Fruit growers, like other farmers, have got to use these devices or quit the game, if hired labor is unobtainable.

APPLES IN STORE

Below is given an estimate of the apples in store at the following points on December 31, 1918. These figures will, of course, vary from day to day as shipments are made:—

Nova Scotia	150,000	
Halifax, N.S.	1,300	
Quebec, P.Q.	6,500	6,000
Montreal, P.Q.	19,800	11,17g
Ottawa, Ont.	9,000	3,000
Brighton, Ont.	4,000	
Colborne, Ont.	6,000	
Oshawa, Ont.	7,000	
Toronto, Ont.	6,000	23,000
Winnipeg, Man.	9,000	39,000
Calgary Alta.		13,650
Edmonton, Alta.		9,100
Nelson District, B.C.		15,980
Penticton, B.C.		4,900
Summerland, B.C.		19,800
Kelowna, B.C.		5,600
Vernon, B.C.		11,000
Salmon Arm, B.C.		2,500
Vancouver, B.C.		47,500
Victoria, B.C.		13,070

C. W. BAXTER,
Commissioner.

A VISIT TO THE EXPERIMENTAL STATION, FREDERICTON

A sort time ago we had the pleasure of a visit to the Experimental Farm at Fredericton. A ramble through the spacious stables found every animal therein sheltered in the pink of condition. Never have we seen the cows, heifers and calves on the Station farm look so well. There are some very promising young stock coming on. An interesting experiment is being conducted in the upgrading of a dairy herd by the use of pure bred sires with common scrub cows as the foundation. Several of the first cross heifers are now milking. Some of them are better producers than their dams, while in other cases they do not tally u pto the pace set by their dams. The foudnation has already been laid for a particularly nice herd of dairy Shorthorns. The milk flow furnished by thes egrand dams would make a very good cow of the recognized dairy breeds green with envy. Bulls from particularly heavy milkers are being used to head the herd and we look forward to see Supt. Hubbard realize his ambition to have a barn well filled with milking Shorthorns that are milkers indeed.

He has a strong right bower to help him attain this end in Mr. John Bennett, his herdsman, who was for many years in charge of the R. A. Snowball herd at Chatham. Mr. Bennett heard his Country's call and donned the King's uniform. On his return he accepted the position of herdsman at the Experimental Station. Under his experienced guidance as breeder and feeder the Station herd will have every chance to make good.

FROM THE DOMINION EXPERIMENTAL FARMS, 1918-19
DISTRIBUTION OF SEED GRAIN

By instructions of the Hon. Minister of Agriculture, a free distribution of superior sorts of grain will be made the coming winter and spring to Canadian farmers.

The samples for distrbution of spring wheat (about 5 lb.), white oats (about 4 lb.), barley (about 5 lb.) and field peas (about 5 lb.). These will be sent out, freefi by mail, from the Central Experimental farm, Ottawa, by the Dominio nCerealist, who will furnish the necessary application forms.

Only one sample can be sent to each applicant. As the supply of seed is limited, the ar eadvised to apply very early.

J. H. GRISDALE,
Director, Dominion Experimental Farms

Peace does not alter the food demands upon Canada and the United States, but in fact increases the load and the demand for economy.

Fruit Packages

We Manufacture Strawberry Boxes and Crates for same, 6 qt. Baskets, Apple Boxes, Box Shooks, Apple Graders, Wheelbarrows.. Now is the time to lay in a supply of Fruit Packages for the coming season. We have a good stock on hand, order early and ensure prompt shipment.. Price on application to

Hantsport Fruit Basket Co., Ltd.

HANTSPORT, N. S.

FIELD ROOT SEED SUPPLY FOR 1918

About the first of July, 1917, the Dominion Department of Agriculture was advised that Canada might face a shortage in the field root seed supply needed in 1919. In view of this the Dominion Experimental Farms system was requestd to take immediate action to raise, in 1918, considerable quantities of the said seed.

Accordingly, seed of best stock available of a number of varieties was immediately secured and placed with a number of Dominion Experimental Farms and Stations in Eastern Canad, Alberta and British Columbia.. A number of farmers were also found who were ready and willing to undertake the growing of seed on their farms.

We have just received from Dr. M. O. Malt, Dominion Agrostologist, Central Experimental Farm, Ottawa, a list giving the approximate quantities of seed available for sale of mangels, Swede Turnips and Carrots produced by the Dominion Experimental Farms system in 1918, and also a copy of conditions of sale of the same.

FIELD ROOT SEED FOR SALE

Mangels

Yellow intermediate from selected stock developed at Central Experimental Farm, Ottawa, seed grown at Central Experimental Farm, 9000 pounds

Grant Yellow Intermediate, from seed secured from Steele Briggs Seed Company, Toronto. Seed grown at Central Experimental Farm, Ottawa 5,000 pounds.

Seed grown at Dominion Experimental Station, Lethbridge, Alta., 1000 lbs.

Half Sugar White, from selected stock developed at Central Experimental Farm, Ottawa. Seed grown at Central Experimental Farm, 300 lbs.

Half Sugar White, from John A. Bruce & Co., Hamilton, Ont., (in their seed catalogue under the name of Bruce's Grant White Feeding Sugar.) Seed grown at Dominion Experimental Farm, Agassiz., B. C., 1000 lbs.

Seed grown at Dominion Experimental Station Summerland, B. C., 7,000 lbs.

Danish Sludstrup from selected stock produced from J. M. Steeves, Steveston, B. C. Seed grown at Agassiz, 500 pounds.

Danish Sludstrup, from selected stock developed at Dominion Experimental Station, Kentville, N. S. Seed grown at Dominion Experimental Station, Kentville, 500 pounds.

Swede Turnips

Purple Top Swede, from ordinary stock grown at Central Experimental Farm, 2,000 lbs.

Monarch, from selected stock secured from D. M. Ferry Company. Seed grown at Dominion Experimental Farm, Nappan, N. S., 7,000 lbs.

Canadian Gem, from stock secured from Wm. Rennie Seed Company. Seed grown at Kentville, N. S., 8,000 lbs.

Kentville Green Top, from selected stock developed and seed grown at the Experimental Station, Kentville, 1,800 lbs.

Sutton's Champion, from selected stock secured from D. M. Ferry Co. Seed grown at Experimental Station Fredericton, N. B., 800 lbs.

Carters Imperial, from stock secured from Dupup & Ferguson. Seed grown at the Dominion Experimental Station, Ste. Anne de la Pactiere, Que., 900 lbs.

Carrots

Danish Champion, from selected stock developed and seed grown at the Central Experimental Farm, 900 lbs.

White Intermediate, from Stock secured from Kenneth McDonald & Son. Seed grown at the Dominion Experimental Station, Summerland, 3,000 lbs.

White Belgian, from stock secured from Kenneth McDonald & Son. Seed grown at the Dominion Experimental Station, Sidney, B. C., 300 lbs.

Conditions of Sale

Mangel Seed in sacks, sewed, in net weights of ten pounds and twenty five pounds, equal total weight of each, i. e., five sacks of ten pounds supplied wit heach two sacks of twenty-five pounds—75 cents per pound.

Swede Turnip Seed in cotton sacks, sewed, in net weights of ten pounds each—$1.15 a pound.

Carrot Seed in cotton sacks, sewed, in net weights of five pounds each—$1.50 a pound.

,All sacks included in the prices quoted.

A commission of ten cents per pound will be allowed to Central Farmers Organizations ,the same to cover all expenses of reshipment and prepayment of freight from headquarters of Central Farmers' Organizations to Local Farmers' Organization of Farmers; the said ten cents per pound to be deducted from the prices afeorementioned. Railway freight charges to headquarters of Central Farmers' Organizations to be paid by the Central Experimental Farm, net payment by bank at sixty days from date of shipment.

A discount of 20% on the aforesaid prices will be allowed if the seed is supplied F.O.B. Ottawa, as follows:

Mangel Seed in 50 lb. jute sacks sacks; Swede Turnip Seed in 100 lb. cotton sacks; Carrot Seed in 50 lb. cotton sacks; sight draft to accompany bil lof lading. ,

Minimum orders accepted: Mangel seed, 100 lbs.; Swede Turnip Seed, 100 lbs.; aCrrot seed, 50 lbs.

Orders will be accepted provided the stock has not been sold at the time of receipt of order of the varieties specified. However, in case of extreme demand the right is reserved to fill orders pro rata, according to requirements as indicated by Government Seed survey. All shipments to be made by March first.

Dr. M. O. Malte, Dominion Agrostologist, Ottawa, will receive the orders.

A glance at the foregoing quantities of seed ofr sale will show that in the number of pounds of seed grown, the Experimental Station at Kentville, N. S., tops the list. Well done Superintendent Blair.

CONTROL OF WEED SEED IN THE CLOVER

While there are only a few kinds of weed seeds which are commonly found in red clover seed in quantities sufficient to cause it to be prohibited from sale under "The Seed Control Act," it is yet very nuecessary that the seed for sowing be as pure as possible. It is not easy to say how much damage to soil, and injury to live stock, may be caused by impurities in red clover seed. For this reason "Pamphlet S-2" prepared by the Dominion Seed Analyst, and just issued by the Seed Branch of the Department of Agriculture, Ottawa, is one that should command wide and general attention from farmers. "The Seed Control Act" prohibits the sale of red clover seed if it contains more than 80 seeds of noxious weeds or 400 of all kinds of weed seeds per ounce. The pamphlet referred to, which can be had free on application to the Publications Branch, Ottawa, tells of the maximum number of weed seeds per ounce that are permitted in the different crops of timothy, red clover, alfalfa, and alsike, and describes with exactitude, the steps that are necessary to purify the seed. Information is given of the relative prevalence of weed seeds; of the method of eradication of weeds, as regards testing, and instructions for taking and sending to the Branch to be tested. A series of exact illustrations of sieves necessary for their removal are given in the pamphlet.

Rennie's Seeds

Always Grow

and

Produce the Best

Sold Everywhere

Write to-day for Catalogue—Now Ready

THE WILLIAM **RENNIE** COMPANY LIMITED

KING & MARKET STREETS, TORONTO

ALSO AT MONTREAL WINNIPEG VANCOUVER

A Profitable Addition to Your Farm Implements

FEW things add more to a farmer's earning capacity than a good, efficient spraying machine—and the world's best outfit, proven in tests against all comers in our own Canadian made

Spramotor

It isn't a SPRAMOTOR unless we made it.

We ship Spramotors all over the world and make a machine for every purpose—hand outfits, barrel machines, knapsack, cart, horse-operated and power machines—prices ranging from $7.00 to $400. They do perfect work in all spraying tasks, field and orchard, painting, whitewashi g, disinfecting, cattle spraying, etc.

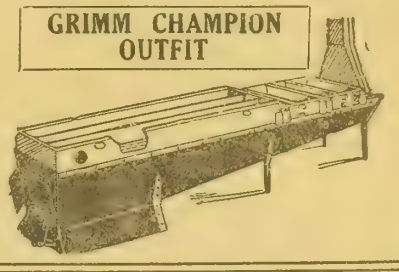
FREE—Valuable up-to-date treatise on spraying mailed free on request. Write for your copy to day.

THE LONDON SPRAMOTOR 6031 King Street East, London, Canada

FOR MAPLE SYRUP AND SUGAR

Every maker of Maple goods in Eastern Canada should be interested in this remarkable contest. Our last competition before the war showed us how to arrange the prize money so that more competitors will be sure of being in the winning class. This Spring will offer an unprecedented opportunity in the development of the Maple industry and this contest will help to classify and arrange the various grades and qualities of Syrups and Sugars produced in Canada. Why not equip your grove and enter this contest, For full particulars, write to

GRIMM CHAMPION OUTFIT



THE GRIMM MANUFACTURING CO.,
LIMITED
45 Wellington Street, Montreal, Que.

HIS FIRST EXPERIENCE WITH GROUND LIMESTONE

W. E. CcLaughlin, of Kings Co., speaking of his first experience with ground limestone, said at a recent farmers' meeting:

In the spring of 1915 I applied ground lime stone at the rate of two tons per acre to a field from which I had never been able to get a crop of hay. lime stone was applied early in the spring and was harrowed in with the grain and grass seed. I got a good catch of clover and have cut three bumper crops of hay in the summers of 1916, 1917, and 1918, without the expenditure of a single dollar in fertilizers of any kind. The ground lime stone cost me $2.10 per ton at the government lime stone pulverizing machine when working for farmers in the vicinity of Sussex.

A somewhat similar testimony was giben in our hearing a few days ago by Mr. Irvine R. Alward, of Havelock, Kings Co. Let us have your experience with ground lime stone or lime of any kind. We would also like to get sort notes in drainage experiences for these columns.

POULTRY.

DAIRY STATISTICS

Ottawa, January 3, 1919—The Dominion Bureau of Statistics has issued a preliminary bulletin giving the statistics of creameries and cheese factories for the year 1917 as collected by the Bureau in cooperation with the Provincial Governments and as compiled by the Bureau. A complete report on the subject is in preparation and will be published as Part II of the Report on the Census of Industry.

Number of Factories and Patrons

The report shows that the total number of creameries and cheese factories making returns in Canada in 1917 was 3,418, as compared with 3,446 in 1916 and 3,513 in 1915. Of the total in 1917, 949 are creameries, 1,900 are cheese factories, 549 are combined factories making butter and cheese and 20 are condensed milk factories. The great majority both of creameries and cheese factories are in Quebec and Ontario. In Quebec there are 598 cerameries, 895 cheese factories, 482 combined factories and 1 condensed milk factory. In Ontario creameries number 154, cheese factories 923, combined factories 45 and condensed milk factories 13. In both of these provnices the number of cheees factories has increased, and the number of creameries has decreased, as compared with 1916. The total number of patrons (i. e. farmers supplying milk and cream) is 250,505 in 1917 as compared with 221,192 in 1916 and 212,927 in 1915. In 1917, the patrons numbered 81,784 in Quebec and 96,255 in Ontario.

Production and Value of Creamery Butter

The total production of creamery butter in 1917 was 87,404,366 lbs. value $34,277,188, as compared with 82,564,130 lbs. value $26,966,355 in 1916 and 83,991,453 lbs. value $24,385,052 in 1915. Quebec and Ontario together produce 72 p. c. of the total creamery butter in Canada. The production of Quebec in 1917 was 34,392,560 lbs., value $13,689,310, as compared with 34,323,275 lbs., value $11,516,148 in 1916 and 36,621,491 lbs., value $10,899,810 in 1915. Ontario in 1917 produced 28,714,352 lbs., value $11,219,029 as compared with 24,680,109 lbs., value $8,031,997 in 1916 and 26,414,120 lbs., value $7,534,653 in 1915. For all Canada the average wholesale price of creamery butter works out to 39 cents per lb., as compared with 33 cents in 1916 and 30 cents in 1915. By provinces, the price for 1917 is highest in British Columbia 46 cents, the prices in the remaining provinces ranging as follows: New Brunswick and Nova Scotia, 41 cents; Prince Edward Island 40 cents; Quebec 40 cents; Ontario 39 cents; Manitoba and Saskatchewan 37 cents and Alberta 38 cents.

Production and Value of Factory Cheese

The total production of factory cheese in 1917 was 19,904,336 lbs., value $41,170,563, as compared with 192,968,597 lbs., value $35,512,622 in 1916 and 193,887,837 lbs., value $27,097,176 in 1915. Ontario and Quebec together produce 97 p. c. of the total factory-made cheese in Canada. In Ontario the quantity produced in 1917 was 121,173,086 lbs., value $25,771,944, as compared with 126,015,570 lbs., value $23,312,935 in 1916 and 125,001,136 lbs., value $18,831,413 in 1915. The average wholesale price of factory-made

MORE MILK & BUTTER
HAS NO EQUAL AS A MILK AND BUTTER PRODUCER
Milch cows need food rich in nitrogen for two reasons, to rebuild the ordinary waste of tissue and to secure the protein necessary for the milk. This is why nothnig can equal "Maple Leaf" Oil Cake as a Producer of butter and milk. It increases the flow of milk and adds to the richness of the cream. Made by the old process and guaranteed absolutely pure. Contains over 35% Protein and 33% Carbo Hydrates. This splendid food is so rich in protein that British Farmers send four thousand miles to secure it.
Write to-day for samples and our free booklet "Facts to Feed."
THE CANADA LINSEED OIL MILLS LIMITED
MAPLE LEAF
(OLD PROCESS)
PURE LINSEED
OIL CAKE MEAL
TORONTO—MONTREAL
CANADA LINSEED OIL MILLS, LIMITED
TORONTO—MONTREAL

FERTILIZERS FOR 1919

We Supply Fertilizers for Every Crop and for Every Soil

Making two blades grow where only one grew before. By using Shur-Gain Fertilizers, you can increase your yields without additional land, labor, or seed.

For information and prices

Gunns LIMITED ST. JOHN, N.B.

We would suggest the importance of an early order—it will give you the benefit of present prices and insure delivery.

Potato growers have denomstrated that commercial fertilizers scientifically used will yield a splendid profit.

We have just the grade that you require for your soil and can give you much valuable information.

We specialize on potato fertilizers and can fill your wants at prices that are worth investigating.

GUNNS LIMITED, 676 Main St., St. John, N. B.

WIFE'S COLD

Husband's Bronchitis

CURED BY

DR. WOOD'S

NORWAY PINE SYRUP.

Mrs. James Mack, Trenton, Ont., writes:—"I suffered for several months with a bad cold. Some friends told me about Dr. Wood's Norway Pine Syrup, and of the benefit it was to them. Before I had used two bottles I could get some rest, which I could not do before. I had tried everything, but "Dr. Wood's" was the only thing that gave me any relief.

My husband suffered terribly from bronchitis, and did not know whether he was going to recover or not. At my druggist's, Mr. J. H. Dickey, I was advised to try your syrup, which I did, and am so thankful that I cannot recommend it highly enough."

Many people on the first sign of the slight cold or cough neglect it, thinking, perhaps, it will disappear in a day or two, but the longer it is let run the worse it gets until it settles on the lungs and serious results ensue.

On the first sign of a cough or cold, get rid of it before it gets settled. Take a few doses of Dr. Wood's Norway Pine Syrup and see how quickly it will disappear.

This sterling remedy has been on the market for the past 30 years, and stands head and shoulders over all other cough remedies.

Put up in a yellow wrapper; three pine trees the trade mark; price 25c. and 50c. Manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

cheese for Canada was for 1917 21 cents per lb., as compared with 18 cents in 1916, and 15 cents in 1915. For 1917 the highest price per lb. was in British Columbia 30 cents, and in the other provinces the average price was close to 20 or 21 cents per lb.

Other Data

The total value of the capital invested in the creameries and cheese factories of aCnada in 1917 was $19,628,000. The number of employees was 10,346 and their salaries and wages amounted to $5,446,446. The amount paid to patrons was $73,873,245 and the total expenditure, including fuel, $834,036, materials $3,844,698 and miscellaneous expenses $2,498,334, was $86,496,769. In addition to the value of the production of butter and cheese, other products were manufactured to the value of $18,424,485; so that the total value of the products of dairy factories in 1917 amounted to $93,822,236.

WINTER FEEDING OF DAIRY COWS

(Experimental Farms Note)

Cows are fed in the stable during one half of the year or more and feeding during this period may, through ignorance or on account of using unsuitable feeds, be made very expensive. The profits from the herd will of course, depend to a large extene on the economy of the methods of winter feeding followed.

Economical feeding does not mean svant supplies, but the using of the kinds of feeds and feed combinations that will be likely to produce the best results at th elowest cost.

As the milk produced depends upon the quantity and quality of the feed consumed, every effort should be made to supply the cow with all she will eat of a ration combining palatability, easy digestibility, variety and nutrition.

The most economilcal ration must have as a basis, cheap but rich nutritious, farm-grown roughages such as clover hay, ensilage and roots. The liberal feeding of meals is advisable to balance the roughage ration and to provide the heavy milking cow with an extra supply of nutrients in a less bulky form.

A pound of grain when the cow is fresh is equivalent to several pounds of grain after the cow has decreased materially in her milk flow. Feed one pound of meal for every 3½ pounds of milk produced; as her lactation periol progresses, decrease the meal gradually to one pound for every five pounds of milk produced.

The following are two well-balanced daily rations for the 1,000 pound dairy cow suitable to the individual needs of farmers throughout the district.—

No. 1.—Mixed hay 16 pounds, turnips or mangels 40 pounds, meal mixture composed of bran 6 parts, ground barley 2 parts, oil cake 1 part and cotton seed meal 1 part. This meal fed at the rate of 1 pound per 3½ pounds of milk produced.

No. 2.—Mixed clover hay 12 pounds corn ensilage 30 pounds, meal mixture composed of bran 5 parts, cotton seed 2 parts, oil cake 1 part, fed at the rate of 1 pound for every 3 or 3½ pounds of milk produced.

All cows are not of the same temperament. On this account a study should be made of the requirements of the individual animal. In the best-bred herds, cows vary in itheir productive ability, therefore to obtain the greatest profit, records should be kept of both milk and feed, and tests made occasionally to ascertain if it would pay to increase or decrease the grain.

Cows in order to make a mixmum production at a minimum cost, should be housed under the most favorable conditions, that is, in regard to cleanliness, good ventilation, plenty of light, with necessary bedding and occasional grooming.

A cow should have all the good quality roughage she wants, with a well balanced grain ration regulated by her production, also plenty of fresh water and from one t othree ounces of salt added to her feed daily.

15 cents
VOL-PEEK
MENDS POTS & PANS
Mends Graniteware, Tin, Iron, Aluminum, etc. in two minutes. Without tools. 30 mends for 15c. From your dealer or us, postpaid
Vol-Peek Co., P.O.Box 2024, Montreal

THE AYRSHIRE COW

Sir:—

When reading this week's Scottish Faremr the thought occurred to me—While Friesians and Dairy Shorthorns are booming what are the Ayrshire Breeders doing? Is there any breed of dairy animals that for a given quantity of food can produce an equal quantity of milk? It may be that some breeds give more milk per head, but what of the annual cost in foodstuffs, and what of the quality of the product? It seems to me to be a matter of the first national importance to produce the best possible rather than a large quantity of poor milk. Of course as the law now is, it pays better to produce the greater quantity, hence the producer can pay more for his machine, i. e., the cow.

I understand there is a movement on foot to let the public know the qualities of the Ayrshire cow, and it is to be hoped that those breeders who in the past have received strong financial support will now come to the front and advertise cattle by facts which, I am confident, will compare favorably with if they do not surpass, other breeds. It is within the knowledge of many readers of the Scottish Farmer how the Ayrshire cow when combined with thrift and good management has made an independence for many. a living for some, and it was not the cow's fault if failure overtook any. The Ayrshire cow has also been a large contributor towards keeping the land in the south-west of Scotland up to its present state of fitness which has been of some assistance at this time, and should be remembered in the future I hope, with the Editor's permission, that this may inaugurate a series of letters on this subject, and bear useful fruit in bringing before that portion of our public who do not know that we do not need to go from our own door to get the most economic food produce in the animal world,

Yours,
AYRSHIRE BREEDER.

The above article taken from the "Scottish Farmer" of a recent issue, shows that the Ayrshire breeders in Scotland are not pushing their business as are the Friesian and Dairy Shorthorn men. There are several truisms in this letter as here again, we find the modesty of the Ayrshire Breeders displayed. For some reason or other they have not "boosted" their breed to the same extent as some of "Scottish aFrmer" of a recent issue, thinks they leave it too much to the Ayrshire cow to demonstrate her ability to produce largely and economically.

Ayrshire men, get busy and boost "Our Favorites.

W. F. S.

TOO LATE
Now is the time when you need a silo most. If you had installed a silo last season, right now your cows would be giving 25% more milk at a good deal lower feeding cost.
But it's too late now to worry about that. The best thing to do is to make sure now that you will not be without a silo next winter.
IT'S NOT TOO EARLY TO PLAN FOR YOUR NEW SILO
Send for our silo book. Tells all about silos, silage and silage feeding
THE DE LAVAL COMPANY, Ltd.
LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA. Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butterworkers. Catalogues of any of our lines mailed upon request.
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We are now booking orders for Spring Delivery.

Order early to avoid disappointment later, as the capacity of our Mill is limited.

Writ for Booklet.

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LIME MANUFACTURERS. ST. JOHN, N. B.

Try a carload of our Builders LUMP LIME, over 98½% Pure.

LIVE STOCK.

FERTILIZERS IN CAR LOTS

The New Brunswick Agricultural Societies United offer unmixed fertilizers in car lots. The prices are the most reasonable on the market to-day. Write the secretary at Sussex, N. B.

FEEDS ARE SCARCE

Mill feeds are scarce. On account of the railway embargo, under which the forwarding of goods to tidewater for export, is prohibited, the flour mills of Canada have either closed down entirely or are operating only part time. The result is that bran and shorts are entirely off the list at the majority of mills, while others are only offering a few tons of bran and shorts, to the car. This condition will continue until Great Britain raises the ban against imports to that country, which at present has more food than she can care for. Then the millers are arranging to return to the manufacture of white flour. If this be done, it is claimed that either flour or feeds must go up. When the change was made in the United States, it was feed which soared and to-day it is selling ten dollars over the Canadian market. If mills are allowed to export their bye-products to the United States, prices will go up. At present there is a fair supply of feeds on this market, but the outlook is for scarcity and for much higher prices. Special feeds are being pushed by all mills.

The Maritime Farmer at the time of going to press offers number one feed oats at 95 cents per bushel delivered points in New Brunswick, and as far East as Halifax on main line of National Railways. Number twos are quoted 92 cents delivered. The oats are bagged and prices are subject to confirmation. Get your agricultural society to get the co-operative habit. Buy together in car lots.

THE PERIOD OF OESTRUM DURING WHICH TO BREED SOWS

(Experimenta Farms Note)

The period of oestrum or heat, in the sow appears in the neighborhood of twenty-one days, with the normal animal in good breeding condition. The sow remains in heat from one to five days. The effect of delaying the boar's services until the period of heat is almost over, has long been a subject for discussion with the hog-man. Such practice, it is claimed, invariably results in larger litters than would be the case were the sow bred during the first day. As a physiological explanation of the foregoing, it is claimed that during the latter part of the period a much larger number of ova are presented for fertilization by the male element, with the resultant increase in the size of the embryo litter.

With horses and cattle, the generally accepted practice, particularly with the former class of stock, is to delay breeding until the period is well advanced. Likelihood of conception would thereby seem to be increased, due, no doubt to the fact, that the female functions have had time to take place properly, that the female is usually more receptive to male attention and allowing a reasonable length of time to elapse after the usual advertisement of oestrum.

With the sow the same probability of conception by delayed breeding is heightened, for the foregoing reason. That a larger litter should be expected, is by no means so sure, the claims of many expert breeders to the contrary. The size, vigor, and numbers of the litter may be far more certainly controlled by the condition of the boar and sow at the time of breeding. Such, at least, would be indicated by the results noted from the large herd of brood sows kept at the Experimental Farm at Ottawa. Here, the general practice is to breed on the second day, using, where necessary, the breeding crate. During the winter of 1917-18, however, several groups of sows were bred, by allowing a boar tao run with each lot. Besides obviating much labor in hand-breeding reluctant individuals and reducing to a minimum the number of "missed sows"—the size and vigour of the resultant litters left little to be desired.

In brief, to the man who keeps only a few sows, and who makes use of a neighbournig boar, breed on the second day, deepnding, of course, on the sow's individual peculiarities. See that she is in rising condition—not fat not thin, but in fair flesh and gaining every day. If the sows have been on fall grass, use a little grain before breeding. If the sows have been irregular in heat, this will tend to bring them in for breeding regularly and within a few days of one another. Use judgment in breeding the weaned sow. If she is much run down from nursing her litter and bred in this condition a few days after weaning, a disappointing second litter will in most cases result.

If no boar is kept, try to select the services of one, not too heavily used, reasonably well fed and above all, well-exercised. The thin boar, or the over-fat individual, frequently are both getter of small litters, no matter when they serve the sow.

To the man who allows his boar to run with the sows, good results may be expected, even if the boar does not show much scientific knowldge, provided th herd is well-exercised, housed in dry quarters and sufficiently well fed to ensure gain in weight and provided further that the sow is removed, temporarily, from the group as soon as properly served. Emphasis, too, must not be neglected with reference to the desirable effect on breeding stock of green feed in summer, and succulent foods,—roots, clover, hay or ensilage in winter.

THE CARE OF THE FALL LITTER

(Experimental Farms Note.)

The measure of the swine feeder's ability may well be taken by his success in handling his late summer and fall litters. Here the percentage of culls and unthrifty pigs is usually high, particularly with the late fall litter obliged to winter in cold or worse damp quarters. Generally speaking, no young pigs should arrive after September, unless the feeder has exceptional facilities for winter swine raising.

To ensure strong fall litters the sows should spend the summer on pasture with as much range as possible. Clover, alfalfa, rape or grass may be utilized to the exclusion of meal for the first two months, provided the pasture is abundant. For the duration of the gestation or carrying period, the use of a little meal, once daily, will be amply repaid. Shorts and bran, equal parts, with a handful of oats per sow, fed a few pounds daily, is recommended.

One very fertile cause of unsatisfactory fall litters, is found where the sow has produced a litter in the spring, been heavily milked, and bred in a thin weakened state, and at the same time properly nourish the litter she is carrying. Ordinarily, breed the sow a few days after weaning. If she is much pulled down in flesh delay breeding even at the expense of a later fall litter.

When the sow farrows, if in August, September, or later, observe the following facts.—

1—See that the youngsters have exercise and plenty of it, right up to snowfall.

2—They must have a warm, dry place to sleep. One thorough chilling, such as may be contracted on a wet, cold fall evening, where improper shelter and little bedding are supplied, will ruin the sucker or weaner, for good and all. Given a dry floor, well bedded, the fall has no terrors for the little pig.

3—Start the pigs to eat when two or three weeks of age. If two or three sows farrow at nearly the same time and if they are acquainted, place them together with their litters. Make a hole in the fence and give the little ones the run of the barnyard or adjoining field or paddock. Provide a small self-feeder where the sows cannot reach it, and keep a mixture of shorts, 2 parts; ground corn, 1 part; ground oats, 2 parts;—before the little pigs at all times. Skim-milk in a trough, similarily situated, will also prove popular and highly beneficial.

4—Mangels or sugar beets fed tops and all will be relished by the sows, as well as a few cobs of corn daily. A meal slop containing if possible, milk in some form with a mixture of shorts, ground corn and ground oats should be fed twice daily. Feed for milk.

Winter Care of the Fall Pig

The winter quarters for the three or four months pigs must be dry above all things. A low sleeping berth built in an open shed covered over with straw and kept well bedded, with dry straw, provides comparative warmth, dryness and fresh air. Access during the day time to a shed in which they may root in straw or litter after a few handsful of oats or whole corn, is highly to be recommended. Either the self-feeder, or burough may be used to advantage. Ashes, sods, earth, etc., should be constantly accessible.

If any one feature should receive emphasis over all other in connection with the rearing of fall pigs, it is that of dry quarters.

FRANCE WANTS TO BUY

France at the end of the war finds herself with 2,360,000 less cattle, 2,258,000 less sheep, and 2,815,000 less pigs than in 1914. She will be glad to buy pork and hog products in Canada as soon as financial arrangements as to credit in Canada can be arranged. Canadian breeding cattle also are wanted. Canada is the only country upon whose cattle France does not maintain an embargo.

DENMARK'S BACON TRADE

Before the war Denmark used to send Great Britain 2,300,000 hundred weight of bacon per year. Today Denmark is herself short of 1,873,000 pigs. And her great hungry neighbor, Germany, is short 19,306,000 pigs. Britain will have to look elsewhere for the bacon Denmark used to supply, and here is where Canada will find a permanent trade opportunity with the mother country of no mean proportions.

How It Works Out Actual Practica Experience

In November, 1917, a customer bought

10 shares C.P.R.

In February, 1918, he increased his account by the purchase of an additional

5 shares C.P.R.

Since that time he has been paying against these purchases

$87.25 EVERY MONTH

During the period and including December, 1918, the Interest charges on his unpaid balance have totalled

$93.00

but this has been so far offset by the dividends which have been paid on the shares and credited to his account to a total of

$175.00

so that he has on interest account alone made a profit of

$82.00

It will take him seven months more to complete payment in full when the result of his

Systematic Investment

will be that he will own a certificate for

15 SHARES C.P.R.

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$37.50 EVERY THREE MONTHS

Does this suggest anything to you?
Are you not a little anxious to study this plan?
Why can't you put one into operation for yourself?
Write or wire at our expense for folder M, study it, and apply this systematic saving to yourself, for yourself. It will PAY YOU IN DIVIDENDS.
Our one stipulation is that you select good securities; remember, you are investing, not SPECULATING.

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Size, quick growth, rapid fattening on pasture or in stable, high dressing percentage, prepotency, hardiness, docility, popularity, superior milking qualities, are characteristic of

SHORTHORNS

THE BREED FOR FARM OR RANCH

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WAS WEAK

ALL RUN DOWN

FROM HEART and NERVES.

Mrs. Percy G. McLaughlin, Lawrence Station, N.B., writes:—"I am writing to tell you that I have used Milburn's Heart and Nerve Pills, and find since I commenced to use them that I feel altogether a different woman. I was weak and run down from my heart and nerves, and was recommended to try your pills by Mr. James H. Scott who has taken them, and says if it were not for them he could not live. When I finish the box I am now taking I will be completely cured. I wish to thank you for putting up such a wonderful medicine, and I will gladly recommend it to one and all."

To all those who suffer in any way from their heart or nerves, Milburn's Heart and Nerve Pills will come as a great boon. They strengthen and stimulate the weak heart to pump pure, rich, red blood to all parts of the body, strengthen the shattered nerves, and bring a feeling of contentment over the whole body.

Price 50c. a box at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

LIVE STOCK MEETING

Important Conference Held in Ottawa to prepare for Big Business.

Leading Live Stock Producers, including the members of the Canadian Live Stock Council and representatives of the Meat Packing industry of the Dominion, in conference at Ottawa as to the best means of meeting the situation presented by the enormous live stock shortage in Europe, drew up a memorandum to the Government in the form of five resolutions which include the following points:

That a policy of rural credit be sanctioned and supported by the Federal Government.

That tseps be taken to establish credits in this country with France, Belgium and Italy.

That a Government agent, preferably Mr. H. B. Thomson, Chairman of the Canada Food Board, in the continuation of his present capacity, be sent to Europe to secure fullest possible recognition of Canadian interests in supplying agricultural products.

That the Government provide necessary marketing facilities, including adequate controlled temperature space in railway cars, storage warehouses, and ocean going vessels.

That the Government give encouragement to a campaign throughout Canada for increased live stock production, in view of the enormous opportunities now presented to the Canadian live stock industry.

In his reply, Sir Thomas White, Acting Prime Minister, said many of these points were being provided for and whatever further possible would be done.

WATER FOR HOGS

William E. Purdue.

In order to make satisfactory gains hogs must have an abundance of pure drinking water at all times in addition to slops. The latter will never take the place of water. A number of water tanks or troughs should be placed in the hog lots. In warm weather water must be given four or five times a day, and therefore much labor can be saved if a tank or trough is arranged for water to run from the stock tank. The animals can then help themselves to a drink at will, and on warm days one or more will be at the trough nearly all the time. It has been claimed by a few authorities that the practice of keeping a supply of drinking water always available to growing pigs will add 20 to 30 pounds to each one's growth during the summer and fall.

From the standpoint of economy and general satisfaction the most practical hog trough is a metal concrete. Although the firts cost of wooden troughs is less than those of metal concrete, when it is remembered that the steel troughs last a lifetime with ordinary usage it will be seen that they are cheaper in the end. Especially in dry weather are the concrete metal troughs more satisfactory than the wooden ones. No wooden trough, no matter how well it may be constructed, can be used long until it will begin to leak in dry weather unless water is constantly running into it. Another advantage of the metal troughs is that they are easily kept in a sanitary condition. In purchasing metal troughs it is well to get different sizes and lengths. For five to ten hogs the two-foot trough with a bar across the top is the most convenient, being a very handy thing to carry from one place to another if necessary. A trough of this size is also generally used in the individual pens of the brood sows. For a bunch of shoats longer troughs are more convenient.

If wooden troughs are employed they should be constructed of well-seasoned boards. Inch boards, or even lighter, will do very well for small troughs. But the troughs from which heavy pigs are fed should preferably be made of one and one-half inch stuff. For the purpose of avoiding any waste of feed, and to give all the animals an equal chance to secure their share, there are a number of devices that any farmer with a hammer and saw, and some loose pieces of boards, can arrange on the troughs so that the greedy animals cannot get their feet into the slop or water. Cross bars extending across the top of the trough, limiting the feeding operations of each animal to one section, between the bars, is a very common way of fixing troughs to keep the animals' feet out of their food and drink. If an enclosed feeding floor is used, the troughs may be placed along both sides of the floor. This will give sufficient trough room for all the pigs at one time without crowding.

HOW TO FFED YOUNG PIGS

Feed, sunshine and exercise are the three essentials mentioned by L. A. Weaver, of the University of Missouri College of Agriculture, for success with young pigs. The fastest and cheapest gains are made on a pig before weaning time so that ordinarily it will pay to keep the small pig growing as rapidly as possible. The sow should, of course, get some good milk-producing feed, and she should be fed full capacity as soon as the pigs are old enough to take al lthe milk she will give. It will not pay to limit the feed at this time since the pigs make the most economical gains from feed fed through the sow. When the pigs are about a month old, they will be able to use more feed than that obtained from the sow, even though the sow is properly fed and a good milker.

As soon as the pigs will eat, which is usually at four or five weeks of age, they should be fed separately from their dam. A creep should be made so that they may have access to a small pen where the sow cannot get their feed. Skim milk fed in a shallow pan is very good for them. The pigs may also be taught to run into the creep for feed by allowing them some suitable grain. As soon as they begin to eat well, a slop made of milk, some shorts, a little bran and some linseed oil meal or tankage fed along with the grain, will make a ration which with proper exercise will not cause thumps or scours.

Perhaps the most common troubles caused by improper feeding and care of young pigs are scours and thumps. Scours are usually caused by changing the feed of the sow, by over-feeding, by dirty pens and troughs, or by exposure of either the sow or pigs to cold rain or to cold weather.

Changing from sweet to sour milk, or feeding too much high protein feeds, such as tankage or linseed oil meal when the animals are not accustomed to it, may cause the trouble. If the sow is fed too much her milk flow will be greatly stimulated, and the young pigs will receive more than they can utilize thus causing scours.

The first treatment in the case of scours is to cut down the sows feed and clean her quarters. A tablespoon of sulphur in her feed for two days will also be beneficial. Scalded milk or a good physic, such as Epsom salts, is helpful. A teaspoon of castor oil or Epsom salts should be given to the pigs. Charcoal is sometimes used. White scours, which is contagious, may be treated by cleaning and disinfecting the pens and by giving a good physic.

Lack of sunshine and exercise, together with excess feeding, cause thumps. A remedy is to cut down the mother's feed and force the pigs to take exercise in the sunshine. Thumps in large pigs which have been weaned is usually caused by some affection of the lungs or of the bronchial tubes.

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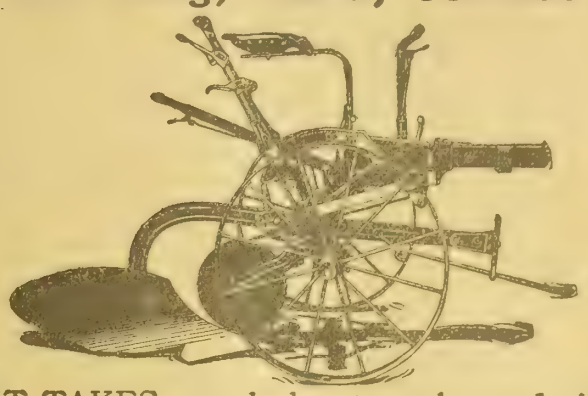

IT TAKES a real plow to make good with the plowing experts of Eastern Canada. Therefore, we take pride in the fact that the **Hamilton** No. 126 sulky meets with their approval.

It is adjustable to all conditions. It is easy to operate. It is built to do first-class plowing for many years. Note the handy pole shift. With it you can instantly change the landing of the beam, straighten crooked furrows, adapt the plow to side-hill plowing and to the turning of short corners.

The **Hamilton** 126 is a two-wheel sulky with a horse lift—a simple type that is remarkably easy to operate. The horses do practically all the work, yet the draft of the plow is so light that they do a full day's work with it.

The **Hamilton** line also includes tractor plows, walking gangs, two-way plows, and a choice assortment of walking plows. All are made with the thoroughness you will find in the 126 sulky. Note the new spring beams and long handles of the walking plows. Write us for **Hamilton** plow folders.

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WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

FINISH YOUR CATTLE

While there has been a numerical increase in live stock in Canada and the United States, owing to advanced cost of feed and the eagerness to realize on the high market prices, there has been a tendency found in all the live stock markets for farmers to ship cattle and hogs before they are properly finished. Loss of weight approximates 10 per cent. Far-sighted live stock men make every effort to finish thir cattle before marketing.

BEST FIVE YEARS IN POULTRY HISTORY JUST AHEAD

Now is the beginning of the best five-year period for profitable egg-production ever known.

We believe it will be the best five years that will ever be known.

All Europe has very little poultry. Some parts none at all.

All Europe will become a bidder in American markets for poultry and eggs.

American breeders must furnish the breeding stock for the renewal of the European flocks.

It will take at least five years before Europe can be selfsustaining in poultry products.

These facts make for continued high prices of poultry and poultry products, even after prices of grains have declined.

This means that farmers will be able to realize for the next five years more for the grains fed to hens for egg production than will be possible by any other process of marketing. We feel confident that by following proper practices in poultry keeping at all seasons of the year that double the market value of grains may be realized by the feeding of it to hens for egg production.

Begin now—this season—to make your poultry work count. Give it a definite place in the daily work, keep accounts and compare returns for effort expended with other farm operations. If this is done results will be more evident and you will appreciate your poultry as revenue producers.

Practice right selection in breeding.

Provide proper housing conditions.

Feed liberally rich foods to obtain high egg yield.

Hatch early. Early hatched pullets lay fall and winter eggs.

Practice good sanitation.

Keep hens free from lice and roosts free of mites.

Take good care of eggs, gather daily, market often.

The hen lays a perfect egg. See to it that a perfect egg goes to market. Good eggs bring top prices.

The Way to Tell a Good HARNESS

Every manufactured product that is worth it, is marked by the maker with his *trade-mark*. Harness is no exception. To be certain you get BIG VALUE and get a set you can DEPEND UPON, get the famous TREES HARNESS, sold all over Canada as IMPERIAL BRAND, and trade-marked with the Horse's Head in the Horseshoe. Watch for this trade-mark in buying and always ASK YOUR DEALER for IMPERIAL BRAND HARNESS. We prefer to have you buy it from your dealer but, if he hasn't it, write direct to us. Prices range as low as $22 a set, single, complete, and $39 a set for team, without collars. Harness cheaper than this is not safe to buy. Our cheapest harness is SOLID VALUE and, in its class, is by far the best for the price. Our Buggy Special at $28 is one we strongly recommend for strength, good looks and long service. We have a stock of everything in the harness line and can supply you promptly. It only costs 3 cents to write us and find out all you want to know.

SAMUEL TREES & CO. Limited
56 Wellington St., East.
TORONTO

THE HORSE

WILD HORSES OF THE PLAINS

El Comancho

When the Spaniards came to America they brought the first horses to the continent. The animals escaped and were left behind by the Spaniards to become the parent stock of future herds of wild horses that ranged the Plains from Mexico to as far north as Saskatchewan and possibly further.

Horses from early American settlers escaped from time to time or were run off by the wild horse bands and added to the blood. Indian tribes caught them in numbers and re-domesticated them, using them as a means of transportation which they had never known before the advent of the Spaniards. Indeed, it was the possession of horses that made the Plains Indian tribes possible, and later made roaming warriors of them, for they never traveled far before they had horses.

Some tribes became horse breeders and turned out fine stock; the Comanches of Texas were almost like Arabs in this matter, and the Cheyenne tribe of Wyoming gained fame as producers of the famous "pinto" or "painted" (spotted) horses of the Plains.

Bands of wild horses could be found almost anywhere where feed and water conditions were favorable, as late as the eighties. Two such bands ranged in the sand hills of Nebraska between the Platte and Niobrara rivers, the habitat of one band being around the head of Dismal River and the range of theother band being along the Loup River.

Wild horse herds were always led (and strictly herded into individual bands) by individual stallions who looked after their charges with almost human intelligence, leading them to feed and water and guarding them from danger of every sort. These stallions would fight each other and any wild enemy such as the grizzly bear, with all the wild ferocity of a tiger. They would even attack man if he was afoot and alone, as many an Indian or white horse-hunter can testify.

The two stallion leaders of these Nebraska sand-hill herds were well known up and down the Plains for a number of years and every device and plan was tried to "get" them. One was a coal-black trotter with long sweeping mane and tail—as beautiful an animal as ever ran free under the sky. The other was a bay pacer with cream mane and tail that swept the ground and gave him a comet-like appearance while running full speed. Two finer horses never lived, I verily believe. They were much sought by horse hunters for several years and were finally captured.

Indians tried to "walk them down" by keeping them moving slowly all the time, without a chance to feed or get to water, but they could never get either one. Cow-men tried encircling the herds and "roping" them many times. This method resulted in the capture of the bay stallion on the head of the Middle Loup in 1835 (I think it was) by a gang of men from Stems Ranch and other ranches of the region.

The black stallion was "creased" by a rifle shot through the top of the neck by a single hunter who thus captured the big fellow a years or so after the bay was caught. The black was captured miles to the northwest of his old range in the sagebrush desert of Wyoming after nearly all his band had been captured by cowboys on regular organized horse hunts that often resulted in the capture of a whole herd at once.

The horse was the unit of value in trade among all the Plains Indians; the man who owned "many horses" was rich—he who owned noen was poor. A wife was valued by a certain number of horses, the more desirable she would bring to her father when marriage day comes around. Next to the buffalo, the horse was the most valuable of all Plains animals to the Indian tribes.

Indians had always used dogs for pack animals up to the time they got horses from the increase of the Spanish herds, so it is only naatural perhaps to find the Sioux calling the horse Shunks-tonka, literally "big-dog," because they could pack all their stuff on his back just as they always had packed it for transportation on dogs before.

The Blackfeet took a somewhat different view of the animal and called it Pon-kom-i-ta, which means elk-dog or more nearly like-elk-like-dog." Undoubtedly this name was selected because, in size, the horse was "like-the-elk" but without his big horns and, because they could pack their belongings on the horse, he was "like-the-dog" who had almays been their pack animal before. Therefore the name "elk-dog" as above.

The Crow Indians who lived in the Yellowstone River country called the horse –cheta. Just what this name means I have never learned but it is likely somewhat similar to the others.

The last wild horse herds that I know of were ranging in Washington and Oregon, but these were rounded up and captured several years ago and as far as I know the real wild horse of the Plains is gone forever now, the nearest approach today bein ranch horses which still run the open range here and there.

Federal Assistance to Horse Industry

A practical policy that could be adopted in many sections of the province, to the mutual advantage of both the owners of stallions and mares

The Livestock Branch of the Federal Department of Agriculture, Ottawa, offers assistance to the farmers of any district, with certain restrictions and under certain conditions.

The farmers of the district that wish to secure the service of a sound, absolutely good, pure-bred stallion, at a nominal service fee, must organize themselves into what is known as a Breeders' Club.

Obligations of the Club

1. The Club shall guarantee the stallion owner a definite number of mares at a certain service fee per mare, said mares to be in good breeding condition, and not afffcted with any contagious or infectious disease.

2. All stallions named by Clubs for the purpose of securing Government assistance must be submitted to an examination by an authorized veterinary surgeon.

3. The Secretary of the Club shall forward to the Livestock Branch, with the regular application, a list of its members, also a copy of the memorandum of agreement signed by both parties interested. This agreement shall not become binding until approved by the Livestock Commissioner.

4. The minimum service fee shall be not less than Twelve Dollars.

5. All service fees shall be collected by the Club.

6. Payment of service fees shall be made as follows: one-third of the service fee for each guaranteed mare shall be paid by the Club to the stallion owner at the end of the service season.

7. The remaining two-thirds of each service fee shall be paid when the mare proves to be in foal. That is to say, the remaining two-thirds shall be paid for only such mares as prove to be in foal.

8. At the end of the service season the stallion owner shall furnish the Livestock Branch with a sworn statement setting forth the number of mares bred to his horse and the name of the owner of each.

Government Assistance

1. The Livestock Branch shall pay the Club an amount equal to 40 per cent of the total amount paid at the close of the service season; that is, 40 per cent on the full number of guaranteed mares.

2. The Livestock Branch shall pay the Club a second grant, equal to 40 per cent of the amount paid to the stallion owner, on the total number of mares that prove to be in foal; that is, 40 per cent of two-thirds the service fee paid for each mare that proves to be in foal.

Suppose a Club could guarantee 100 mares and that the service fee was $12.00. According to the rules laid down, the Secretary of the Club would pay the stallion owner, at the end of the service season, one-third of the total fee; i. e., $4.00 on each mare guaranteed by the Club or a total of $400.00. The Livestock Branch will reimburse the Club to the extent of 40 per cent of this $400, or $160.00.

Further, the Club is supposed, after the mares are in foal, to pay the stallion owner the remaining two-thirds of the service fee on all mares in foal. Suppose 75 mares prove in foal; two-thirds of $12.00 service fee is $8.00; that is, $8.00 on each of the 75 mares, or a total of $600.00. Of this amount, the Livestock Branch offers to pay a further 40 per cent or $240.00.

These two grants of $160.00 and $240.00 equals one-third of the service fee of $12.00 on all mares guaranteed by the Club.

The Provincial Minister of Agriculture, the Hon. J. F. Tweeddale, is very anxious that New Brunswick farmers take the fullest advantage of this offer by the Federal Department, and promises that the Departmnt will aid in the organization of the Clubs by supplying a representative.

Stallion owners, as well as farmers, who are interested in this should apply to the undersigned for more particular information on the subject.

THOMAS HETHERINGTON,
Livestock Superintendent,
N. B. Dept. of Agriculture,
January 10, 1919. Fredericton, N. B.

PRICE 35 CENTS.

HORSE HAS SPAVIN OR THOROUGH PIN

Driving horse has a puffed appearance on both sides of hock of right hind leg. The man I bought it from was blistering for bone spavin. He limps considerable when trotting, and the other hock seems to be affected now.—J. A. L.

Reply.—Blood spavin is about the same as a bog spavin, except that it is more extensive, involving the hock joint on the front, inside and outside and giving the limb a thick, rounded

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

Will reduce Inflamed, Strained, Swollen Tendons, Ligaments, or Muscles. Stops the lameness and **pain** from a **Splint, Side Bone** or **Bone Spavin.** No blister, no hair gone and horse can be used. $2.50 a bottle at druggists or delivered. Describe your case for special instructions and interesting horse **Book 2 R Free.** **ABSORBINE, JR.,** the antiseptic liniment for mankind, reduces **Strained, Torn Ligaments, Swollen Glands, Veins** or **Muscles; Heals Cuts, Sores, Ulcers. Allays pain.** Price $1.25 a bottle at dealers or delivered. Book "Evidence" free. **W. F. YOUNG, P. D. F., 124 Lymans Bldg., Montreal, Can.**
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Taught in simplest English during spare time. Diploma granted. Cost within reach of all. Satisfaction guaranteed. Have been teaching by correspondence twenty years. Graduates assisted in many ways. Every person interested in stock should take it. Write for catalogue and full particulars . . **FREE**

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Dept. 29 London, Ontario, Can.

How I Make Big Money Out of "Ornery" Horses

By J. A. BUTLER

ABOUT two years ago I witnessed up in New York State an exhibition of horse-training that opened my eyes. A man by the name of Mackley took a devil of a mean, vicious mare that hadn't been harnessed for seven months and in a few days had her gentle enough for a school girl to drive. Mackley had taken the mare off the owner's hands for $50 and just ten days after sold her for $175.00. A clear profit of $125.00 in ten days!

That started me investigating. I learned that Mackley had simply used the methods introduced by the famous horse trainer, Jesse Beery. Beery, I learned, used to go about the country giving wonderful exhibitions in colt-breaking and horse-training; but realizing that he could accomplish more by teaching his methods by mail, had given up his exhibition work to spread his horse-training secrets by mail-instruction. Mackley had studied Beery's Course in his spare time and in a few months was able to accomplish magical results with green colts and horses with bad habits.

Other Successes

Mackley's work showed me a way to make some nice money and I determined to take Prof. Beery's Course in horse-training—but before doing so I made further inquiries. Here are what a few of Beery's students said. I'll let them tell of their success in their own words.

Mr. S. L. Arrant writes: "Just to test Beery's methods, I bought the worst balky, kicking, fighting horse I could find. Paid $65.00 for him. After handling him only a few hours according to Beery's system I sold him for $135.00.

Mr. Dell Nicholson, Portland, Mich., writes: I have trained a four year old mare that was given up by everybody. Bought her for $35.00, and now have her so gentle, my little boy handles her. Wouldn't take $200.00 for her.

Dean L. Smith, Findley, Ohio, writes: By following Beery's instructions have changed a worthless, dangerous balker into a horse worth $225.00.

Everett McBlock, Elkhart, Ill., writes: Have just broken a pony to drive and taught it some tricks. Owner bought it for $17.50. Paid me $40 to train it. He just sold it to a show company for $150.00.

How I Work

The big source of my income is in buying up "ornery" colts and horses at bargain prices, and after training the animals, selling them at a good profit. However, I also pick up good money handling colts and training horses for others on a fee basis. For instance, a farmer had a beautiful driving bay that had the bad habit of shying. A piece of paper blowing across the road would set the horse crazy. The owner thought a great deal of the animal, but couldn't take chances on the shying habit. A friend of his for whom I had done some work put this man in touch with me and in a few hours I had the horse completely cured of the habit—for which job I received $50.

Curing Bad Habits

You can see from this that my work consists not only in breaking colts and "gentling" vicious horses, but in curing the various bad habits a horse can have—such as shying, balking, fear of automobiles, etc., pulling at hitching strap, pawing in the stall, etc. etc., Beery's methods of colt breaking are particularly amazing. Under the old way of handling green colts one usually had to half kill the horse as well as himself to accomplish anything—and then the colt was usually spoiled or hurt in some way or other. But, when you apply Beery's principles, there is no hard, long work or injury to the colt.

No one should have a biting, kicking or balky horse when it is so easy to cure these vicious habits. No one should attempt to break in a colt the old fashioned way when Beery's methods make the task so easy. To every horse owner, to every lover of horseflesh, my advice is to get acquainted with the Beery principles. You can not only make money for yourself, but you can do a world of good, particularly at this day when war-demands have placed a premium on horses.

Wonderful Book Free

I have been requested to state that Prof. Jesse Beery will send his remarkable booklet, "How to Break and Train Horses" free to those interested. It is a booklet well worth having as it reveals some startling information on horse-training. I have heard men who considered themselves expert horsemen say that the booklet was a revelation to them. There is no use in my going into details on the booklet when you can get it free for the asking.

Just drop a line to Prof. Jesse Beery, Dept. 0000, Pleasant Hill, Ohio, and the booklet will be sent free by return mail. A postcard will do as well as a letter.

CHEAPER THAN A WHIP AND BETTER FOR YOUR HORSES

A horse with bruised, galled and chafed neck or shoulders can't earn his feed. Whipping only increases his suffering. You can prevent such injuries for less than the price of a good whip. Equip your faithful animal with Tapatco—The pad made with our

NEW PATENTED HOOK ATTACHMENT
(Found Only on Pads Made by Us.)

Consists of wire staple with felt washer. It gives hook a firmer hold and prevents pulling off, even though fabric is weakened by long usage. Life of pad is thus materially lengthened. This is the greatest improvement since we invented the hook.

STUFFED COLLAR PADS
Filled with our Special Composite Stuffing

are better than other kinds. They are soft, springy, absorbent and serve as a guarantee against bruised, galled and chafed shoulders.

THIRTY-SEVEN YEARS MAKING PADS
Look for the Felt Washer
SOLD BY DEALERS EVERYWHERE

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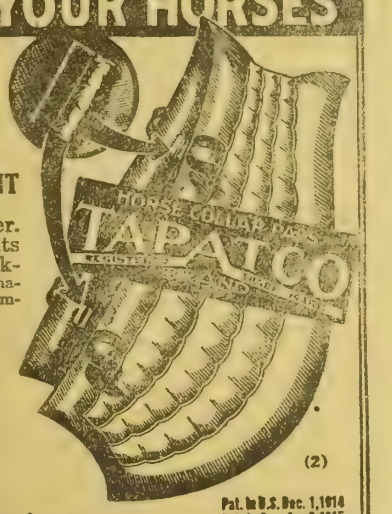

Pat. in U.S. Dec. 1, 1914
Pat. in Can. Apr. 6, 1915

TAKE MENDING WIRE ALONG WITH YOU

No one should leave home with a buggy or wagon without a small coil of copper wire, one which has many different parts or as frequently designated, "multro in parvo." This sort of knife has various parts, and among them should be one for boring holes through leather strops. In case a strop or trace should break while away from home, one would be in an awkward condition, if without any means to repair it. An instrument for boring the holes and some copper wire will save the day. The broken ends may be laid over each other and boring a few holes on each side, the wire may be threaded as in "back stitching." The ends of the wire may be twisted together and the job is done.

If the break is a chain the links may be connected by substitute of wire which will render service until home is reached. While these repairs should not be permanent, yet it is of importance to be able to get where permanent repairs can be made. The uses of the thin wire are innumerable. Nothing holds buttons on working clothes in an emergency better than thin copper wire, and frequently it is permanent for it renders lasting satisfaction. The wire will pierce the cloth like a needle and the work is done. Carefully twisting the ends of the inside holds it securely. Take it all in all, one would have to search long for for something that will give more service for its size than a roll of copper wire.

A CURE FOR SCRATCHES ON A YOUNG MARE

What can I do for scratches that have broken out on a young mare? She has had them for about five weeks and I have tried several remedies to cure them.—T. C.

Reply. — Scratches sometimes require considerable perserverance to cure them. They are caused by exposure to cold, mud, snow, slush or ice water, without proper care in fall, winter and spring. When the horse comes in, wipe off the parts as nicely as possible, bandage them with flannel to keep them warm, and when dry clean them thoroughly with a brush, not touching them with water at all. When clean apply carbolic acid salve or an ointment made of lard and pounded alum in equal parts. Give the horse rest from work, if you are working him, while attempting a cure. Give him a teaspoonful of saltpetre in feed night and morning.

Every horse owner should be on the lookout to prevent scratches at all times, as they are very difficult to cure when once started. The best preventive is to clean and dry the feet thoroughly every time when coming in from cold slush or mud. Never wash the feet and legs in cold wet weather say after November 1st till May 1st. It is good for them to be washed in hot weather.

Look out for soft spots in the field. They cause a good proportion of the sweenied and other joint ailments of the horse.

GOMBAULT'S
CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc. It is invaluable.

Every bottle of Caustic Balsam sold Warranted to give satisfaction. Price $ 1.75 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Toronto, Ont.

Steady Savings Bring Real Wealth

A Savings Account, steadily added to, even if only by small amounts, brings increased happiness to oneself and family and adds real wealth to one's country.

Decide to-day to let The Bank of Nova Scotia help you to save by opening a Savings Account here. Interest paid half-yearly.

Paid-up Capital	$ 6,500,000
Reserve Fund	12,000,000
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We invite your account. Special facilities for banking by mail. Thirty-three branches in New Brunswick. Head Office, Halifax, N.S.

16A

POULTRY.

EGG LAYING CONTEST

The egg laying contest conducted on the Experimental Farm, Charlottetown, P. E. I., under the auspices of the Federal Dairy Division and in which there are twenty pens of eight birds each: Representing Prince Edward Island, 7 pens; Nova Scotia, 5 pens; Quebec, 4 pens; New Brunswick, 3 pens, and Ontario, 1 pen.

The pens include: S. C. White Leghorns—8; Barred Rocks—5; Rhode Island Reds—3; White Wyandotte—3; Anconas—1.

The contest tsarted on November 1, 1918 and will end on September 30, 1919. J. G. Morgan is Superintendent of the contest and L. J. Howatt is the Recorder.

Following is the standing of the various pens in order of merit, for the month of November:—

Pen No	Owner	Variety	Age	No. Eggs laid	Total Eggs to date
11	James Speirs	" Wyandottes,	Hens	76	76
6	W. L. Warren,	" Wyandottes,	Pullets	70	70
12	C. B. Chapman,	" Leghorns,	Pullets	33	33
10	Thos. J. Adamson,	Barred Rocks	Mixed	32	32
8	W. E. B. Tait	Barred Rocks	Pullets	31	31
5	Bert Horsfall	White Leghorns	Pullets	29	29
7	H. W. Dowton	Rhode Island Reds	Pullets	27	27
3	N. S. Agricultural College,	White Leghorns	Pullets	25	25
15	A. T. Reed,	Barred Rocks	Pullets	19	19
19	Molly Neales,	Barred Rocks,	Pullets	16	16
1	Henry W. Cain, M.D.,	Rhode Island Reds	Pullets	14	14
13	W. J. Pickard	White Leghorns	Pullets	10	
9	P. E. Aird,	" Wyandottes	Pullets	6	
2	F. W. E. Haslam,	" Leghorns,	Hens	6	
14	Mrs. McMillan,	" Leghorns,	Hens	6	
16	Rev. J. J. McDonald,	" Leghorns,	Pullets	5	
12	Wm. Neales,	" Leghorns,	Pullets	3	
18	B. Rodd,	Barred Rocks,	Pullets	2	
17	Wm. J. McKinnon,	Anconas,	Pullets	1	
4	Wm. Retson,	Dhode Island Reds	Pullets	0	

CURIOSITY MAY SPOIL THE HATCH

Many people using incubators forget the old maxim about counting their chickens, and by opening the door to see how many eggs are pipped, materially reduce the number finally hatched. The last three days of incubation is the mots critical part of the hatching period, and the care at this time has an important bearing upon the hatching percent. At this stage the control of temperature and the regulation of moisture supply are particularly important. The temperature after the eighteenth day must be watched carefully. The activity of the chicks creates heat, and there is a tendency for the temperature to rise. Any considerable increase in the heat in the machine weakens the chicks and drives out moisture thus causing the chick to dry fast to the shell. Opening the incubator door to show the neighbors what a wonderful hatch is promised, also allows the moisture to escape, cools the machine and thus gives the chicks a shock which adds materially to the list of dead in shell.

On the eighteenth day the machine should be closed and not opened again until the hatch is finished. During this time the temperature should be watched closely and regulated by turning the lamp down so that the temperature on a level with the top of the eggs will not be above 105 degrees. The machine should be darkened during the hatching period to prevent the first hatched chicks from trampling those coming out later. There is nothing gained by helping chicks out of the shell as those unable to egt out unaided are not worth the effort required to help them out. After the hatch is finished the shells and unhatched eggs should be removed and the temperature of the machine gradually reduced to about 95 or 98 degrees and the chicks left in until the brooder is ready.

INCUBATION

The keynote to successful winter can be well ventilated without egg production is "Early hatching." It matters not whether the natural or the artificial method of incubation be used, the chicks must be hatched early, if the best results are to be obtained. If it is impossible to secure enough broody hens early in the season to hatch the number of chicks required, purchase an incubator.

In buying a machine, it should be borne in mind that at the most only three hatches can be taken off in the proper hatching period. The incubator, therefore, should be of sufficient capacity to produce at each hatch at least one-third the number of chicks required.

There are a lot of good incubators on the market. Do not be deluded into buying a machine just because it is low in price. The low-priced incubator is very often the most expensive in the end.

The incubator should be placed in a room that is fairly even in temperature, has a good, solid floor, and that draughts.

In running any incubator, the manufacturer's general directions should be carefully followed as he is the one that should know best what his machine requires.

At the same time, a little variation in the handling will often greatly improve results. Climatic conditions sometimes alter requirements. A machine that does not require added moisture in on locality may in another. A relative humidity of between 50 and 0 inside the egg chamber gives the most satisfactory results; if a machine is not giving these conditions, moisture should be added. This may best be done by placing a tray of wet sand either under the egg tray or above it, depending on how the machine is heated.

In starting the machine, run it for several days until it is perfectly regulated before putting in the eggs. The two kinds of thermometer most commonly used are the standing, which should register about 102, and the hanging, which is usually hung and should register 103. If the hatches are slow in coming off, raise the temperature in succeeding hatches and vice versa.

From the second day until the eggs begin to pip, they should be turned twice a day. They should also be cooled, the length of time for cooling depending on climatic conditions and the temperature at which the machine is being run.

It is advisable to test the eggs twice during the hatch, once about the seventh day when the inferile eggs and "blood rings" should be removed and again about the fourteenth when all dead germs should be taken out. A little practice will soon teach just what it is safe to take out and what to leave in.

As soon as the eggs begin to pip, which will usually be about the eighteenth day, close up the machine and leave it until the hatch is over. When the temperature rises a degree or two, don't get excited, as the rise is to be expected at this time, and is a good sign. It is due to the heat generated by the chicks struggling to free themselves from the shells. Wait until the hatching is over and the chicks have become thoroughly dried before opening the machine.

POULTRY AND EGGS TO LIQUIDATE NATIONAL DEBT

"Poultry and egs alone could pay Canada's National War Debt," says Mr. Fred C. Elford, Superintendent of the Poultry Division of the Dominion Experimental Farm, Ottawa. And he produces the following figures to prove it:

"Canada's net national debt on October 31, 1918, was $1.247.000.000. We have adopted the slogan, 'One hundred hens to every farm, ten hens to every urban lot.' That would mean taking 1,000.000, as the round number of Canadian farms 100.000.000 hens in the country, and 10.000.000 hens in the cities, towns and villages, a total of 110,000,000. Of course everybody in the city could not keep hens, and many would not even if they could. But many people in the suburban districts of the cities, and in the small-

FARMERS FRIEND FENCING FROM FACTORY to FARM

Announcement

The advent of peace, welcomed with joy in every home in the Dominion, brings to every one of us Canadians a new meaning, new opportunities, new responsibilities, as regards our citizenship in this great and growing Nation.

To carry on during these reconstruction days, to build and rebuild for permanency, in everything that makes for peace, plenty and perpetual prosperity, is the ambition of every one of us. Every farm home in Canada must be made pleasant and comfortable. Every field, garden and lawn must be substantially, conveniently and pleasingly fenced. Our greeting to you at this time is to remind you of our part in Canadian development in the past and ask your co-operation and continued patronage for the future. May we, therefore, direct your attention to some of the fence facts that should be known and rightly understood by every patriotic citizen desirous of making Canada a better place to live in these days of well-earned and well-deserved peace.

FIRST, the time to buy and build fencing is now. Our improved and enlarged facilities, being as the largest fence factory in Canada, enable us to offer for Canadian farms a standard, honest and efficient service. We are the "Farmers friend," then, last and all the time. Why? Because the farmer is our customer. We manufacture just such fencing as best meets the needs of the former.

SECOND, the purchasing power of every farmer is the highest ever. The farmer's medium of exchange—his crops—is produced at comparatively large. A bushel of wheat or a ton of hay will buy as much fencing now as ever before. Prices will not—cannot—be lower for a long time to come. We must pay prices of farm products. What the farmer produces and has to sell, that which represents his buying power, the world needs and must have just the price he gets it. Nor will the price of manufactured fencing be lower for a long time to come. Wire prices and the factor are dependably fixed. That fixes the price for Canada. What real difference does it make as long as the parity is maintained? When the cost of farm products is reduced, then and not until then will wire prices be lessened. It is to your advantage, therefore, to buy and build now.

THIRD, the Sarnia Fence Company has saved the farmers of Canada thousands upon thousands of dollars in actual money saved. Our plan of saving money for you is made possible under our selling system of direct dealing from factory to farm. Just two profits in the transaction—yours and ours. We are partners in the fence business. You buy and buy again, and others do the same. Satisfied customers mean a growing business. We pay nothing for your patronage, besides a good service rendered. You save by dealing directly with us on our direct dealing plan. It is a mutual co-operation between manufacturer and user of fencing that produces real fence satisfaction.

FOURTH, our price is always low—very low. If you could save twenty per-cent by buying from us, would you do it? We always quote lowest prices for just the kind of fencing you may need. Write us before you buy. Tell us your plan. Our expert advice may help you to a wise selection and, perhaps, mean a great saving of money. It is safest to know the truth about fencing before you act. Remember, we are fence manufacturers. Our one moderate profit added to actual cost of production leaves a larger profit for you.

FIFTH, our business is built upon the service basis—a real service to our customers—the satisfaction kind, the kind that lasts and brings repeat orders and induces your neighbors to do likewise. We owe the farmers of Canada the best fence service we are capable of giving. The farmers of Canada owe us their patronage as a consequence.

SIXTH, the Sarnia Fence Company saves money to every farmer who patronizes us. Our improved facilities, enlarged working capital, together with the fact that we have recently added to our management and working force the best fence talent obtainable, puts us over the top to your satisfaction. Our guarantee is back of every promise we make. Everything is just as represented in our advertising literature. Thousands of farmers testify as to the good quality of our fencing. The money you save and the satisfaction you get in dealing direct with us will be your compensation.

SEVENTH, we prepay freight on all fence orders over 200 lbs. Our prices are quoted on fencing delivered at your nearest station. You pay but once. That covers the price of the fence and the transportation to your home town, excepting electric lines and on steamboats.

This announcement will be followed by others in the Farm Papers of Canada from time to time. Do not wait, however. Cut out this announcement and get our name and address correctly fixed in your mind. We want you to know the truth about Sarnia fencing. No trouble to answer questions. Write us about your fencing plans. We are specialists in the fencing line and are here to help our farmer friends. Our advertising literature describes in detail the Sarnia fence and the best method of fence construction. It will make plain to you the Sarnia plan. We are yours to serve.

Bank reference—Bank of Montreal.

Sarnia Fence Company, Ltd.

WINNIPEG, MAN.
SARNIA, ONT.

FARMERS FRIEND FENCING FROM FACTORY to FARM

MINARD'S
"KING OF PAIN"
LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

towns, and the country villages could keep more than then—20, 30, 50, 75 perhaps. So take an average of ten. A good select hen will produce 200 eggs a year. But taking a low estimate of ten dozen eggs a year (120) for 110,000,000 hens and we would produce 1,100,000,000, dozen eggs a year.

"At the present time we consume in Canada 23 dozen eggs per head of population per annum in Canada. We could increase this allowance to 50 dozen, a total of about 350,000,000 dozen. We use less than 25,000,000 dozen of our eggs at the present time for incubation. Suppose we increased this to 50,000,000 dozen. That would total 400,000,000 dozen for Canadian consumption, a very liberal allowance. We would then have left for export 700,000,000 dozen at an average price of say 40 cents per dozen. That would bring $280,000,000 per year into the country from eggs alone. The interest on our debt of $1,247,000,000 at 5½ per cent will amount to $68,585,000. We would pay this interest and apply a balance of $213,415,000 to reducing the principal every year. In less than six years Canada's hens would wipe out the total monetary cost of the war to Canada, and our total net national debt.

"I do not say that Canada will do this. But I say that Canada might well aim to do it, for it is within the possibilities of what could be done without undue strain upon our present labor capacity."

EARLY PULLETS FOR WINTER EGGS

When we take into consideration that the average egg production on the Canadian farm is 75 or 80 eggs per hen and when well managed flocks average 120 to 180 eggs, and individual hens even go higher than 300 eggs in the 12 months, it looks as though improvement might be made in the class of stock many keep. In the first place, purebred stock is best. They should be free from a good laying strain. They should be from good healthy parentage and for winter egg production, pullets only and early pullets should be kept. In an experiment conducted at one of the Branch Experimental Farm where four different ages of birds were in competition for winter egg production, it was found that early pullets produced eggs at an average cost of 16.7 cts., late pullets 28.2 cts.; two-year old hens 95.1 cts.; three-year old hens $8.76 per dozen. Figures somewhat similar to these could be procured in larger quantities. The early pullet is the only bird that should be kept for winter egg production and it is the winter eggs that pay. A dozen of eggs at Christmas is worth two or three dozen in May or June. Early pullets mean early eggs and early chicks in the spring which of course means early pullets in the fall. As a rule, the pullets that lay earliest are the best layers so that every pullet that lays before Christmas should be marked. The yare your best layers. If you are killing off year old hens, do not kill hens that moult late in the fall. They are your best layers and with your best layers should always be mated male birds from good layers. The male is more than half the flock. A male from a good laying strain and especially from a good laying mother will do more to build up the laying quality of the flock than any other one thing. Don't use then for breeding purposes, cockerels whose pedigree you know nothing about. Better pay a good price and get a good bird.

FEEDING POULTRY FOR EGGS

It is possible to double the egg yield of a flock of hens and actually save feed at the same time if the hens are properly card for and fed the same ordinary grains used now but furnished them in correct proportions, amounts and proper manner.

The food administration of the United States Government finds more eggs must be produced. To that end, last spring, an embargo against selling hens for meat consumption was placed in effect for several weeks. It is hoped every owner of poultry will now realize the need of conserving grain by furnishing theri hens only such food as really constitutes a balanced egg making ration. By this we mean a quantity and mixture of such available rgains and foods which the hens can manufacture into an equal number of egg yolks and egg whites.

Hens do better when provided a variety of feed and some hard, sharp grit to help rgind it. Lime from which egg shells are made is also necessary. This is best provided by keeping a supply of ground oyster shell in a box or hopper. A large portion of an egg is water. Large egg yields cannot be obtained without ample pure, fresh water.

The egg production division of the American Experiment Station, has carried out numerous feeding and practical feeding methods and food formulas which will increase the average egg yield and conserve food. The results of these experiments and the most successful feeding methods used are reported in detail in a bulletin just issued by this experiment station and will be sent free to those who really desire the information. Be brief—simply write direct to the American Experiment Station, Leavenworth, Kansas, and request Bulletin number three on "Feeding Poultry for eggs."

HOME-MADE LICE POWDER

Don't let the mites and lice eat up the profits of your poultry flock when a few cents worth of home-made lice powder will free all fowls. An effective home-made lice powder is made as follows: Place 2¼ pounds of plaster of paris in a pan. Then stir in ¾ pint of gasoline and ¼ pint of cresol or 95 per cent. crude carbolic acid until a crumbly powder is formed. Dust the fowls by sifting the powder in the feathers, between the legs, under the wing and along the back.

DUCKS FOR MEAT AND EGGS

"The Pekin breed is kept almost exclusively by producers of green ducks, and also on many farms where they are grown for meat," says H. W. Sanborn, extension poultry husbandman, U. S. D. A. "They fatten rapidly and may be fed on rations recommended for chickens, but better results are usually secured by feeding more green and vegetable feeds and a larger proportion of mash.

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N. B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

As unto the bow the cord is,
So unto the man is woman,
Though she bends him, she obeys him,
Though she leads him, yet she follows,
Useless each without the other.

A KINK IN THE ROMANCE

Another "Janet and Jimmie" Story
By Maude Woodruff Newell

"You see," Jimmie Farnam said clumsily, "she is too young and pretty to be away from home alone, so Mrs. Warren wants her to get in with nice people, and I said I'd ask you if you would have her up to your home some night."

Janet's little-girl face remained half hidden under her drooping hat.

"Of course," she said. Her voice sounded queer to her own ears. She tried, desperately, to make it more natural. "Bring her over to-night, if you want to."

'All right; that's fine. She's working in Grant & Company's office."

Jimmie's voice went on in his rattling, boyish way, but Janet was not listenng. A strange little bewildering sense of loss gripped at her heart. This pretty Betty Houston, why had she come blundering into her life and Jimmie's here at Conway? Because she was alone and boarded where Jimmie boarded, Jimmie must look out for her, he must ride into the city to work with her mornings, and bring her out to meet "nice people," and——

"You are not listening," Jimmie asserted suddenly, stopping in the full flow of his narrative about work, and Mrs. Warren, and Betty.

"Oh, I was thinking," Janet stammered.

Jimmie stopped in the middle of the walk, his big boyish shoulders bent toward her.

"What's the matter?" he asked puzzled.

"I—I was thinking about you," Janet ventured, one of her hands resting shyly on his coat sleeve.

"What's the matter with me?"

His tone was irritated. Once she would have laughed at him, but now, the Fear leaped up within her and strangled her.

She shook her head, silently.

This little walk home from work, at night, with Jimmie was usually a thing to be enjoyed, but now, this last month——

Jimmie bent suddenly and kissed her, in the shade of the big pine-tree, in the half darkness of the deserted country street.

"Now, tell me, honey," he said. "Had a hard day, or somebody was cross to you over the wire, or you don't like my new overcoat?"

His voice had changed. The irritation was gone. "Your overcoat is beautiful," she approved, "and I wasn't so awfully busy to-day. I—I was just wondering if you—if you were contented, waiting for me. I can not leave home yet, and you said you'd just wait till I—could—but now you are foreman—and—you could—have any girl you wanted, you know—and I've sometimes thought that maybe—since, you wished that you hadn't said you'd—wait."

"Oh," teased Jimmie Farnam, "that's some bugaboo. For a sensible business girl, operating one of the busiest country switchboards in Massachusetts, and fooling the whole police force as you did a couple of months ago, when you thought I had killed Quilty——"

Then he saw her eyes.

"Why, honey girl, stop such nonsense this minute. I'm glad I came. I've never been sorry. Didn't I almost have a fit when I thought I'd have to go somewhere else to work, and leave you here in Conway, where I couldn't kep my eyes on you? Come here."

He put his young arms around her, safe in the shadow of the big old tr e. The Fear died down slowly, like a quenched fire; then it quite disappeared. She drew a long, long breath.

"You must scold me," she said. "You must say, 'You crazy, silly child, use your common sense if you have any.'"

Jimmie laughted at that.

"You funny child, come on home, or your mother will think that I've kidnaped you. I have a good mind to, anyway."

"Don't you want to wait, Jimmie?"

"Well, I'll consider it," Jimmie declared loftily. "Can you cook yet?"

"Of course." Janet's accent was firm. "I learn how to cook two new things every week."

Their eyes met and they laughed together. The sky had cleared. Janet's heart soared happily.

"Now, hurry back and fetch Betty Houston if you want to; while I have my supper and change my dress."

"All right, but don't fuss up. She's a good sort. She won't care."

Janet smiled bravely, her chin up. She would not be silly about it, or fret over it. It was all perfectly natural—the two were boarding in the same house, and going in to work on the same trolley day after day. Of course they had become well acquainted. Why not? She would not worry about it.

She said this to herself over and over again through the long, long evening; for Betty Houston came, smart and pretty in a soft silk that matched her yellow hair and set off the baby blue of her eyes; and Janet, trying to be gracious and friendly, soon found that eBtty Houston was not shyly in need of any of her overtures.

The girl was amusing in rather a loud way. Her slang was conspicuous, and as she had no apparent reverence for anything or anybody, the range of subjects for her wit was large.

Janet laughed often, and Jimmie applauded boisterously.

"Some fun, eh?" he whispered to Janet in the little hallway as Betty was saying good night to Janet's mother in the living-room back of the parlor.

Janet nodded, her chin up, her eyes seeking his. Did men care more for a girl like that? Would Jimmie care more—perhaps soon? She did not know how to hold him if he did not want to stay. Could love go, quick, like that, like some gossamer thing?

But Jimmie did not notice.

"Come on, Betty," he urged; "it is growing late, and I have to work for a living, you know."

"Don't let that worry you," she retorted.

Jimmie laughed, Betty giggled, Janet smiled at them from the open doorway, and stood, in the cold wind, and watched them hail the coming trolley, waving to them as they disappeared in the darkness.

She closed the door softly, and stood there in the dark hall. Her throat was dry as though she had been crying. She felt as if she were fighting something that she could not see.

Her mother called to her, but she did not go back into the cheery room where her mother sat reading.

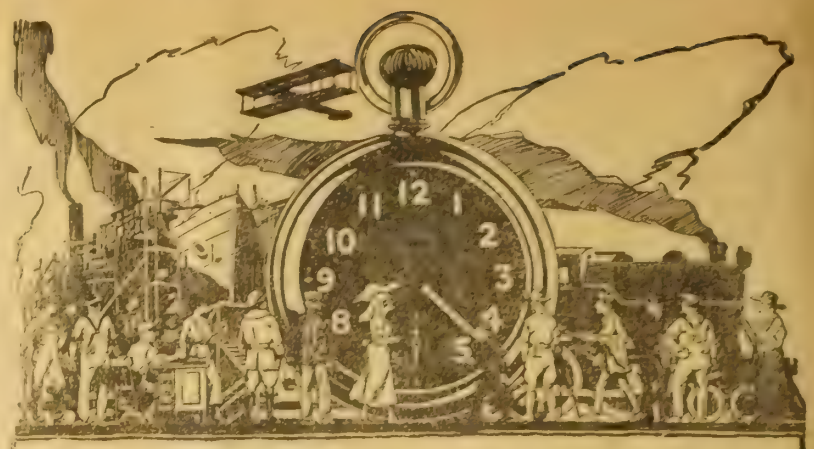
It was raining in the morning, a sullen November downpour, but she faced it bravely and went in to work at nine o'clock. The morning was a busy one. She was thankful for that. Her fingers flew in and out among the green and white cords.

Then it was lunch-time and she trudegd home, a half mile in the rain, and back again. The afternoon was long and dull. At five o'clock she put up her head-piece and breast transmitter with a sigh of relief.

The rain was still piling down. She dd not expect Jimmie to-night, but he mght call her up on her home telephone.

She ate her supper half-heartedly. Her whole body seemed to be lstening for the telephone bell, but it did not ring.

She went to bed early. If it would only hurry and be morning! The night dragged. The next day dragged. The rain turned to snow in the after-



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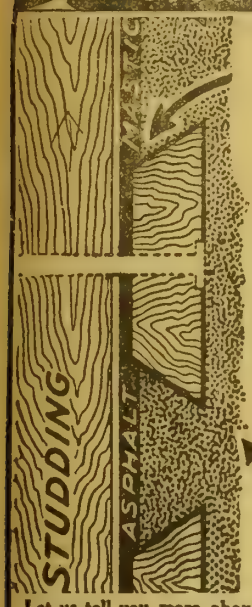

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noon and at five o'clock it was quite dark.

She came out, her heart pounding, and found Jimmie waiting, whistling, hs coat collar about his ears, his cap close over his ears.

"Hullo, what's your name?" he said, tucking one of her hands down into his big ulster pocket.

Her heart leaped up and her fears vanished, magically. Why, this was Jimmie, her Jimmie; she was silly to make so much out of nothing. How he would laugh if she told him! She flushed up at him, her blue-gray eyes shining out from under her snow-covered tam-o'-shanter.

"Zenobia," she said wtih a grand duchess air.

"Great Scott!" Jimmie chuckled. "Sounds like an advertisement. Who was she?"

"I don't remember, myself," Janet confessed, laughing. "A queen, or sometning like that."

"Um. Well. If you are a queen, then I am a king. If you're dealing out royalties, I'm going to have mine."

"Of course."

"Some king and queen, walking home in the snow," Jimmie chaffed. "Where's our royal turn-out, and our lords and ladies in waiting?"

"Oh, we haven't our throne yet. We are exiles now."

"In two years more, uh?" said Jimmie.

She nodded.

The snow came down softly on her uplifted face.

"Honey girl," he said and tightened his hand over hers in the big ulster pocket.

Her mother had supper smoking hot when they came in and they had a "royal meal for a royal couple," Jimmie said.

It was late when he went home.

Janet went up to bed, singing softly under her breath.

But on Sunday night when Jimmie came again, he was different, and the Fear crept back again and this time it stayed. For something was plainly bothering him. What could it be? He would be the same old Jimmie for a while, good-natured, fun-loving, then abruptly his manner would change.

His work was all right now; it was not that. He was growing tired of her, tired of waiting, and he did not know how to tell her. That was it! And she did not know what to do.

Betty's voice, one day over the wire, brought the problem home to her sharply. It was nearing Christmas. The board had been ablaze with lights all the afternoon. Janet had worked at a feverish pace to keep up with the rush. Now it had dropped a little, and as Betty called in on Grant & Company's wire, she took the call mechanically.

She repeated, her heart jumping as she recognized the number. Number 229. It was Jimmie's number at the factory.

She plugged in and rang. She heard Jimmie's voice, after a second, and cut out swiftly. She would not listen. She was afraid to listen.

Two minutes, three minutes, five minutes, and still the two supervisory lights showed dead. They were still talking.

Six minutes, seven minutes. She cut in, desperately. Betty was laughing. She cut out again.

After a minute the lights flashed out and she took down the cords. Her hands were like ice.

She tried to fight it out, to be sensible. She tried to think of reasonable explanations for their talking so long together, but she could think of nothing but Betty's gay little laugh, and suddenly she hated her.

She got through the day somehow, and the long evening, for this was not one of Jimmie's nights. The next day Susie Kerwin whispered to her suddenly:

"Saw your Jimmie last night."

Janet tried not to hear her.

"I said I saw your Jimmie last night."

"Oh, did yoh?" whispered Janet.

"Having dinner at Fancher's with a stunning-looking girl, a peach of a blonde."

"A friend of ours," Janet said bravely.

"Oh, she's got the style, hasn't she?"

"Yes, she is pretty."

"Well, if he was my fellow, I'd not let him see too much of a pretty girl like that."

Janet smiled, working on like a machine. There was no feeling in her fingers. So it was true, after all. Would he tell her about it to-night?"

All the way home she waited for it, her hand like ice in his big ulster pocket, but he did not even speak of Betty.

The next few days were days of struggle. What should she do? Tell him what she knew; see what he would say? She could not do that. Give him back his ring, without telling him why? Neither could she do that.

Then another operator saw Jimmie and the blonde walking together another night and Susie told Janet bluntly what she thought about it.

A few days after that Susie told her other news.

"I've seen that blonde twice lately with Mr. Grant. He's no good. He's got a wife and child in Canada. He ran away with one of his stenographers a couple of years ago and then left her, down and out. Better put her wise if she is a friend of yours. Or perhaps she is only playing Grant off against Jimmie."

Janet could not talk about it. Why must they be telling her these things?

she wondered miserably. Jimmie had been really cross the night before. Did he know about Mr. Grant? Was that why? Did he care as much as that in such a little time?

Life was very hard these cold winter days. And there was no one to tell her what to do. She could not bear to confide in any one, not even her mother. She must fight it out herself. The strain of it made her sharp-tongued; she and Jimmie had squabbles, and matters went from bad to worse very fast.

Then, late one December afternoon, th climax came sharply.

She had put up the connection herself, but it was not Jimmie talking this time. It was Grant & Company's wire—it must be Mr. Grant and Betty.

"Seven o'clock train," he said. "I'll get on at the end of the station so I won't be noticed around there. Don't fail me now, Betty."

And Betty's high treble came back gaily reassuring:

"I'll be there."

For a minute Janet's heart leaped up, sick within her. The foolish, foolish girl. So it had come to that? That she cared more for him than she did for Jimmie? And Jimmie, what of him? How much would he care? Would it mean everything to him? Some one must stop Betty and bring her back to him. She must not hurt him like that. Then the other side of it came to her.

With Betty gone, in disgrace, Jimmie would be her own again. He would forget Betty after a while, no matter how much he cared now. Betty was only a butterfly. She could not have won her way very far down into his heart. She certainly could not stop Betty from going with Mr. Grant if Betty wanted to go.

Could she not? The question came to her unbidden. She turned away from it sharply. It came again, and again, and would not let her rest. The train went at seven. Perhaps Jimmie—if she got him on the telephone and told him about it—but Jimmie must not know about it at all, ever. He would never trust Betty again if he did. Some one else must stop her.

It was six o'clock. Janet climbed down from her chair. Her fingers were clumsy with her hat and coat. There was a pounding in her ears and sick little shivers up and down her spine.

She turned away from the main street and took the road toward the railroad station.

It was the hardest thing she had ever done. Slowly she let her dreams go, one by one, and faced what was to come bravely. If he loved Betty and she could save Betty for him, it didn't matter about her, after all.

She was a grub, not made for love and happiness and beautiful things like Betty; she would not try to hold him any longer. She would let him go, as he wanted to go.

It was quite dark along the country road now. Ahead was the tiny box of a country railroad station, and a single black track wound past it over the long low marshes on toward Boston.

She hesitated at the station door. Her heart was in her throat. It must be nearly seven. Where was Betty?

She saw her then, standing trim and stylish in the shadow, and went up to her.

"Hullo, Betty," she said. Her voice trembled.

Betty turned and faced her, swiftly.

"Oh, hullo," she said. There was a sudden guilty fear in her eyes.

"Please don't—go," Janet said softly.

"Don't go where?" demanded Betty. She laughed a little, trying to appear natural. "What are you talking about?"

"You and Mr. Grant."

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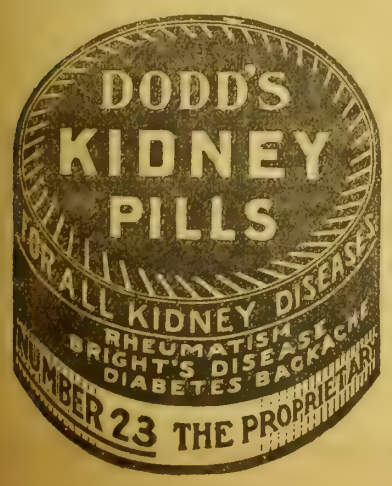

"You crazy girl, what notion have you in your head?"

"I heard it over the wire this afternoon, when you were planning to go."

Betty wilted for a minute, then she tossed her head.

"Well, what of it? It's no business of yours."

"He nas a wife and child in Canada. He ran away once before with one of his stenographers, nd deserted her afterward. He is bad, Betty."

"He says that I am the only one he has ever cared about. Who—who told you all this?"

Some of the definance had gone from her.

"It is true, Betty. I know it. You will be sorry all your life. You are too young and pretty. You ought to have the best—a nice home and husband and children, not a horrible, shameful make-believe of a life. Oh, Betty, please——"

"He will be good, he promised——"

"He didn't keep his promise to his wife. Nor to the other girl, Betty."

Betty shivered suddenly in the cold wind that came over the frozen marshland.

"What made you come?"

"I had to. I couldn't let you go—like this."

"I didn't think you even liked me. Jimmie has been nice to me, but I thought you felt above me—someway——"

Janet put her arm around Betty then. Her heart went out to her suddenly, in a little new feeling that surprisd even herself.

She talked on and on, arguments, persuasions, entreaties, her arm about Betty's waist, her voice choking a little.

"And your folks at home, Betty—your mother——"

Betty's volatile nature was quick in response. She was beginning to weaken.

"Don't," she said sharply, and then she straightened away from Janet.

"But I've got to tell him——"

"No, you go on, and I'll tell him myself."

For a second Betty hesitated. Then, without another word she started back up the dark road alone.

Janet found Mr. Grant at the extreme end of the station platform and delivered her message bluntly, her voice queer and shaking. What he said was not pretty to remember afterward. He was still talking when she left him and ran up the road after Betty.

They walked on hand in hand. Betty was crying softly. At the corner of the street she kissed Janet.

"You are a good girl," she said. "I guess I was crazy. I've woke up now. You won't tell any one, not even Jimmie?"

And Janet, making her sacrifice complete, promised, her face pale, but her eyes shining.

She slept that night as she had not slept for many weeks.

She would give Jimmie back his ring the next night when he came. Her way was quite clear before her now. If he loved Betty, Betty would surely learn to love him after a while.

Of herself she would not think at all. She felt quiet all over the next day, as though she were asleep.

The sight of Jimmie waiting beneath the big pine was the first thing to stab through that numbness.

He smiled down at her.

"Now, tell me all about it," he said abruptly.

Janet stared at him.

"About what?"

"Betty told me all about it this morning."

"Why did she tell you? I—I promised not to."

"I know it, but she felt differently about it this morning. She began to realize what a fine thing you had done for her, and besides, I have known about it for a month or two anyway. Tried my best to break it up, he's such a cad, but she was so set, I couldn't budge her, and I hated to squeal on her. Besides, I kept thinking it would blow over peaceably.

"I took her out to dinner once to keep her from meeting him. I hated not to tell you, but I knew you would wonder why I did it, and I didn't want to squeal, so I kept still.

"It's been some job; it just got me all worked up. I didn't know what to do. She is pretty, but she is such a crazy-head. She was good fun at first, but she wore on me like time after a week or two. She's going hom to Connecticut this afternoon, thanks to you, honey girl."

"Going home," whispered Janet. It was all she could think of to say.

Jimmie's honest eyes met hers.

"Janet, if you were like some of the girls I see, I'd—I'd—well, I don't really know what I would do; but I know what I wouldn't do."

"What wouldn't you do?" whispered Janet.

He put his arms about her carefully, reverently.

"I wouldn't love you as I do, Janet."

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"MORE BREAD AND BETTER BREAD AND BETTER PASTRY"
Western Canada Flour Mills Co. Limited
HEAD OFFICE—TORONTO, ONTARIO
Canada Food Board License Nos.
Cereal 2-009—Flour 15, 16, 17, 18
"Purity Oats makes Better Porridge"
52

WHAT TO DO WITH CAST-OFF TEXTILES

1. Underwear and hosiery may be used for wash-cloths, dusters, dustless mops, braided and woven rugs.

2. Badly worn sheets, pillow cases, and parts of muslin underwear after being laundered may be torn and rolled into bandages and dressings for first aid chests or Red Cross work.

3. Parts of old table cloths may be re-cut for luncheon cloths, table napkins, doilies, and runners.

4. Worn towels make good wash-cloths. Worn Turkish towels make good padding for kitchen holders.

5. Worn curtains make good padding for ironing board or dish-cloths.

6. Pieces of woolen goods, percales, and ginghams may be used for patchwork comforts and quilts.

7. If beyond practical use in the home, cloth or rags should never be thrown away or burned. They are needed in the manufacture of paper.

A PROGRESSIVE BANK

The Canadian Bank of Commerce is rapidly winning its way in Canada to recognition as the "Farmer's Bank." The management of this financial institution awakeend some time ago to the fact that the farmers of Canada are a rather important section of the population and so the Bank of Commerce decided that it would get after the banking business of the farmer. It did that and as the years go by is working harder than ever with that end in view. all of which goes to show that the Canadian Bank of Commerce is a live wire.

Its srong position among the Banks of Canada and its progressive spirit is rapidly winning for it recognition among farmers' organizations.

The branch managers of the Bank of Commerce are getting in close touch with the farmers and are assisting them with advice and in a practical way.

The result is that in many sections of the Maritime Provinces where the farmers are doing business co-operatively, they naturally turn to the Canadian Bank of Commerce as an institution to which they can go and receive every consideration.

The advertising of the Canadian Bank of Commerce wil lappear regularly in "The MARITIME FARMER." Many of its readers have already had business dealing with this bank and tell us that the Bank of Commerce is one which has an attentive ear when the farmer goes to its branch with his business.

GENUINE DIAMONDS
CASH or CREDIT
Terms: 20% Down and $1–$2–$3 Weekly.
We trust any Honest Person
Write for Catalogue to-day.
JACOB BROS., Diamond Imp., 15 Toronto Arcade, Toronto

PLACING PICTURES AND BRIC-A-BRAC

Don't have too many. That is the first and cardinal principle. Don't make of a home either a museum or a curio shop. If there were no other reason for not doing it, the amount of time and energy wasted in dusting would be a sufficient one. But the effect of a mass of small, fragile articles staring down from wall, mantle and book case is at first startling and then overpowering. All thought of rest or repose in such a room is lost. Some walls seem so overloaded that one has an uncomfortable feeling that the ornaments may come crashing down upon him. If in doubt where there are too many things about, put some away and be on the safe side. It is easy enough to bring them out again if, after while without the articles, the place seems too bare. Few homes err on the side of too little.

In the arrangements of the small things, the same rules apply that were the guide in the treatment of the room as a whole. To scatter a lot of them about and hope that the room will consequently seem better furnished and decorated is to insure an indifferent result. In houses that have been handled by clever decorators, not one little vase, not one tiny picture is placed without careful thought of the effect from every angle and point of view. These minor details indicate the work of the true artist, and perhaps only the true artist can fully appreciate them, but even the most ordinary perception can realize the difference between this kind of a room and one in which there is a haphazard conglomeration.

The pictures on the wall must be hung with as much attention to balance and proportion of spacing and mass as is given the large pieces of furniture. They must be distributed about the room so that no one part will seem more prominent than the other. One wall cannot properly have a group of half a dozen or more striking pictures and the rest of the room have none. If there is no other available wall space, then let the one spot have only one or two pictures that shall not seem to outweigh the absence of them in other parts.

Hang pictures to decorate the wall space. Treat each division of the wall between the interruptions of architectural features, the doors, windows, fireplace, or the furniture, as a panel which is to be decorated, on which the pictures are to be arranged so that the proportions of the space are kept beautiful. The position of the furniture against the wall will influence this arrangement. The furniture will seem partly to support the picture above it, so that a heavy massive frame is out of the question above a slender table which could not in reality adequately bear its weight. In the same way a large picture should be placed squarely over the piece of furniture beneath it so that it may convey the impression of balance.

Think of this wall space as a sheet of paper which is to be divided in such a way that it will become more beautiful and more interesting. Supposing there are three pictures that you wish to put on the wall, the position of the largest is determined by the furniture beneath. You can mark out on a piece of paper the proportions of the wall space and put in it a rectangle to indicate the main picture. Then cut two smaller rectangles in the proportions of the smaller pictures and move them about until you have discovered the most interesting positions. Perhaps one of the most important rules is to remember that when there is a division of space, one part should predominate. That will prevent the arranging of three or more pictures of the same size along in a row with equal spaces between them. It is a much more interesting grouping to put those on each side a little lower or a little higher than the center one. Or if the proportions of the room demand that the wall space be made to seem as high as possible, if the ceiling is low, and a vertical rather than a horizontal motion is needed, place the small pictures on one side above, and on the other side below, the center line. If the pictures are of different sizes, they must be placed more carefully in order to balance well. Rmember the old principle you learned as a child on the see saw board, that the father from the center the lighter the weight required. Thus the smaller of the side pictures should be hung farther from the center picture than the other to maintain the balance to the eye. In certain rooms, when the treatment of the furniture is entirely formal, the pictures should be hung with equal formality. That is the pictrue or the mirror must be placed exactly over the center of a table, and smaller pictures at each side, at even distance, although the effect would be a little stiff and precise. But in other rooms that are furnished more informally, living rooms and bed rooms especially the pictures can well be hung so they do not establish exact symmetry.

The question of how high to place pictures should be settled generally by the arrangement of the space. In rooms the walls which have been properly treated, this will bring the center line of the picture about on the level with the eye of a person standing. It is amusing how short people invariably hang pictures so that they seem too low to a taller person, and a small individual coming into another's home often feels that the pictures are almost to the ceiling. A happy medium should be striven for; five and a half feet is a good average height to have the central point of interest in a picture. This will be somewhat influenced by the relation of it t othe furniture below. A picture carrying out a vertical line of interest over a table so as o have no connection with it. But this relation can often be maintained by a small object on the table such as a candle stick or vase which will reach up to meet the lower line of the frame.

Finally remember that the lines of a picture should follow the lines of a room. Just as the top and bottom of the picture should be parallel with the floor and ceiling, so should the sides be parallel with the wall, the doors and the windows. In other words don't let the picture tilt out from the wall. Put the screws so near the top that the weight of the frame below will keep it upright. This, in a measure applys to the wiring also. It is usually better to have straight wires hanging from two hooks on the molding, than the one forming two slanting lines. But there is no actual principle broken by using the one wire, for the axis of the whole remains truly vertical.

The arrangement of the mantle shelf, tops of book cases, side tables, bureaus and such furnitures, requires exactly the same kind of thought and planning. An exact and careful balancing is essential. Many people understand this means exact symmetry, which is the surest means by which the inexperienced may obtain successful results. A candle stick on one side of a mantle, balanced by its mate on the opposite side, at just the same distance from the end, is sure to be correct. But it is not as interesting perhaps—it calls for much less skill, certainly, than the arrangement which balances objects, differing in mass, color and height, and balances them unerringly.

IS MILK EXPENSIVE?

Do you know that those bothersome bottles the dairyman bangs down at your door with such unfailing regularity contain food that is essential to your bodily welfare? Milk is more than a mere auxiliary to your coffee or to the dessert you prepare for supper. It is real food.

There are certain valuable salts in milk which make it an indispensable factor in keeping the body vigorous and wholesome. Your teeth and bones receive their proper allotments of lime if you include milk in your diet. That same milk, because of its high protein value, keeps your blood and muscles in excellent repair. For these reasons milk is particularly good for your children. Their pliant, growing bodies develop much more easily with its aid.

You realize thta your own body is changing all the time—tearing down and rebuilding its structural cells, but are you aware that milk furnishes just the right kind of fuel for this ceaseless work? It is not necessary to have whole milk, as even milk with the fat taken off contains the desired elements of nutrition. Save every drop of milk, whether whole, skimmed, or sour. Make your sour milk into delicious cottage cheese, or use it in cooking.

Whole milk is especially desirable for children because of its fat content. You can supply fat in some other way for yourself. Give your little girls and boys a quart of milk every day, until they are at least eight years old. After they have passed their eighth birthday, give them from one-half to one pint as part of their diet.

Be sure the milk is clean and fresh. If you live in the city, but it pasteurized from a reliable dairy. In the country see that your cows and milkers are clean and healthy.

With so many ways to use milk you will never be able to say, "I'll drink the stuff, but I'm so tired of it!" Bake

WANTED!

Time to help others!

These GOLD DUST hints shorten household tasks.

Short work after baking

Mixing bowls, rolling-pins, spoons, pans, are obstinate to clean when they get "stuck up." One woman made this discovery: Grease left by shortenings causes nine-tenths of the trouble. She looked around for grease-dissolvents. Gold Dust, being the most effective and gentlest, dissolved that nine-tenths of the trouble. It shortened the work of cleaning up after cooking.

Bathroom quickly cleaned

Even in the bathroom there's a bit of oil, a bit of grease. But Gold Dust quickly gets rid of dark circles and rims in wash bowls and bath tubs—because Gold Dust quickly dissolves the grease. And, you'll find, Gold Dust cleans gently, without scratching or marring the surface of porcelains, enamel, tiling or nickel-plated fixtures.

Sparkling mirrors and windows

Your everyday plain or "pressed" glass will quickly respond to this treatment: Dissolve a tablespoonful of Gold Dust in a dishpan of hot water, and use a small brush. Gold Dust quickly dissolves the thin film of oil or grease, and your glass will sparkle like diamonds. Mirrors, windows, glass doors and set-in glass of all kinds come out from their Gold Dust bath clear as crystal.

A quicker way to wash the dishes

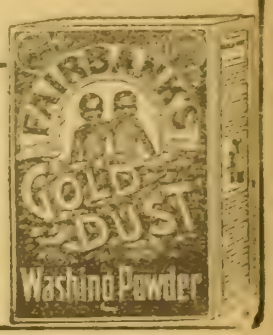
If you want to get rid of drying your dishes with a towel, try this: Use a tablespoonful of Gold Dust to a dishpan of water, wash all dishes of one kind together, scald with boiling water in a wire dish drainer. It is because Gold Dust so thoroughly dissolves the grease that the dishes come out clean and sparkling.

GOLD DUST

The Busy Cleaner

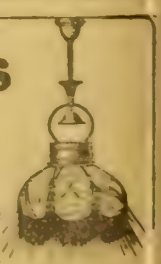
MADE IN CANADA

THE N.K. FAIRBANK COMPANY LIMITED, MONTREAL



Better Than Gas or Electricity

More Economical Than Wick Lamps



Your eyes are worth more than all the money in the world so why neglect them? Install a "Knight" Lighting System and flood your home with the purest, whitest and best light known to science. Costs one-fourth the price of electric outfits. Burns either gasoline or kerosene. Sixty hours of the most beautiful light from each gallon of fuel. No smoke. No dirt. No odor. No chimneys to clean. No wicks to trim. Nothing to get out of order. Simple. Safe. Satisfactory. Send for introductory offer and agency proposition.

KNIGHT LIGHT & SODA FOUNTAIN CO., 240 Knight Bldg., Chicago, Ill.

it in chocolate, cocoanut, and other flavored custards, or make delicious sauces and soups. Use it in junket (especially for children), gravies, and chowders. Combined with rice, tapioca and corn starch, it makes such good puddings. Sherbets, ice creams, hot chocolate an dcocoa, prime favorites all, require a rgeat deal of milk.

When using milk in cookery for custards, cocoas, etc., it is best to scald it over hot water and avoid the danger of its boiling over or scorching.

Remember in making junket, a favorite with the children, that the milk must be just warmed and then the dissolved junket added with the sweetening and flavoring; otherwise the junket will not set.

For custards use one cup of milk to one egg and sweeten with corn syrup. In rice puddings only ½ cup of rice to one quart of milk is necessary. Cook this very slowly for a long time (about two hours) to obtain the best result. For variety, try adding dates with the raisins in rice puddings

If cornmeal, oatmeal or rice is cooked in skim milk, a delicious creamy cereal results. Use the same amount of milk as you would water for the first two, but for rice you can well use four or even more cups of milk to one of rice. Cook for an hour in a double boiler.

Milk has gone up in price, like everything else, but do you really think you can afford to do without it when you compare a bottle of milk with the same money-value in meat and eggs? A noted food expert has said that milk, if it reaches 25 cents a quart, is still an economical food. When you consider that there is no waste in milk, doesn't the statement, even without a scientific analysis, seem reasonable? Of how many of the other foods that come into your home every day, can you say the same thing?

Aside from the money and food value of milk, the extensive use of it is a cooperative measure. Our farmers are paying such a big price for feed for their cattle that, unless we consume the milk, a decided decrease in the number of cattle is inevitable. And, though quickly destroyed, a herd is raised but slowly.

If the demand for milk is large enough, the rancher is encouraged to breed cattle in greater numbers, and in so doing, the price of milk, as well as meat, is kept around normal.

Are you and your children going to take this milk suggestion seriously, and mark up "profit" on your health ledger, as well as in the family account book?

The Salvation Army Million Dollar Fund

MAIL YOUR CONTRIBUTION TO ONE OF THE TREASURERS BELOW, OR TO COMMISSIONER RICHARDS, 20 ALBERT ST., TORONTO

We MUST provide for the need of the Soldier and his family!

It is absolutely necessary to ensure certain safeguards and comforts to our boys over there and over here, so that they may be re-established in Canada, strong in body and soul, contented that we at home have stood by them to the finish. What sacrifice can we make for the boys who were prepared to sacrifice everything for us?

What the Salvation Army Has Done

It has provided comforts for fighting men since the twelfth day of the War.
Hundreds of thousands of parcels of food and clothing for the boys.
Tens of thousands of beds in Hostels in daily use in France, England and Canada.
197 Huts for Soldiers.
1,200 uniformed workers.
45 ambulances.
Thousands of War widows cared for.
Looked after soldiers' families.
Labored for the Master.
Helped to preserve the home ties.
Given the MOTHER touch to lonely men.

What Remains to be Done

Keep the Hostels open and open more, so that every returning soldier can get a clean bed and wholesome meals at a price he can afford to pay.

Provide comforts and safeguards for our boys, advancing into Germany, as well as those coming home and needing a place to eat and sleep, in Halifax, St. John, Quebec, Montreal, Kingston, Toronto, London, Chatham, Winnipeg or Vancouver.

Guide and assist soldiers' families, especially the widows and orphans.

Soldiers Home January — Coming Campaign 19th to 25th

The Salvation Army is equipped and organized to take care of the soldiers' URGENT AND PERSONAL needs—needs that are imperative. It has never made a general appeal for funds to carry on, this work until now. Give and give liberally. If you are not certain that your contribution will be taken up by a canvasser, send it direct to the Hon. Treasurer, Sir Edmund Walker, Toronto—subscriptions will be acknowledged.

"God loveth a cheerful giver"

SALVATION ARMY MILLION DOLLAR FUND COMMITTEE
Headquarters:

Treasurer Toronto and Ontario: SIR EDMUND WALKER, Toronto
Treasurer New Brunswick: JAMES M. CHRISTIE, Bank of Commerce, St. John, N.B.
Treasurer Nova Scotia: DONALD MacGILLIVRAY, Bank of Commerce, Halifax, N.S.

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PUT YOUR HEATING AND COOKING EQUIPMENT IN GOOD ORDER

See that all the grates are in good order.

Cover all the pipes with asbestos cement to prevent unnecessary radiation.

Learn to use correctly the three dampers: in the ashpit, in the smoke pipe, in the check draft.

Automatic damper regulation is a most important preventive of fuel waste. Install one of the heat regulators if possible.

If not, install a simple damper control operated from a room above; even this helps.

Keep all heating surfaces free from soot.

Remember that the air flow through fuel makes it burn; learn to control your air supply.

Make a real study of the operation of your patricular heater and range.

Rules for Burning Coal

Select a size giving the best control and economy, if the local supply allows you any choice.

With strong draft use the small sizes. With weak draft use the large sizes.

Carry a deep fire—at least level with the fire door.

In mild weather, carry a lay of ashes on the grate.

Don't shake live coals into the ashpit.

Save all the good coal by sifting ashes.

Don't let ashes pile up under the grate.

Keep the damper partly closed.

Use the ashpit damper and the check damper to control fire.

Never open the fire door as a check—it is wasteful.

After the fire is well started, put on coal enough to last eight to twelve hours.

Burn off gases with checks open, before closing up a warm air heater for the night.

To bank the fire for the night, partly close the pipe damper, close the ashpit damper, and open the check draft damper.

Do not heat unused rooms.

Install weather strips or storm windows. and storm doors.

Let in sunshine; it is free heat.

Pull down the shades early in the evening.

Don't overheat the house; 65 to 70 degrees is sufficient.

Watch the weather, don't let the house get cold.

Ventilate wisely; use electric fans to circulate air.

What do you see when you go scurrying forth on a shopping errand? People's faces, and the crowded street crossings, and a glittering shop window or two?

Then I am tempted to turn into a fortune teller and prophesy: "Trouble will cross your path—and you will have a double chin!"

The chin is the first part of the body to show either age or lack of care—and a double chin means one of the two.

In youth every muscle of the body is exercised, the chin included; therefore the muscles are left firm and strong. As we grow older, our movements aer more restrained, and while arms and legs get a fair share of exercise, the chin sinks into absolute inactivity. There being thus nothing to exercise the muscles supporting it, they grow flabby and begin to sag. The only way to avoid this ultimate disaster is to keep the chin muscles firm by use, by exercise, and, where, necessary, by harmless artificial aids.

By use, I said. If you persist in letting your chin acquire the habit of drooping down or drawing in, your double chin is doubly assured. That is why, if you see only shop-windows and people's faces when you walk abroad, the fattest of double chins awaits you.

Try a new habit for your chin when it goes a-walking. Watch the skyline, not the pavement. If you are tramping along a country road, look above the tops of the trees, or off to the sunset, or away to the hills.

RELIEF AT LAST

I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
Address

MRS. M. SUMMERS, Box 309
Windsor, Ont.

MARKETS.

CHARLOTTETOWN

January 18th, 1919.

Beef, Ox, (carcass), 16c to 18c; Cow, 14c to 16c.
Veal, (carcass) 14c to 16c.
Hogs, selects, 21½c, organs included.
Lamb, (carcass), 22c to 24c.
Mutton, (carcass) 16c to 20c per lb.
Beef Hides, 15c per lb.
Sheep Skins, $3.00 each.
Calf Skins, 30c lb.
Potatoes, 50c per bushel.
Carrots, $1.25 per 100 lbs.
Turnips, 20c to 25c per bushel.
Parsnips, $2.00 to $2.25 per 100 lbs.
Oats, 80c per bushel.
Cornmeal, $4.00 to $4.25 per bag.
Bran, $2.20 to $2.30 per bag.
Oatmeal, $6.00 to $6.50 per bag.
Middlings, $2.50 per bag.
Oil Cake, $3.85 to $4.25 per bag.
Buckwheat, None.
Ontario Flour, $12.00 to $12.40 bbl.
aMnitoba Flour, $12.25 to $12.75 bbl.
Chickens, 28c to 32c lb.
Fowl, 22c to 24c lb.
Turkeys, 38c to 40c lb.
Geese, 25c to 30c lb.
Butter, Creamery, 50c to 52c lb.
Butter, Dairy, 42c to 48c lb.
Cheese, 26½c to 28c lb.
Eggs, 52c to 58c doz.
Hay, loose, 95c to $1.00 per cwt.
Hay, Pressed, $18.00 to $20.00 per ton.
Straw, loose, 50c to 60c per cwt.
Straw, Pressed, $12.00 to $13.00 ton.

COUNTRY PRODUCE FAIRLY ACTIVE

Montreal, January 18

Receipts of fresh eggs continue to increase and the market is easier, Toronto jobbing price of specials was reduced during the week to 70c. Ontario country shippers report sales during the week at from 63c to 70c, f.o.b. Prices on the Montreal market are irregular, some dealers reporting sales of fresh specials at 78c, and 80c, while larger operators having heavier receipts, have sold specials at 75c, and extras at 70c to 73c.. On the farmers' market at Toronto the retail price was 80c to 85c. The scarcity of storage eggs and the fact that many wholesalers are completely sold out and have to depend on fresh receipts to supply their regular trade, is helping to hold prices at their present level. The United States offerings have not yet reached a point where supplies from there can be imported at a profit, but dealers here are looknig for a break any day now in that market, which will immediately affect the situation here. Very little change is reported on the Prairie Provinces and British Columbia markets, fresh receipts are light, and prices firm. Heavier receipts of Chinese eggs are reported and one car has been sold to the Alberta trade at 62c, f.o.b., Vancouver. recandled.

The feature of the local egg situation continues to be the strong undertone to the market for cold storage stock owing to the steady decrease in supplies available and the continued good demand for local consumption, and prices today scored a further advance of 1c per dozen, with sales at 57c to 58c. There was no change in prices for new laid eggs, but the feeling, if anything, is easy. The receipts today were 144 cases, as compared with 890 for the same day last week, and 165 for the corresponding date a year ago.

We quote wholesale jobbing prices as follows:

Fancy new laid eggs.....77c to 80c
Strictly new laid.....72c to 75c
Cold storage selests.....57c to 58c
Cold storage No. 1.....53c to 54c

Towards the close of last week a much firmer feeling developed in Eastern poultry markets. Receipts of live and fresh killed have increased, but they are still very light, which is not unusual at this season. The demand, while not large, has been ample to absorb all offering. For this week's deliveries most dealers have advanced their prices for all varieties. Western Ontario dealers, who shipped live poultry to Buffalo last week, report they netted the following prices: Chickens, 29c to 31c, fowl 29c to 31c, cocks 27c, ducks 33c.

Some important sales of storage poultry have been affected during the past few days, for future delivery and domestic consumption. Some cars have changed hands in Montreal and Toronto; the sales reported are: 360 boxes milk-fed chickens at 44c, 400 boxes milk-fed chickens at 46c, and a few hundred boxes of broilers at from 35½c to 37½c.

Canadain exporters state they have received some correspondence from British importers of poultry, which indicate the possibility of business if ocean refrigerator space is available. So far no actual sales are reported. A report from the United States says several large blocks of frozen chickens have been sold for export. Part of these have already been shipped and the balance will go forward as soon as ocean refrigerator space is available.

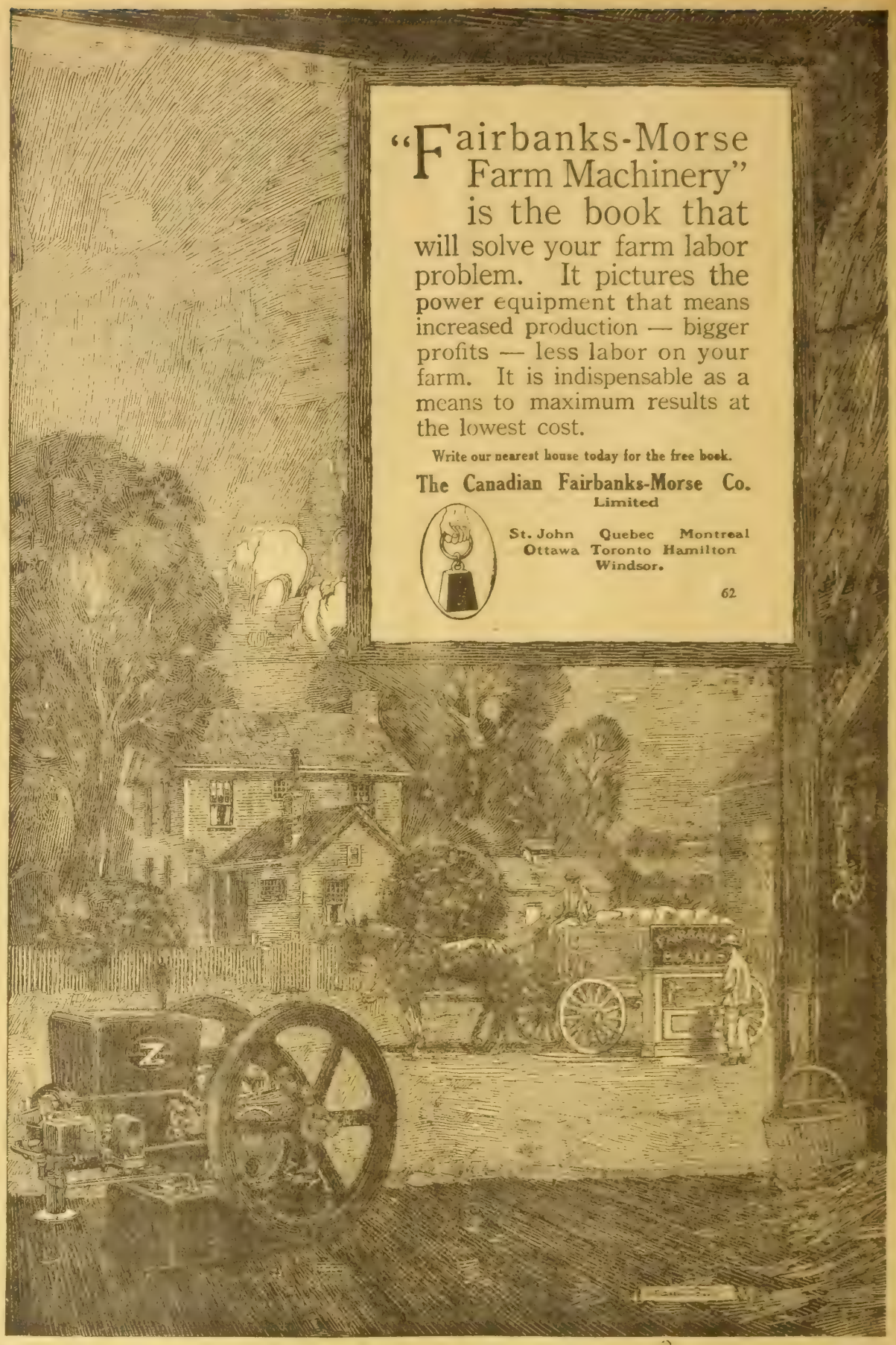
We quote wholesale jobbing prices as follows:

Choice turkeys, per lb.....42c to 43c
Lower grades.....32c to 33c
Milk-fed chickens.....32c to 33c
Ordinary chickens.....24c to 29c
Fowl .....24c to 28c
Geese .....25c to 26c
Ducks .....32c to 34c

The condition of the market for potatoes was unchanged, prices being steady, with a fair demand for small lots, and a fairly active trade was done in a wholesale jobbing way in Green Mountains at $1.90, and in Quebec white stock at $1.70 per bag of 90 lbs., ex-store, and car lots of Green Mountains were quoted at $1.75 to $1.80, and Quebec white at $1.35 to $1.45 per bag of 90 lbs., ex-track. The trade in Quebec turnips in a jobbing way is fair and prices rule steady at $1.25, ,and red onions are selling at $1.50 to $1.75 per bag of 70 lbs., ex-store.

DAIRY PRODUCE TRADE

Montreal, Jan. 18—The receipts of butter today were 41 packages, as


"Fairbanks-Morse Farm Machinery" is the book that will solve your farm labor problem. It pictures the power equipment that means increased production — bigger profits — less labor on your farm. It is indispensable as a means to maximum results at the lowest cost.
Write our nearest house today for the free book.
The Canadian Fairbanks-Morse Co. Limited
St. John Quebec Montreal Ottawa Toronto Hamilton Windsor.
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ompared with 126 for the same day ast week, and 164 for the correspondng date a year ago. There was an inreased demand from local buyers for reamery butter today and quite a ew sales of 50 to 100 package lots vere made within range of our quotaions. The tone of the market is very irm, and higher prices are looked for ater on by some in the trade.

We quote wholesale jobbing prices s follows:

Finest creamery	53c to 54c
Fine creamery	52c to 52½c
Finest dairy	45c to 46c
Fine dairy	41c to 43c

The receipts of cheese today were 30 boxes, as against 221 for the same lay last week, and 243 for the corresponding date a year ago. A feaure of the local trade of late has been the increased demand for colored goods and quite a few fair-sized ots have changed hands, which has ended to strengthen the situation, nd holders of such goods have adanced their prices to 27c to 28c per b.

The following prices are being pair by the Commission:

No. 1 cheese	25c
No. 2 cheese	24½c
No. 3 cheese	24c

New York, January 15.—Butter, unettled. Receipts, 11,850 tubs. Creamery, higher than extras, 67¼c to 68c; creamery, extras, 92 score, 66½c to 67c; firsts, 63½c to 66c; packing tock, current make, No. 2, 43c. Cheese, steady. Receipts, 1,185 boxes. State whole milk, flats, fresh specials, 37c; do. average run, 35½c to 36c.

THE CATTLE MARKET

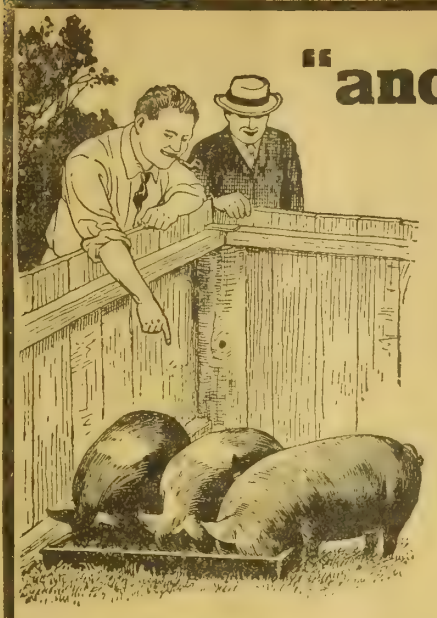
Montreal, Jan. 18—The feature of he market for small meats was the ontinued strength in sheep and ambs, and prices today scored a furher advance of $1.00 per 100 lbs., vhich was attributed to the smaller fferings and the keener competition etween local and American buyers or the same, and sales of Ontario ambs were made at $14.50 to $15, and ne extra choice lot brought as high s $16 per 100 lbs., while sheep sold t from $8 to $10 per 100 lbs. as to uality. The shipments of lambs to Boston amounted to 1,612 head. The one of the market for milk-fed calves was also stronger, and prices were $1.00 per 100 lbs. higher on account f the good steadp demand for this lass of stock, and sales were made of hoice veal at $15 to $16 per 100 lbs., nd stall-fed calves sold at $5 to $7. A weak feeling prevailed in the market for hogs, and prices in some instances were $1.00 per 100 lbs. lower han on Monday. The demand was nly fair, and sales were made from 17 to $18 per 100 lb. weighed off cars.

THE PROVISION MARKET

Live Hog Situation Unsettled and Weak at a Further Decline

Montreal, January 18.

A feature of the live hog situation was the decidedly weak feeling which prevailed in the Toronto market yesterday, and prices showed a decline of $2 to $2.25 per 100 lbs., since that day, week, with sales at $16.25 to $16.50 per 100 lbs., weighed off cars, and at $16 to $16.25 fed and watered. The Winnipeg market was unchanged at $15.50 per 100 lbs., for selected lots wighed off cars. A weaker feeling developed in the local market today in sympathy with the above, and sales in some instances were made at $1.00 per 100 lbs., lower than on Monday, and the range for selected lots was from $17 to $18 per 100 lbs., weighed off cars. There was no further change in prices for dressed hogs, but the undertone to the market was easy, with supplies ample to meet all requirements. The demand was only fair and chiefly for small lots owing to the unsettled condition of the market, and sales of country dressed sock were made at from $21 to $23 per 100 lbs.



"and they cost me less per pound gain"

CAN you imagine a manufacturer in the city feeding costly raw material into a machine without precise figuring of costs and the most careful selection? Can it possibly pay the "manufacturer" of bacon to feed hogs on the old-fashioned plan, without knowing the cost per pound gain? Decidedly not, in these expensive times.

Our experts have done the figuring for you. They have found out that certain feeds, combined according to known feeding values, will get a hog off to market in far less time, with more marketable, good, firm bacon on him, and at less cost per pound gain.

Monarch Hog Feed

is the cheapest feed you can buy—if you reckon by market results, and that is where your profits come from! Why try to figure out rations? Why worry about providing various feeds? Why waste precious time mixing up feeds? That was all very well when there was no such thing as Monarch Hog Feed available. Nowadays everything must be done expertly if it's maximum profits you want.

It's quality bacon that captures the best prices; Monarch gets the quality—good, firm, hard bacon—at less cost.

Monarch Hog Feed is a true balanced ration; it supplies every nutrient the growing hog demands—no more, no less. Its just right for maximum production, without waste of feed.

It has all the nutrient qualities of shorts, corn products and digestive tankage (rich in flesh-forming materials). Combined as a properly balanced ration they are easily digested; Monarch is palatable; hogs thrive on feeds they relish. Monarch can always be relied upon for best results.

Give Monarch Hog Feed a good, fair trial. Order a ton from your dealer; you can always depend upon getting it; should your dealer not be handling Monarch Feeds, send us his name and address, and we will see that you are supplied.

Monarch Dairy Feed
is a properly mixed balanced ration of oil cake meal and cotton seed meal combined with corn meal and bran; guaranteed analysis is 20% protein and 4% fat.

Sampson Feed
A general purposes feed with same ingredients as Monarch Hog Feed, excepting that oil cake meal is used instead of digester tankage; effective for both cattle and hogs; guaranteed analysis—10% protein and 4% fat.

The Campbell Flour Mills Co. Ltd., Toronto, Peterboro, Pickering

Canada Food Board License, 6, 7 & 8. 11

BEATTY BROS. READY FOR 1919

The annual convention of the Canadian representatives of Beatty Bros. held at Fergus, Ont., Head Office of the concern was one of the most successful in years. Thirty-seven firm representatives from all parts of Canada were present and the foundation was laid for an energetic campaign of "B. T." products in 1919. At a banquet attended by one hundred and ninety persons much enthusiasm was shown. Among those present were the representatives from the Maritime Provinces who have returned with the idea that the only thing to do for the firm is to make "B.T." sales in the Maritime Provinces in 1919 the biggest on record.

SARNIA FENCE CHANGES HANDS

There has been a complete re-organization of the Sarnia Fence Company. Messrs. M. D. and M. H. Pendergast have sold their interests to Mr. Wm. Lottridge and Mr. H. Banwell, of the Banwell Hoxie Co., Hamilton, and Mr. James Playfair of the Great Lakes Transportation Co. The new concern will be under the management of Mr. Lottridge, who has had a very wide experience in fence manufacturing.

GRIND TABLE SCRAPS FOR CHICKEN FEED

"Table scraps and kitchen waste are best prepared for feeding by running them through an ordinary meat grinder," says H. W. Sanborn, extension poultry husbandman, U. S. D. A. "After the material has been put through the grinder it is usually a rather moist mass, and it is well to mix with some corn meal, bran, or other ground grain until the whole mass assumes a crumbly condition. All can be fed that the hens will eat up clean, and if any of the material is left after one-half or three-quarters of an hour it should be removed. If allowed to lie it may spoil and would be very bad for the hens."

POULTRY MAXIMS

It is urged that all farmers and poultrymen adhere strictly to the following principal rules in handling their poultry and eggs:

1. Keep the nests clean; provide one nest for every four hens.
2. Gather the eggs twice daily.
3. Keep the eggs in a cool, dry room or cellar.
4. Market the eggs at least twice a week.
5. Sell, kill, or confine all male birds as soon as the hatching season is over, so as to produce infertile eggs. The male bird has no effect on the number of eggs produced..

Most of our happiness comes to us through our activities in putting and keeping out of our lives those things which would make us unhappy.

Eureka Potato Planter

Pays for Itself in Labor and Time Saved

One man and team with an Eureka Potato Planter needs no hired help to plant the whole crop. Whether you plant 4 acres or 400, the Eureka Planter will pay for itself many times over. Better than hand planting. Increases yield. Does 5 operations at once, automatically—accurately.

Opens furrow, drops seed any distance and depth, drops fertilizer (if desired), covers up and marks next row. **Furrow opens and seed drops in plain sight**—an equal distance apart, at uniform depth, with **absolutely no injury to seed.** Easy to operate in any soil, made of steel and malleable iron—assuring long life, light weight and few or no repairs.

Write for **free** catalog on this great line of potato planters—the largest line made. Sizes for 1 or 2 rows, with or without fertilizer attachment. **In Stock Near You.** A success for over 20 years. Whether you are a large or small grower **—write today.**

Send for Catalog

EUREKA MOWER CO., Box 745 Utica, N.Y.

FROST & WOOD CO., LTD ST. JOHN, N. B.

SPECIAL ENCOURAGEMENT TO PURCHASERS OF REGISTERED SEED

Farmers who contemplate purchasing seed grain for next spring's sowing should keep in mind the advantages which thew may realize by purchasing Registered Seed rather than seeed which cannot receive any official recognition. These advantages briefly are as follows:

1. Registered Seed is more reliable as regards purity of variety, freedom from weed seeds and ability to produce a strong vigorous growth.

2. Registered Seed may be cvpected to yield from three to five bushels more per acre than ordinary unselected seed of the same variety

3. Crops from Registered Seed mature more venely than do those from unselected seed.

4. Grain harvested from a crop grown from Registered Seed may in turn be registered providing it is up to standard, if not more than three generations removed from "Elite Stock Seed" and that it has been properly inspected both while growing and while in the sack prior to shipping. Since registered seed brings more per hushel than does ordinary seed, the financial advantage which may be realized from sowing this kind of seed is obvious.

The ability to have immediate progeny of Registered Seed recognized as above mentioned is a new departure but is one which should appeal strongly to the average farmer. It frequently happens that farmers who have a particularly well prepared field desire to procure for it a supply of seed of outstanding merit. While Registered Seed is shown on such a field the chances of harvesting an outstanding crop are speciall good. Where such a crop is harvested it is a distinct advantage not only to the farmer himself but to the country generally to have the cleaned seed recognized and handled for seeding purposes rather than to be used for feed.

Fafmers who sow Registered Seed next spring and whose crops are promising during the groging season should apply to the Secretary of the Canadian Seed Growers' Association, 114 Victoria Street, Ottawa, Ont., to have their crops inspected before they are harvested. This inspection of the growing crop is absolutely essential to an official recognition of the thrashed grain.

FISH MEAL AS A LIVE STOCK FOOD

In these days anything that will increase the available quantities of cattle food without decreasing the quality is of immense value. Experiments have proven that this is possible with fish meal, a food stuff that as yet is little known in this country but which is used extensively in Europe. Fish meal should not be confounded with "fish scrap," "guano," or "pomace" or other forms of fis hproducts used as fertilizers. The fish meal used is more carefully treated and includes, or should include, only fresh, sound fish, or fish offal. The value of fish meal as a cattle food is explicitly set forth in four-page pamphlet No. 17, issued by the Department of Agriculture, Ottawa, and which can be had free on application to the Publications Branch. Results of experiments made at the Central Experimental Farm show that fish meal, where available, is a suitable concentrate for cattle sheep and for hogs; that fish meal contains 55% to 60% of protein, and over 15% phosphate of lime; that if of good quality and properly fed with other meals and with roughage, it is palatable, wholesome, and a good feed for young growing stock and also for milk production; and that if given a fair trial and used in proper proportions it should become one of the most popular and profitable protein supplements for swine feeding.

Growing Old Together

THIS aged couple, mellowed by time and the experiences of life, are happily growing old together.

They are happy because they are healthy. Life is still full of interest to them, and they are wide awake to new ideas.

These are the kind of old people that everybody likes. For, in spite of the years, they are cheerful and optimistic.

It is only natural that the blood should get thin and vitality wane as age advances, but there are ways of keeping up the quality of the blood and maintaining health and vigor.

Very many men and women have found in Dr. Chase's Nerve Food exactly what they need to restore energy and strength and keep them healthy and happy.

As an example Mr. Stephen J. Leard, North Tryon, P.E.I., writes: "At seventy-five years of age my heart gave out and became very irregular and weak in action and would palpitate. My nerves also became weak, and I could do nothing but lie in bed in a languishing condition, losing strength and weight. In that condition I began using Dr. Chase's Nerve Food, and am cured. Had I not obtained this treatment I would now be in the box with the roof over my nose. At eighty-one I have an energy which means go, and I am writing this letter so that old people like myself may prolong their health and strength by using this great medicine."

There can be no doubt that this treatment contained exactly what was required to build up Mr. Leard's system.

We are constantly receiving so many letters of this kind that we can, with the greatest confidence, recommend people of advanced years to put Dr. Chase's Nerve Food on trial, as a means of restoring and maintaining health and vigor.

Here is another interesting letter. This time from a lady:

Mrs. Joseph Lalonde, Hydro Glen, Ont., writes: "I have to thank you very much for what your medicines have done for me, especially the Nerve Food and Kidney-Liver Pills. I was so run down and nervous last summer that I was in bed most of the time, unable to do any work. I have also been troubled with my kidneys for over twenty years, and tried every doctor I knew of without any permanent results, but I can say that Dr. Chase's Nerve Food and Kidney-Liver Pills have made me feel quite different. Since taking this combined treatment I have been able to do my housework, and although I am now 76 years old, I feel better than I have for years."

("I know Mrs. Joseph Lalonde, and believe her statement regarding Dr. Chase's medicines to be true."—W. P. Flannery, Postmaster.)

Dr. Chase's Nerve Food, 50 cents a box, 6 for $2.50, all dealers, or Edmanson, Bates & Co., Ltd., Toronto. Only the genuine bears the portrait and signature of A. W. Chase, M.D., the famous Receipt Book author, on every box.

CORRECT WAY TO WRITE A CHEQUE

It is interesting to notice how different people write cheques. Some are very careless about, taking no precautions whatever to protect themselves against the cheque raiser, the man or woman who makes the cheque call for more than it was intended. Experts say such carlessness results in the loss of millions of dollars annually to banks and individuals. In writing a cheque always take plenty of time and do it right. In filling in the space for the amount in numerals, make the figures plain, beginning close to he printed dollar mark so as not to leave a space for the insertion of another figure. Then write the amount in words, beginning with a capital at the left hand end of the line and after the amount draw a heavy line from the last letter of the word "dollars" at the right. If these directions are followed the cheque-raiser will not find it easy to take advantage of you should he gain possession of your cheque.

The Ontario Winter Fair is looking around for a new home where it will be able to expand and become International in scope. The proposed requirements are for a buliding that will provide accommodation for the following:

Horses	1500
Beef Cattle	600
Dairy Catttle	600
Sheep	600
Swine	600
Poultry	10000
Arena Seats	7000
Lecture Room	500

Dairy produce, 150 x 250 feet; seeds 175 x 250 feet; Judging Ring, 100 x 200 feet; and Dressed Meat and Killing Rooh, 100 x 200 feet.

FORD PRICES

The policy of the Ford Motor Company of Canada, Limited, to sell its cars for the lowest possible price consistent with dependable quality is too well known to require comment. Therefore, because of present conditions there can be no change in the price of Ford Cars.

Ford

Runabout - - -	**$ 660**
Touring - - -	**690**
Coupe - - -	**875**
Sedan - - -	**1075**
Standard Chassis -	**625**
One-Ton Truck Chassis	**750**

These prices are F. O. B. Ford, Ontario

All prices subject to war tax charges, except truck and chassis.

Ford Motor Company of Canada, Limited

FORD - - ONTARIO

THHE "FREE MARTIN" CALF

From time to time enquiries on the subject of "free martins" reach this office and biological explanations on their infertility are asked. There is yet a good deal of controversy even amongst recognized biologists, regarding the fertility of infertility of identical or nonidentical twins.

The cow generally produces only one ovum at each oestrum period; if two are produced and both are fertilized, then there is the condition of twins that are onidentical or not so very like each other in color and shape, and may or may not be of the same sex. Occcasionally, however, a single ovum will divide into two halves, like an egg with two yolks, and from each half a young animal is produced. In such a case identical twins is the result. Occasionally only amongst these is to be found a "free martin" or non-breeder. Prior to researches of Hart the "free martin" was believed to be an immature female a twin bull, but he has shown that one is a perfect male and the other an imperfect female, with often the external gentials like a female. Only on rare occasions is there found a "free martin" a twin to a perfect female.

The question of twins that are identical having only one fertile is not to be taken as a rule by any means. The writer heard it asserted that of twin bulls only one is normal and therefore, fertile, but that is a mistaken idea and one that any experienced cattle breeder can easily disprove. In searching the history of cattle breeding it will be found that many twin bulls were born and all of them fertile. The writer also knows of a cow that produced twins three times, all heifers, and all fertile and of twins of opposite sex both fertile. A "free martin" i seasily known! As a rule they never come in heat and their infertility can be noted by the time they are 15 to 18 months old. Either twin bulls or twin heifers are as likely to breed as are those that are calved at a single birth. Many eroneous opinions are abroad about the fertility of twin bulls, but men with experience and observation readily detect the infertile calf, while the average man will discover it practically before the animal reaches maturity.

The Canada Food Board has been informed that field and garden seeds have been removed from the restricted export list of the United States, and that American shippers in future do not require licenses for shipments of seeds coming into the Dominion.

The removal of United States restrictions on flour also extend to Canada.

The Scrub Sire

Canada's Great Handicap in the Race for the European Meat Markets

CANADIAN Cattle have, during the past few years, increased in numbers to a point where advantage may be taken of the tremendous market for beef opening up in Europe. During the war, our exports grew, but to maintain and increase our present trade means that we must make a determined effort to bring about a general improvement in quality, and to provide in volume, beef of the standard demanded by this market. To effect this improvement, it is necessary to

Do Away With Scrub and Nondescript Sires

The Scrub Sire has undoubtedly done much to prevent a more healthy development of Canadian Agriculture. He is responsible for economic losses amounting to millions of dollars annually, for lean pocket books, unpaid mortgages and for much of the discontent upon many farms.

Good bulls are properly cared for, but Scrubs generally run at large and roam the country at will. By-laws will not keep them within bounds, fences are almost valueless and the only effective remedy is castration. Many men who would be raisers of good cattle are powerless to prevent their inroads and become discouraged. They become a very real public menace and a heavy "drag" upon the Live Stock Industry. Every intelligent farmer to-day owes it to himself and to the cattle business of the country to

Use a Pure Bred Bull— Blood Counts!

"A good bull is more than half the herd, but a scrub is mighty near all of it." This statement made by a practical stockman is correct. In all animal life the tendency is to revert to lower levels, but by the use of good sires this is not only counteracted, but improvement will result because of the impress the sire makes upon the progeny. If the sire be a Scrub the tendency to go back is intensified and in a very few generations herds deteriorate and become absolute nondescripts.

That "Like Tends To Beget Like" has been proved beyond doubt. Many great herds carry the marks of some noted bull. Conformation, thickness and evenness of flesh, uniformity and quality may be stamped upon progeny by a good sire whereas the very opposite characteristics follow in the path of the Scrub.

The world's valuable markets are captured and held by cattle bearing the characters mentioned. The great beef-producing countries are the shrewdest and keenest buyers of high class bulls. The Argentine, one of our chief competitors, does not hesitate to pay the price and as a result is able to hold annually the greatest bull show in the world. They are valued because their progeny produces a high quality beef product which is in demand upon the world's best markets. It has been demonstrated that "It Pays to Pay for Quality." Canada's future depends largely upon the development of the Live Stock Industry, consequently, The Scrub Sire Must Go. Therefore,

conserve and build up the herds—improve quality—finish thoroughly.

Live Stock Branch

Dominion of Canada Department of Agriculture

OTTAWA, CANADA

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 24. SUSSEX, NEW BRUNSWICK, FEBRUARY 4, 1919. Number 9.

Limestone and Slag as a Factor in Clover Growing

By W. Saxby Blair

The ability of legumes to secure nitrogen from the air is now so generally recognized that progressive farmers avail themselves of every opportunity to grow such crops wherever the maintenance of nitrogen is of importance.

In a series of tests conducted by Dr. Shutt at the Experimental Farm, Ottawa, it was shown that an area seeded to oats on which clover had been seeded on part of it, yielded the following years 10 bushels more oats per acre, and the year after 11 bushels more oats per acre than the adjoining plot not seeded to clover. That is, the clover growth resulting from seeding on May 5th to October the same year and plowed under was accountable for 21 bushels increase in the yield of oats in the two following years.

Dr. Shutt also found that a plot of ground on which the clover grown was allowed to decay and turned under every two years and reseeded, gained 308 pounds of nitrogen per acre in 5 years, or over 60 pohnds each year, or equal each year to the nitrogen contained in 400 pounds of nitrate of soda, costing at the present time approximately $6.00 per hundred, or equal in value to $24.00 per year at present prices.

A 35 year test conducted at the Pennsylvania Experiment Station with a rotation of corn, oats, wheat and hay, the hay being a mixture of clover and timothy with clover predominating in favorable years, and by using what would correspond to 300 lbs. acid phosphate and 200 lbs. muriate of potash per year the crop produced averaged 52 bushels corn, 42 bushels oats, 19 bushels wheat and 2 tons hay per acre and the yield not decreasing. The explanation is that the nitrogen is furnished from the air through the clover nodule organisms on the roots. In a similar test conducted at Wooster, Ohio, covering a period of 25 years cropped and fertilized similar to the above, it was found the crops removed contained 1100 pounds of nitrogen. No nitrogen having been added, the nitrogen must have been largely supplied through the clover.

Tests made at the Experimental Station, Kentville, have revealed the fact that on many of our lands clover cannot be grown without an application of limestone or slag. An area of 8½ acres was divided into seventeen one half acre plots, the whole being fertilized alike as to respective duplicate areas, except that ground limestone was added to one, slag to another and slag and limesone to another, and one plot left in each series without any of these materials. The land was seeded to Banner Ooats and grass seed in 1917 at the rate of 8 pounds Red Clover, 2 pounds Alsike Clover and 8 pounds Timothy per acre. The average yield from the plots was as follows:—

EFFECTS OF AN APPLICATION OF 4 TONS LIMESTONE PER ACRE

The above illustration shows the effect of an application of 4 tons limestone per acre applied in 1914 to an area where it was proposed to grow alfalfa. This is a poor sandy area, which was never manured and the crop was not large. The alfalfa failed to winter and the land was seeded to wheat with clover and timothy. The limed area produced practically clear clover, and the unlimed area clear timothy, although each were seeded with the same seed. The product shown was taken from the same sized area.

	Yield per Acre Straw lbs	Grain bus	lbs
Slag ½ ton, average of 4 plots	2898	42	22
Slag ½ ton, lime 2 tons, average of 4 plots	3119	44	7
Lime 2 tons, average of 4 plots	2570	42	15
Check, average of 2 plots	1995	39	31

There was a striking difference in the yield of hay in 1918 which was as follows:—

	Yield per acre lbs
Slag ½ ton, average of 4 plots	3996
Slag ½ ton, lime 2 tons, average of 4 plots	4615
Lime 2 tons, average of 4 plots	4560
Check, average of 2 plots	2480

It would appear from the above that in addition to slag furnishing phosphorus, it is valuable because of its lime content.

The clover plants on the check plots which were unlimed and on which no slag was used but otherwise treated in a similar way were poor, and lacked vigor, the increase in yield being due to the clover growth entirely. The yield from the slag plots over the check plots was 1516 pounds, and the limed plot was 2080 pounds greater than the check plot.

Interesting results were obtained in an orchard fertilizer experiment where 150 lbs. of nitrate of soda was applied per acre, and in addition on one plot acid phosphate at the rate of 350 pounds was used, and on another 500 lbs. of slag, and one plot with 500 lbs. slag and no nitrate of soda, the fertilizer being applied in 1913, 1914, 1916 and 1917. The yields were as follows:

	Slag	Nitrate of soda & slag	Nitrate of soda & acid phosphate
	bus lbs	bus lbs	bus lbs
1913, Potatoes	160	196	195
1914, Oats	33	54 4	58
1915, Hay	6987	9521	4900
1916, Potatoes	183	198	173
1917, Wheat..	19	26 30	17
1918, Hay	2730	3660	1485

The results would go to show that the tendency of acid phosphate is to make the soil acid and unsuitable to clover. The slag on the other hand, owing to its lime content, evidently makes the soil suitable for clover. Certainly the poor clover yield was not due to lack of phosphorus, as the 350 lbs. acid phosphate would furnish as much of this element as 500 lbs. of slag. It should be kept in mind that no manures had ever been used on this soil, and this represents the fertilizers applied and crops produced since it was cleared from forest.

In 1914 a series of tests were started using five different combinations of fertilizers induplicate plots, limed and unlimed, and in addition unfertilized plots limed and unlimed were left as a check. The ground limestone was applied at the rate of 2 tons per acre. The largest amount of fertilizer used on any of the plots did not exceed 550 lbs. per acre. The fertilizer and lime were applied in 1914 and 1917 only.

Owing to the crop being so poor in 1916, the land being a sandy loam containing very little humus, it was considered advisable to use 15 tons stable maure per acre over the whole area, treating each plot in the test alike. This was applied in the fall of 1916, and the fertilized and limed plots were treated in the spring of 1917 in the same way as in 1914 The yield given below is the average from the fertilized limed, and fertilized unlimed plots The crop produced was as follows:—

		Yield per acre bus	lbs
1914	Potatoes, limed and fertilized	86	45
	Potatoes not limed but fertilized	76	13
	Potatoes limed and not fertilized	67	35
	Potatoes not limed and not fertilized	55	55
1915	Oats, limed and fertilized	38	14
	Oats, not limed but fertilized	31	24
	Oats, limed and not fertilized	32	27
	Oats, not limed and not fertilized	30	15
1916	Hay, limed and fertilized	1494	
	Hay not limed but fertilized	666	
	Hay, limed and not fertilized	1120	
	Hay. not limed and not fertilized	720	
1917	Potatoes, limed and fertilized	329	18
	Potatoes, not limed but fertilized	302	25
	Potatoes, limed and not fertilized	313	25
	Potatoes, not limed and not fertilized	251	50
1918	Wheat, limed and fertilized	2626	30 14

		Straw lbs	Grain bus	lbs
1918	Wheat, limed and fertilized	2625	30	14
	Wheat, not limed but fertilized	1996	23	48
	Wheat, limed and not fertilized	2260	29	50
	Wheat, not limed and not fertilized	1980	19	30

(Continued on page 555)

N. S. Fruit Growers Annual Convention

The big meeting of the year in the Annapolis Valley is the N. S. Fruit Growers Association. Hither, during the month of January, flock all the more progressive growers from the boy of sixteen to the veteran of four score or more, all eager to learn the latest results in successful fruit raising. This gathering has become the recognized clearing-house of the year's accumulated experience of the best growers in the Valley, and the results of the different Experiment Stations, both Provincial and Federal that are carrying on work among us.

The talent gathered this year oy the secretary to lead the discussions was of a very high order, and the interest was well maintained throughout the entire session.

The two speakers from a distance who attracted the most interest were Mr. Samuel Fraser of Genesco, N. Y., and Mr. C. W. Baxter of Ottawa, the new Dominion Fruit Commissioner. Other speakers were Principal Cumming of Truro; Profs. Blair, Saunders, Brittain, each of whom contributed his share to make the Association one of the most notable in its long history.

President F. H. Johnston in his opening address called attention to the lifting of the embargo against apples entering the British market, and spoke most hopefully of the fruit industry. On account of the high railroad rates which our Western competitors are obliged to face, N. S.'s close proximity to the seaboard, the temporate climate and excellent soil conditions which this province enjoys, and in view of the ncreasing difficulty with which apples are raised in all countries, he thought that there need be only the largest optimism over the apple situation, closing his admirable address by urging all to do their utmost to increase their production during the coming year.

The new Fruit Commissioner who made a splendid impression upon all in this his first visit to our Association in his official capacity, expressed a hope of being able soon to inaugurate such a system of inspection as would enable the grower to sell all of his fruit on an f. o. b. basis.

This announcement was received by all present with the greatest of satisfaction, because the lack of such inspection has been a serious handicap to the fruit industry in the past.

A very important paper on Commercial Strawberry Growing was read by Mr. Manning Ells, who after seven years of most efficient service as Secretary of the Association, is now retiring on account of other more pressing business duties.

Mr. Ells called attention to the fact that the demand is increasing each year, while the supply is yearly decreasing; that N. S. crop is a little earlier than N. B.; that strawberries can be easily grown and that there is now a better distribution than formerly.

Mr. Ells paper, though at the end of the session, was well received as coming from a man who perhaps has done more than any one else to put strawberry raising on a safe foundation.

A large portion of one session was devoted to a discussion of the proposed raise on express rates, and other transportation problems.

The discussion was most opportune because of the presence of Mr. Geo. E. Graham, the General Manager of the D. A. R., whose interest in the work of the Association is very keen.

After a full and frank discussion of all the points involved, Mr. Graham answering all questions put to him in a most courteous manner, a committee was appointed by the Association, whose duty it shall be to investigate all freight rate unequalities, and have them adjusted as soon as possible.

In the matter of express rates, notice to advance, which to the extent in many cases of 50%, has been given by the erpress companies. A strong committee was appointed to prepare the Fruit Growers case and forward it to the Railway Commission for their consideration with a view to a more equitable adjustment.

But the Association is sustained more especially because of its educational features; it's members are more largely concerned at present with the production of a first-class commercial product, and are content to leave the problems of transportation and the securing of better markets, etc., to organizations whose particular business this is. Hence the chief interest of the Association centres about the deliverance of our spraying specialists, since spraying is seen to be the most difficult problem which confronts the successful fruit grower.

This year the Spray Calendar as issued by Prof. Britain and Saunders, makes a most radical departure. So much damage has been done to the fruit industry by the Lime-sulphur, that it has been wholly abandoned as a spray except as a third spray, where a modification of soluble sulphur is recommended instead, on account of the russetting which Bordeaux causes at this time.

But even the old Bordeaux has been modified so that instead of using the well-known 4-4-40 mixture, the 2-10-40, now known as the Thompson mixture, is recommended. The hope was expressed by Prof. Saunders that the spray calendar as now worked out will remain substantially as it is for a number of years.

The resolution of last year urging upon the Government the need of a law making compulsory the grading of potatoes, was reaffirmed.

The Tractor also came in for a considerable attention at the Association a number of short addresses being devoted to it. The consensus of opinion seemed to be that the tractor had not get reached a stage of development where it was a safe proposition for the average orchardist.

A very pleasing feature of the Association was the presentation to the Association of a gavel made from the trunk of an old French apple tree. The gavel was made in the form of an apple, and is a most welcome addition to the paraphalia of the Association, as up to this time the meetings have had to be conducted without the use of one.

Col. Chippy Spurr, though well past the four score mark in life, was present at all the sessions, participating in many of the discussions.

All regretted the absence of veteran Fruit Grower Robert Starr, who for more than half a century has scarcely missed a meeting, was not able to be with us.

The Association elected for its officers for the ensuing year:

President—Rev. H. S. Shaw.
Vice-Pres.—V. B. Leonard.
Secretary—F. W. Foster.

ORCHARD CULTIVATION

By Prof. W. S. Blair, Experimental Station, Kentville, N. S.

The management of orchard soils so that the trees can do their best, requires no small amount of thought, and probably no part of our orchard work has been given so little thought as this during the past few years. It seems there is no one best way of managing an orchard. There may be several good ways, and because a certain method may suit certain conditions best, does not mean that such a method can be adopted universally and prove successful. If we could but realize that conditions do vary for every person who grows fruit, and that there must, therefore, be more or less diverse ideals, diverse mthods and diverse results, it would help toward a better understanding of the cause for the many local differences in respect to methods. It seems reasonable, however, that there should be some certain practice, if followed up consistently, which will prove most satisfactory over the greatest range of orchard soils and under varying climatic conditions.

It may not matter much whether clean cultivation, cultivation and cover crops, or sod mulch is practiced in orchard management, provided certain conditions are met. The first thing, therefore, is to determine the conditions which are best suited to the tree. We all know that heat is necessary for well colored and well matured fruit, and that some varieties require much more heat than others to mature properly, heat being in some cases a determining factor as to whether a variety is a commercial success in certain places. Soil temperature may be modified by the moisture condition of the soil and for that reason a variety may do better on some areas than on others, the atmospheric temperature being the same in both cases.

Soil moisture as we well know, is a large factor in the success or failure of any crop. Not only has moisture an important part to play in the liberating and transporting of plant food, but when reduced below a certain point plants suffer as do animals for the want of it.

You know from your own observation that plants under certain atmospheric conditions will transpire much more moisture than under others; on dark, cool, calm days it is not nearly so great as during bright, hot, windy days. You also know that the moisture condition of your land is determined to a very great extent by the nature of the subsoil; that in general a cool, heavy, close subsoil is not satisfactory for fruits, and that, on the other hand, an open subsoil is unsatisfactory. We have very little of the latter in this Valley, for the most of our subsoil, while gravelly enough to permit a good drainage, is mixed with finer materials, giving good water holding capacity and favours a good moderate capillary flow of soil waters from the subsoil to the surface, giving what might be termed ideal fruit soil. It is this condition, coupled with natural wind protection, both of which influence the moisture supply which makes this Valley a good fruit country.

In the growth of fruit trees as in other plants, two distinctive forces are at work, one the vegetative, the other the reproductive. Any checking in the vegetative growth tends to reproduction, but, at the same time vegetative vigour is necessary if satisfactory production of fruit is to take place. Excessive vegetative growth tends to wood and foliage growth at the expense of reproduction. In the case of an orchard making an excessive vegetative growth, a June plowing to the extent of a severe root pruning may throw the orchard into fruiting, wheeras such plowing in an orchard low in vitality may prevent the tree from secuirng the nourishment necessary to develop vegetative growth sufficient for proper production development. In addition to the building up of wood tissue, and the development of twigs and buds, together with reserve food material for another year, fruit is also being produced by the tree. Therefore, to encourage such growth as will maintain vegetative vigour, give good strong fruiting buds for the next year's crop, and well developed fruit all at the one time is no small undertaking, and to devise a set of rules to guide one is a difficult task, for with variable factors, such as soil temperature, soil moisture, amount of plant food, insect and diseases, any one of which may modify results, the problem becomes complicated, hence the aim should be to preserve an even balance by attention to certain operations so that moderate and constant vegetative vigour may be maintained as fully as possible, and this in turn will likely give moderate and constant production. It is well known that moderate vegetable growth is necessary if we are to have healthy branches to produce strong fruit spurs to carry and nourish large crops of well developed apples.

Nature has arranged matters so that the different processes in plant development may occupy certain periods. The most active vegetative growth—the development of leaves and twigs—takes place in the early spring, and the development of fruiting buds takes place later, along with the storing up of the materials necessary to start the tree into growth the following spring. It can quite readily be seen, therefore, that any retarding of development in the spring may mean a serious loss in retarding development of the reproductive processes in the late summer, hence the importance of aiding nature that vigorous growth may take place during the normal growing season, so that the later processes which make for production may continue unhampered.

The fact that a fruit tree has deep running large roots may lead up into the error of supposnig we can grow a crop on the surface soil and not interfere with the development of the tree. That the coninuous cropping and removal of an early growing crop such as grass is decidedly unsatisfactory in ultimate results as to fruit we know to be true. Yet it is possible that a much heavier crop of millet or other crop may be secured from the same area during the late summer, without lessening the crop and may in fact, increase ultimate production, the reason being that in the first case we have checked the vegetative growth at the very time it should have been stimulated, and in the other have helped to check vegetative growth when a check was desirable and aided the reproductive processes, so, while it may not be desirable to crop an orchard in the early summer, it may be desirable to do so in the late season, and it is because of this fact that early cultivation followed by covercropping is practiced.

Those of you who have had to do with garden crops know something of the effect on the crop of an early hoeing, even if no weeds are present. You work up the soil and in a day or two you are surprised at the growth.

You have aided nature and produced conditions of aeration, heat and moisture suitable for the plant and soil organisms which aid in plant food development.

The first fundamental necessity, therefore, in orchard practice is an early working of the soil. It is a fact that many of our growers delay this operation too long in the spring, notwithstanding the fact that orchard lands usually are fit to work before other farm lands. As stated at the start there may be cases where late plowing will work to advantage, but on general principles it is wrong entirely and cannot, except in certain cases, be carried on to advantage.

Early cultivation promotes active root development because of the soil earlier becoming warm; air penetrating it more deeply, and more uniform moisture conditions having been brought about. Fibrous roots are formed very earily in the spring from materials stored up in the tissues of the tree the previous season, and surely there is no advantage in destroying these making it necessary for the plant to draw upon materials which should be used for other purposes to develop new roots. It is natural for this early fibrous root growth to be made near the surface for there is the availabe food, heat, and air suitable for early spring growth, hence delay in spring plowing may defeat the very object in view and the orchard be no better than if not plowed at all.

Moderate plowing is best and it should not be more than four inches close to the base of the tree, otherwise bracing roots will be injured. I do not see that much of the close plowing practiced is desirable. True it makes the plantation look nice, but to clip the grass several times close around the tree would not take much time and would look about as good. However, I like to see things looking nice and you can plow close, but do not plow as deeply as you generally do. The only reason why so many of your orchard trees are leaning is that you have cut off th bracing roots. The side from which a bracing root has been cut, or injured, is affected thereby, owing to normal sap flow having been cut off. I believe there are many orchards that would be better producers if sod mulch was practiced in place of deep late plowing practiced. This does not say, however, that the sod mulch is the best method, if plowing and cultivating is properly done.

The second fundamental necessity in orchard practice is shallow cultivation after plowing. It is necessary to cultivate deep enough to produce the fine earth mulch. It should be done often and shallow about two inches. You thereby give the feeding roots a chance to get to where they can get the food you have supplied. It does not make any difference to you if later on these roots die in the surface soil for want of moisture, because in going after what they were intended for early when the tree wanted it the most, they performed their part.

It was in 1904 that I pointed out in an address before this Association the importance of early spring cultivation. In your 1905 report you will find experimental data secured during that season, showing that land plowed on May 13th, contained on August 4th, 15.10% of moisture and that plowed May 26th, two weeks later, cotnained on the same date 9.49% of moisture, a difference in favour of early plowing of 5.61%, or 132 tons more water to the acre to a depth of 14 inches. We are told by those who have studied the matter that when the soil moisture falls below 12% the tree fails to function properly. Early plowing may not appear to you to amount to much, and certainly in seasons of heavy rainfall it would not amount to as much as in dry seasons, but it is because we cannot determine the character of the season beforehand, and that the season influences subsequent crops that we should not take a chance, but adopt what will in the long run give the greatest returns.

Experiments conducted by the writer in 1905, the year before going to Macdonald College, indicated a soil moisture content of 8.08% on July 17th, where clover was growing, as compared with a similar plot on which the clover was cut when 12 inches high and allowed to remain as a mulch, which on the same date contained 11.77%. An adjoining plot at the same date cultivated four times to June 15th and seeded to a cover crop contained 13.89%, and another plot cultivated 6 times and seeded to a cover crop on July 20th contained 15.65%. The difference between the clover uncut and clean cultivation on July 17th was 7½%, on the 2nd August it was 8.25, August 15th 8.20, ranging on August 30th from 5.91 on the sod to 14.11 on the area seeded to cover-crop July 20th, a difference of 213 tons in favour of cultivating, and yet the rainfall during June and July was nearly 5 inches. The point is, can your fruiting trees do as they should if the soil contains only 5% of moisture, and is it possible for the fruit buds to be developed and the fruit as well under such conditions? Nature will develop the fruit because the natural thing is to develop seed so that the species may carry on. So I say, do not take a chance, but rather adopt methods which are fundamentally correct from every angle you may look at it, and I may say the only method we can pin our faith to covering a wide range of conditions.

I have no quarrel with the sod mulch man, but, as pointed out above, in the case of the clover growth cut when 12 nches high on June 16th and again July 6th and left on the ground as a mulch, the moisture content of the soil on August 15th was 5.64, as compared with 14.11 on the area clean cultivated to July 20th, a difference of 225 tons of water to the acre to a depth of 14 inches. Had there been a heavy mulch I can quite readily understand that the moisture conditions would have been different, for without a doubt the success of sod mulch is largely depndent upon the mulch supplied, in this case it was equal to 2½ tons of hay, but this was not sufficient to give the protection necessary to prevent the drying out of the soil. The success, therefore, of mulching, provided sufficient plant food is supplied, is dependent largely upon the control of the moisture supply. If reasonable water supply is assured there is no good reason why it cannot be practiced, but too light mulching may not give proper summer moisture, and if too heavy, the too abundant fall moisture may prove injurious. The natural moisture conditions of the soil, or its ability to obtain a moderate supply by cappilarity, is a big factor. I have in mind two orchards at Abbotsford, Quebec, both owned by one man and situated on boulder soil where it was about impossible to cultivate and where the practice of cutting the grass with a scythe several times was followed. The upper one had not been profitable. The low r one was profitable. One had a stunted, ill-nourished appearance and the other looked healthy, and yet of the two the upper orchard had been fertilized the best. I ventured the suggestion that his whole trouble was due to lack of summer moisture in the upper orchard, and to find out took with me several soil samples to a depth of 12 inches on the middle of August, to find out the moisture content. The analysis revealed the fact that the lower orchard contained 16.42% and the upper one 8.21% of moisture. Another case I have in mind is a small orchard from which grass was always cut, yet which remained healthy and productive, and the soil of which was always moist. Along the edge of this orchard a small stream flowed continuously feeding water into the soil, making up for the loss of moisture due to the drying out resulting from the growth of the grass and trees, and giving ideal moisture conditions for growth. I mention these observations to point out that situation may have a lot to do with the success of a method of orchard management.

A five years test conducted by Professor U. P. Hedrick of the New York Experiment Station, comparing the sod-mulch and tillage methods, shows that the cost of production on the sod mulch was $53.75 per year and on the tilled $76.06, an advantage of $22.31 in favour of the sod mulch, but the net income from the sod-mulch was $71.52 and from the tilled acre $110.32, an advantage for tillage of $38.91.

In tests made in August at Macdonald College the soil under a mulch so heavy that no grass grew, contained 18.12% of moisture, and the adjoining plot in grass from which the grass was cut when 6 inches high and allowed to dry, but which gave very little protection as a mulch, contained 11.95%, and the plot allowed to grow and cut for hay contained 6.11%. A plot cultivated and seeded to crimson clover contained 16.16%, and the clean cultivated plot without cover crop 16.31% of moisture. The old orchard of Fameuse, never cultivated and the grass always kept cut every two weeks with the mowing machine, and lightly dressed with manure each spring, contanied 10.84% of moisture at the same time.

It should be kept in mind that, in addition to moisture removed by the growing plants, large amounts are lots from the surface of the soil by evaporation. The principal object of cultivation is to conserve this and, at the same time, of course, prevent growth of weeds or grass which would not only take up moisture but plant food as well. It will be seen at once that an orchard with a dense top throwing much shade would materially lessen the evaporation from the surface soil, and for this reason the problem of moisture control may be quite different in various orchards.

The matter of cover-cropping must be considered if we are to obtain best results. As pointed out, it may be objectionable to have excess of moisture late in the summer, for late vegetative growth may be the result. The cover crop will prevent this and, at the same time, hold excessive plant food which might be lost during the late fall, and produce material necessary to turn under to form humus. Too early seeding of a cover-crop may not be desirable. In one instance a cover crop seeded June 15th seemed to dry out the soil too much early in August, the soil on this plot containing only 7.87% of moisture, whereas a similar cover crop seeded July 20th reduced the moisture to only 14.11%. It should be kept in mind, however, that the soil on the late seeded plot was cultivated on July 6th and 20th, which of itself would help to retain the moisture. The fact is, nevertheless, that cover crops have a very drying effect on the soil, and it is because of this fact that they are so valuable in helping to check late growth and promote better ripening of the wood and maturity in fruit buds. Results of tests at Macdonald College show the following moisture cotnent of soils late in September seeded to various cover crops at the same time:

No cover crop	14.9
Crimson clover	12.7
Red Clover	12.3
Timothy and Red Clover	11.9
Buckwheat	11.6
Winter Rye	11.6
Rape	10.1
Oats	10.0
Oats and Clover	10.0
Millet	7.24

To reduce the moisture in soils during June, July and early August is not wise, as it not only prevents proper nourishment, but as a result of the drying out of the soil, the soil temperature is raised to a point that prevents the roots from functioning properly, and a serious check to the tree results. To reduce the moisture content in September as pointed out, may be of great advantage, as usually there are excessive rainfalls at that time, and an excess with the ground warm may cause an undesirable second growth, particularly if the trees have been checked too early, and the wood prematurely ripened by dry weather during July and early August. The time for seeding a cover crop may vary according to the crop used. It seems unwise to seed before the 15th of June in any case, and seeding later than the 15th of July is usually not advisable.

It would appear from work done by the writer at Macdonald that red clover seeded about the middle of June is a good practice. This crop requires a long period to get started and if seeded late makes very little growth, but if seeded in June at the rate of 8 to 10 pounds per acre, a strong growth can usually be had by fall, and as for collecting nitrogen, it is the best of all the crops I know of. As stated to your Association two years ago, an application of 2 tons ground limestone per acre is necessary on most soils to produce conditions suitable for its growth. Crimson clover makes rapid growth and seeded at the rate of 15 to 20 lbs. per acre early in July will give a heavy math of material for plowing under in the fall. Vetch is one of the standard cover crops and it certainly has many advantages. It will grow on soils much more deficient in lime than the clovers, and will start under more unfavourable soil conditions as the seed being large it can be harrowed in more deeply to where there is sufficient moisture to germinate the seed at once. Seed is difficult to get at reasonable prices at present, owing to the former supply from Russia having been cut off, but it has the advantage of being a crop from which we can get our own seed by seeding a small area early in the spring. It is usually seeded at the rate of one bushel per acre.

Buckwheat is the crop most generally used and it has many advantages, but does not trap any atmospheric nitrogen like the clover and vetch. Oats are good and an excessive growth may be useful for stock feeding if the ground is in good condition. Millet loves heat and a very rapid growth will be made on dry soils and as indicated above, no crop dries out the soil so rapidly as does this one. Rape is anotner crop that may be used to advantage and like oats and millet may be used for stock feeds if too heavy a growth for turning under is made.

In my mention of early spring plowing, I do not wish it understood that we think fall plowing is not advisable. We believe that plowing should be done in the fall if at all possible and the ground well worked with a disc harrow as early as it can be worked up in the spring. If the orchard can be worked with the disc without plowing at all, so much the better.

A reader of The Rural New Yorker insists that when a plum tree fails to bear he can always bring it back to fruit by boring a hole into the trunk and poking in a quantity of sulphur. Now the usual reason for these barren trees is that the flowers are sterile and thus rarely if ever fertilize. The remedy is to plant trees of another variety near by, or graft wood of that variety into the barren tree. Then the flowers are fertilized and fruit is formed. How can the sulphur poked into the trunk of the tree, make a sterile flower fertile? This is a good illustration of the way some of us mix up cause with effect. A certain thing happens, and without hunting out the true cause of it, we oserve that another thing seems o change he first one. It may be an accident, but we jump to the conclusion that it is a true remedy. You never can have a true remedy until you find the true cause. The politicians are always strong at mixing up cause and effect by claiming that the party is above the people.

THE MARITIME FARMER

And Co-operative Dairyman
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Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

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DATES OF ISSUE.

March	4-18
April	1-22
May	6-27
June	10-24

FEBRUARY 4, 1919.

CATTLE FEEDING

Readers of The Maritime Farmer should preserve the second January issue of the Maritime Farmer for future reference. Th subject matter of a bulletin by Prof. J. M. Trueman of the N. S. A. C., Truro, on "Cattle Feeding in Nova Scotia" was commenced in that number and is continued on other pages of this issue. Prof. Trueman is one of the foremost authorities on feeding questions and live stock in Canada. Thousands of dollars are annually spent by the farmers of Maritime Canada for mill products for feeding purposes. Are they spending their money to the best advantage? Study the recommendations of a practical authority. See where his recommendations can save you money and help you to get better results from your herds.

GROUND LIMESTONE AND BASIC SLAG

The attention of Maritime Farmer realers is directed to an interesting article on another page of this issue dealing with the results of experiments with Ground Limestone and Basic Slag, conducted by Prof. W. Saxeby Blair, Superintendent of the Dominion Experiment Station, Kentville, N. S.

This is a timely article that every farmer should read. Coming from Prof. Blair, who has had a long training in the school of experience, it will shed a fund of valuable information on the live question of the comparative value of the two commodities under discussion.

We would like to get letters from farmers who have used ground limestone or slag in their farming operations, as to the results they have been able to procure.

We frequently hear some very good recommendations for slag and also for ground limestone. Let us have some for publication.

LOSSES DUE TO CONTROLLABLE DISEASES

Among the diseases of economic plants there exist some for which effective control measures have not yet been discovered. Besides these are a large number where control is possible, but only after persistent efforts extending over a number of years. And finally there are a goodly number that readily respond to measures of control.

If we take into consideration the enormous losses resulting from plant diseases every year wherever farming and fruit-growing is an industry of importance—as in Canada—then it will be realized that negligence and indifference towards the control of such diseases as can actually be controlled, are causes of great national loss.

The person causing a forest fire through negligence or carelessness, renders himself liable to prosecution and a deservedly heavy fine, yet it is rarely that the culprit himself is the loser; the loss is debited to the whole nation owning the forests. In allowing plant disease to persist and become widely prevalent, persons are similarly guilty of criminal neglect, particularly at this time when the question of food is of far greater importance than all the gold in the world. Yet though Canada as a nation is the prime loser through the cumulative effect of such waste in production, other nations, now so markedly dependent upon Canada as a source for the necessaries of life, also suffer in consequence. Moreover it is not a commercial question of sharying in the loss and thus reducing it, but one of having to do without food which is lost through negligent members of a community.

Grain Rust causes annually millions of dollars loss. This can only be reduced by certain safety measures, but cannot so far be controlled. But the same grain that has escaped the rust is yet very seriously reduced in yield by smut diseases. In some years smut, quite apart from rust, has caused losses amounting to more than twenty million dollars in Canada alone. Smut of grain is a disease that is easily controlled by the very simple and highly effective means of seed treatment. Either from ignorance or from negligence, smuit is still widely prevalent. Only this year were received reports of smut affectnig one field up to 80% and more. Another example of a disease causing severe damage, but which may be readily controlled, is Late Blight of potatoes. The losses from Late Blight and the rot it causes among stored potatoes amount to several million dollars per annum. On the question of disease control, valuable information has already been published by the Dominion Experimental Farms, but farmers are urged to refer their problems more freely to experts at the Farm, from whom they will receive the best attention.

Disease control is of far greater important in agriculture and gardening than is realized by the general public. Diesases, once they have attacked economic crops, can rarely be eradicated. A plant that once has fallen victim to disease, will never give a normal yield. Poor yields are n nine cases out of ten due to lurkng disease, hence individual effort becomes a necessity in saving the nation the deplorable devastation due to plant diseases.

A MESSAGE TO THE FARMERS OF CANADA

Dr. G. C. Creelman, Commissioner of Agriculture for the province of Ontario and Principal of the Ontario Agricultural College, Quelph, addressing the Agricultural Club of Ottawa at the University Club Rooms here, repeated a message to the farmers of Canada from Right Hon. R. E. Prothera, Secretary of State for Great Britain:

"I asked him for a message to the farmers of Canada" said Dr. Creelman, "and he told me that they wanted our chilled beef and that Canada should develop the chilled beef trade right away in preference to the live cattle trade. He urged that there should be no delay. He also said that after the war Great Britain would not devote so much effort to raising hogs, because they could be fed cheaper on this side of the Atlantic and as long as she can get pork products from this continent she would be satisfied to do so."

Dr. Creelman, remarking on the present hold-up in the bacon purchases said that while he had no direct information he regarded it as merely a temporary congestion.

PEACE—BUT NOT PLENTY

The end of the war has come, but Canada must not relax her efforts to increase the production of food. In addition to the Allies, whose productive powers have been hampered by the war and who needs imports from this continent to build up a reserve, the people of the neutral nations must also be considered. Canada Food Board calls attention to the fact, also, that the countries of the defeated enemy nations have also to be considered as in some cases millions of helpless people are facing starvation. Counting Russia, Austria-Hungary, Turkey, Bulgaria, the neutral countries, and France, Belgium, Italy and Great Britain, a grand total of 250,000,000 people are short of food.

Canada will have a hungry market for her agricultural produce and our greatest possible effort to maintain and increase production will be none too great.

* * *

It is certain that there is going to be a splendid demand for dairy products of all kinds. Effort is already being made to secure a greater amount of butter for Europe. The present prices of butter are more nearly in keeping with the advanced prices of other farm products than they have been since the war started and we believe this will be a factor in stimulating larger production in what is commonly termed the home dairies. Without doubt, the creamery patron will feed his cows and care for them better, thus increasing their production. It is not a difficult matter through liberal feeding and good care to increase the production of our herds at least 20%. Even if this is done, there will be no surplus of dairy products. We are advised that milk consumption in October was larger in some cities than at any other time in our history. It is our opinion that people are beginning to appreciate the importance and food value of dairy products. This, together with the world shortage, is going to make a splendid market for years to come.

* * *

"Farmers have not in the past been getting reasonable returns for the time and money invested in dairying. It will require considerabel education to cause the consumer to realize the value of dairy products. More and more, however, an impression is being made on consumers, and they are being brought to a realization that they must pay for quality in dairy products.—Hon. Geo. S. Henry, Minister of Agriculture for Ontario at the recent Winter Fair, Guelph.

* * *

In dairying, large production and profit go hand in hand. Breeding furnishes the most economical way to obtain large-producing cows. The pure-bred bull, with generations of high-producing ancestors back of him, must be used for breeding, and only the best heifers from the best cows should be chosen to be the dams of the next generation.

* * *

Aims of a higher order may not be entirely fulfilled and yet at that may often prove more valuable than those of a lower order entirely fulfilled.

PREPARATION FOR SPRING SEEDING OPERATIONS

The farmer known to be beforehand with his work will have made a calculation of the quantities of fodder, roots and grain required to carry his stock through till spring, the quantity which he will have to buy, and will have satisfied himself whether or not his home-grown is suitable and of sufficient quantity for his own seeding requirements.

An inventory of this sort should be made by every farmer not later than the month of February and preparations made for selecting, screeing and fitting for seed all grain of good quality.

A business-like appreciation for seed of the best quality is noticeable among those who buy, many of whom are ready to pay the top price for the best obtainable. A large amount of buying in seed grain will be necessary in the Province this spring, particularly in certain parishes where grain crops were damaged by bad weather, and it will repay the farmer who has a surplus of plump bright grain to prepare it and offer it for sale as seed rather than to feed it on the farm or sell it as feeding grain.

There is a general scarcity of seed oats in the Prairie Provinces and a large demand for seed in southern Alberta and Saskatchewan and South western Manitoba. It is estimated that the Canadian Government Seed Purchasing Commission has to provide approximately 3,000,000 bushels of seed oats. Shipments from Eastern Canada and the United States have already started westward to fill orders from the western Provinces. No general Municipal or Government action for the purchase of farm seeds is anticipated in the Province as there is evidence of sufficient supplies of seed now in the farmer's hands.

The difficulty of the buyer and the seller coming together is likely to prove the greatest hindrance to the sale of seed and because of the difficulty of securing seed in some parishes a diminished area may be placed under crop this season compared with last year.

There is now evidence that the labor scarcity wil be less acute this summer than has been the case since pre-war days, though the demand for food products will be quite as insistent. Consequently every acre should be made to yield its maximum crop insofar as the labor supply and the use of the best obtainable seed can contribute.

In an effort to assist the movement and trade in farm seed within the Province this Division of the Department of Agriculture, agrees to act as an exchanbe depot where correspondence of buyers and sellers will be received and the buyers be directed to persons who have seed for sale which will meet with their demands.

A sample market for the sale or exchange of farm seed is offered to the public in a Provincial Seed Fair to be held during March at Fredericton. Exhibitors will be given the opportunity of listing at the time of making entry all seeds which they have for sale. The Agricultural Societies of the Provnice will be advised of the quantities listed with the Department in a further endeavor to assist the exchange.

All person who have a quantity of the common farm seeds for sale or buyers who wish to purchase or exchange, are invited to list their lots or requiremenats with this Division.

O. U. HICKS,
Dept. of Agriculture.

THE WASTE BY RUST IN FARM MACHINERY

A well known English mustard manufacturer used to say he made his millions from other pjeople's waste. By that he meant that more mustard was left to harden and to waste in the mustard pot than was actually used.

Ahere is a chance for a Canadian statistician to compute the waste in farm machinery. If we only take the ordinary measure of depreciation on machinery generally, it will be found that the result is astounding. Everybody knows that machinery depreciation is reckoned in industry from as high as 15 per cent. down to 3 per cent. annually. Most of us in Canada, too, know that in 1918 there were 50,000,000 acres under cultivation. Putting the value of machinery on our farms at only $2.00 an acre, certainly a low figure, we have a total value for farm machinery of $100,000,000. Depreciation at the lowest rate accepted by accountants would represent $3,000,000 to be written off this very year. At the higher, but none too cautious, rate of 10 per cent, the sum would be $10,000,000.

Not all of this depreciation is preventable. But the fully one-tenth under this head is an equally low estimate to make up for that drop in value which can be prevented by a simple pot of paint, a brush and a little good will. Who has not seen plows, harrows, mowers, reapers, binders and what not left out in the fields right through the winter, without even a tarpaulin? It is that preventable waste running on this calculation from $300,000 to $1,000,00 a year for the whole Dominion, that the Food Board now calls to the business attention of the farmer. Carlessness should not be allowed to take a mortgage on farm machines.

Probably no implement on the farm is more abused through inattention than the plow. It has been left in the open ever since our great grandfathers plowed with a wooden share. But our great grandfathers had not to meet today's business competition. The bright parts should be coated with grease to prevent rust.

Thousands of odds and ends of farm machinery stand in the fence corners where they were left in the rush of the harvest, and stay there all winter. The mere housing of these would lengthen their life from 5 to 10 years. The difference between proper and improper care in this respect represents a sum on the total investment in farm machinery to pay a high rate of interest on initial cost.

With the stress of war on all the industries, not merely in Canada and the United States, but throughout the world, new machines cannot be supplied at the same rate as for the last decade. The roller mills will be employed on other orders. Bridges, buildings, railways and a thousand other things for the restored lands of Europe; the restocking with new machinery of every factory now employed in making munitions or clothing for the troops, and for everything remotely conected with the war, will make demands on the price of iron and steel that is bound to be reflected in the price of farm machinery. The farmer will be wise who resurrects all his broken and neglected farm implements, and follows the example of the railways and big corporations who are rebuilding and reconstructing as many as possible of their locomtives and rolling stock.

The United States has gone to the length of issuing several bulletins for farmers on the care and repair of farm machinery. In the introduction to one of these it is said:

"Thoughtlessness in the handling, care and repair of farm machinery results annualy in the loss of many thousands of dollars, and of much time to the farmer."

If time is money, the Canadian farmer will be wise to invest this winter in a little carefulness, a small stock of cheap greasy paint with a basis of white lead, and utilize the spare hours which will come when the snow falls in preparing for the next harvest by putting his machinery in such order that it shall go out spick and span, with nuts and bolts in their places, bearings running easily, cranks going without looseness, and no broken cogs. Above al things— now that the lesson of conservation has been taught by the sharpest lesson that the white races have ever had—the demon of rust should be kept away from every machine, implement and tool on every farm as fiercely as it is kept away in a awell regulated industrial workshop.

DISINFECT THE STABLES

The fact that regular disinfection of the stables is not a common practice in Canada is sufficient evidence that we as farmers are not thorough or do we appreciate the importance of the health of our animals. As in other countries, disease of animals is responsible for the loss to farmers of many millions of dollars annually. Such diseases as tnberculosis, abortion, scours, blackleg, glanders, hog cholera, etc., take enormous toll from our revenues. Again parasites such as lice, ticks, etc., each year cause the waste of enormous amounts of expensive feed to say nothing of the losses in production of milk, meat, and young stock. Farmers of Canada it is your duty and your best business to stop these losses. Don't wait till animals die of disease or are emaciated and hairless from parasites before discovering trouble. Diseases are spread more rapidly when animals are confined in winter quarters.

One of the most important factors in cheap and healthy wintering of animals is clean quarters and no quarters can be kept clean and free from disease and parasites without disinfection at least twice annually.

The basis of disinfection is direct contact. Disease germs under a layer of manure, straw or dirt, cannot be killed by average disinfection. Hence the first step is the thorough cleaning out of barns, scraping (and washing, if possible,) all walls and floors, and sweeping dirt, dust and cobwebs from walls and ceilings. Wood floors should be repaired and earth floors renewed with a layer of clean soil.

What Disinfection to Use

1. Sunlight. This is the cheapest and one of the best. Every stable should have at least 6 sq. ft. of glass per mature head of horses and cattle, and one-quarter of this amaunt for calves and mature hogs. Sunlight induces cleanliness, health, comfort and greater protfis.

2. Whitewash applied hot to ceilings and walls covers and kills germs and parasites. Add drug disinfectant, such as Carbolic Acid, if barns have housed diseased animals. Apply with spray pump or brush.

3. Drug Disinfectants: All floors, gutters and mangers should receive extra care. Disinfect by soaking thoroughly with one of the coal tar distillates such as Kreso, Wescol, Zenoleum, Creolin, etc., etc., applied in water solution 3% to 6% varying with strength of disinfectant. Apply with spray pump or sprinkle and brush in.

The Health of Animals Branch, Department of Agriculture, Ottawa, can supply free instructions in selecting and preparing whitewash and disinfectants.

Thoroughness in the above disinfection is most important. The intelligent stockman intent on maintaining healthy stock finds it wise to disinfect mangers and feed passages more frequently. A light spraying monthly will suffice.

Practise proves that disinfection is cheap insurance and an investment yielding a high rate of interest. If Canadian farmers unitedly will but realize this, our animal disease and losses therefrom would decrease 20% per annum.

DRIED BEET PULP AS A FEED FOR LIVE STOCK

An anaysis of dried beet pulp taken from Henry's "Feeds and Feeding" shows that it contains on the average 82% moisture, 3.5% ash, 8.9% crude protein, 18.9% fibre, 59.6% free extract, anl 9% fat. The fibre content being high digestibility is comparatively low, there bing found only 4.6% protein, 65.2% carbohydrates and7.8% fat, a total of 71.6% digestible nutrients. Dried beet pulp will absorb from 4 to 5 times its own weight of water and swells up proportionately, therefore it should not be fed, unless in very small quantities, without first being soaked. In this condition it has succulence, digestible nutrient conten and laxative effect, somewhat similar to corn silage.

As a succulent food. It has been found that 9 lbs. of dried beet pulp and 5 lbs. of mixed hay was 11% better for milk production than 45 lbs. of corn ensilage. With hay at $18.00 per ton and silage at $4.00 per ton this would give dried beet pulp a valuation of $10.00 per ton to replace succulent roughage.

As a supply of protein. Taking the analysis given above it is calculated that to supply protein in a ration for milk cows when bran is worth $32.00 per ton, then oats are worth $24.80 corn $20.00 and dried beet pulp $17.80 per ton.

As a supply of digestible nutrients. On this basis if corn is worth $50.00 per ton, then wheat bran is worth $36.54, oats $42.24 and dried beet pulp $42.96 per ton. In this case the valuation placed on dried pulp agrees with that of the Scandinavian feed unit system which rates it 10% below corn or barley. It also agrees with the findings of the Massachussetts Experiment Station where they found that it was equal to corn in a ration containing no succulence.

As a feed for fattening Stock. When used for this purpose with beef cattle and sheep it has been found to produce growth rather than to lay on fat, therefore it can be used to advantage in the early part of the fattening period but should be replaced by corn or other heavy grain during the finishing period. There appears to be no advantage in feeding it to horses while for swine it is much toi bulk. and fibrous unles for maintaing brood sowsy

Reviewing the subject it may be said: (a) dried beet pulp is low in protein and high in fibre, hence the protein is digestible in a relatively small degree, therefore it cannot replace any rich protein feeds like oilcake, cottonseed meal or even bran or oat chop in the supplying of protein in the ration; (b' it is useful when used to supplement a shortage of succulent roughages such as silage, roots and grass or to lighten up a heavy protein ration; (c) under certain circumstances (as a source of digestible nutrients); (d) it may acquire a value of $42.96 per ton while in other cases where succulence and cheap home grown carbohydrates (as in corn ensilage- are already present its value may b eas low as $10.00 per ton; (e) in the feeding of beef cattle and sheep it is better adapted to producing growth than to laying on of fat, but even for the former purpose is but as valuable as oats.

DISINFECT!

Great care and thoroughness should be exercised in cleaning and disinfecting barns and stable yards in which animals with contagious disease have been kept. Such diseases as glanders, anthrax, rabies, and to a lesser degree ,tuberculosis, are highly dangerous to man as well as to other animals and no laxity should be tolerated in cleaning up premises where these and other communicable diseases have been known to exist. The expense of a thorough disinfection is not large and the equipment needed is simple.

The following is a list of the most efficacious disinfectants: Chloride of lime; ;bichloride of mercury; formalin; carbolic acid; crude carbolic acid; compound solution of cresol. A pail and the ordinary spraying pump is usually satisfactory for applying solutions of any of the above.—W. H. Feldman.

HORTICULTURE.

INCREASED EXPRESS RATES

Ottawa, December 31, 1918.

Editor The Maritime Farmer:

The Express Companies in Canada have recently made application to the Board of Railway Commissioners for permission to increase their rates.

The proposed increase is of general application, but as it is the intention to cancel all commodity tariffs, the fruit industry in both Eastern and Western Canada will be one of the interests most seriously affected.

Your attention is directed to the following schedule of present and proposed rates, in cents per 100 pounds:

From	To Halifax		To Moncton		To Truro		To Sydney	
	Present	Proposed	Pre.	Pro.	Pre.	Pro.	Pre.	Pro.
Kingsport	60	75	100	120	60	75	120	150
Canning	60	75	100	120	60	75	120	150
Falmouth	40	75	80	105	50	75	120	135
Hantsport	50	75	80	105	50	75	120	135
Wolfville	50	75	80	105	60	75	120	135
Port Williams	50	75	100	105	60	75	120	135
Kentville	50	75	100	120	60	75	120	150
Cambridge	60	75	100	120	60	75	120	150
Waterville	60	75	100	120	60	75	120	150
Berwick	60	75	100	120	60	75	120	150
Aylesford	60	75	80	120	60	75	120	150
Auburn	60	75	80	120	70	75	120	150
Kingston	60	75	80	120	70	75	120	150

The present rate to St. John, N. B. is 70c., proposed rate 90c.; to Campbellton the proposed rate is $1.65.

The object of this letter is to obtain an expression of opinion from those directly interested. In the meantime the Board of Railway Commissioners have been advised that in all probability representatives of the fruit industry will desire to be heard when the case comes up. You are therefore, requested to give the matter your careful consideration and if you think objections should be made before the Board I would be glad if you would state as fully as possible your reasons, along with any specific data you may be able to supply.

Hoping to hear from you with as little delay as possible, I am

Yours truly,

G. E. McIltosh,

In Charge Transportation.

THE FIGHT AGAINST THE BROWN TAIL MOTH

Among the many activities carried on by the N. S. Dept. of Agriculture, not the least in importance is the campaign, now in its tenth year, against the Brown Tail Moth. This work is under the jurisdiction of the Entomological Branch, and being of a more or less quiet police character, is probably little known outside of certain areas.

The Brown Tail Moth is one of the most destructive of all insects. Where it gains headway and becomes established it will devastate whole areas of fruit and other trees in a single season. The U. S. Government, after allowing it to get a foothold in New England, has recently spent many millions of dollars in the endeavor to control and extripate this pest.

It is worth remembering that all these life forms, when native or long established, are checked to a greater or less degree by natural foes or parasites which prey upon them. When carried into strange territory, however, they are apt to be immune from these foes for many years, and thus may multiply to an alarming degree before meeting any natural check. This is the history of the Brown Tail which was imported from Europe, and failed to bring its parasites with it. The introduction of these natural foes is one method of combating it, now being carried on by the Dominion Department. But a far more effective and immediate remedy is necessary to prevent its ravages.

The Entomological Branch of the local Department, in cooperation with the Federal Department, the expense being halved, has at the present moment some ten men, divided into small parties, scouting the infested areas, and destroying the winter nests. The area of infection thus far corresponds roughly with the main fruit belt in Nova Scotia, though the pest has never been allowed to gain enough headway anywhere in the Province to make it appear to many people as a serious menace. The work being done falls into two divisions, the widely ranging scout work on the outskirts of this region for the purpose of preventing its spread, and the more intensive work of carefully examining the region where it is known to be, so as to destroy every nest possible. The following table, giving the number of nests found and destroyed, indicates at once the menace to fruit growers from this source, and the success attending the efforts to overcome it.

In the year	1909....	1496 winter nests
"	1910....	4462 "
"	1911....	8070 "
"	1912....	11055 "
"	1913....	24156 "
"	1914....	18254 "
"	1915....	14845 "
"	1916....	10019 "
"	1917-18..	3024 "

The period reported on so far for 1918-19 gives a return of 413 as compared with 1400 for the corresponding period of last year. Thus the persistent effort of the Department is now showing a very gratifying result. When the possibilities of fruit growing in Nova Scotia are taken into account, the value of this piece of work becomes inestimable.

GLEANINGS FROM THE N. S. DEPARTMENT OF AGRICULTURE

Field Crops Competition

It is gratifying to observe that interest in the Field Crops Competition conducted by the Local and Federal Departments of Agriculture, is on the increase. The entries in 1918 totalled 583, a gain of 150 over 1917. The scores were very high, especially in grain and turnips. The prizes won reach the respectable total of $2022.50.

A noteworthy fact appears when the report of these competitions is laid beside the report of the Maritime Seed Fair held at Summerside, P.E.I., that every Nova Scotia prize winner at the Seed Fair had appeared in the Field Crops Competition.

This fact bears several inferences, but a most obvious and important one is the close relation indicated between a first class field crop and good seed. There was a sufficient number of prizes won at the Seed Fair to prove that this Province is capable of producing the very finest quality of seed. It is not necessary here to argue at length the advantages of using such seed. The evidence on every hand pointts so conclusively to its supreme value that the Department is strongly urging the use of registered seed, and will announce in its field crop circular for this year, that in 1920 prizes will be awarded only to those who use this quality.

It will be well to get ready this year. A concession recently made by the Canadian Seed Growers' Association, whereby the immediate progeny of registered seed may in turn be registered, provided that it is up to the standard and has been properly inpected, makes this requirement much less exacting. Buy registered seed for your 1919 sowing and be prepared.

The Registration of Seed

While the process of obtaining registered seed is fairly well known, in view of the increasing interest in the matter, an outline of the steps necessary may be apropos.

The registration of seed is peculiarly the function of the Canadian Seed Growers' Association, with headquarters at 114 Vitcoria St., Ottawa, of which, up to the present time, the farmer must be a member in order to secure registration. This organization co-operates with the officials of the Federal and Provincial Departments of Agriculture in every possible way.

To prepare seed for registration the heads are hand picked for three successivie years; that is, the seed threshed from the first year's handpicking is sown the next year in a

Plan NOW to Spray for Better Results

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definite plot, and, in turn, hand-picked for the next year's seed. The crop must be inspected each year by a qualified seed inspector. The third year a sample is also sent to Ottawa for examination and registry there with the Seed Growers' Association. The party carrying out this work is then eligible for membership in the Association, and, when inspected and sealed in bags by the seed inspector, the seed is ready for the market as registered seed.

The philosophy underlying the whole process is exactly that which has given us improved breeds of stock, and such wonderful results in the fruit line as have been attained by the famous Burbank and others. The selection for a period of years eliminates the weaker kernels, greatly lessens the risk of disease, dismisses weed seeds altogether, and reserves the function of production to seed that is clean, virile and of the most productive parentage. The experience of the Association is that registered seed may be expected to yield from three to five bushels per acre more than unselected seed, and of a superior quality.

Further information on the whole question may be obtained at any time from either Mr. S. J. Moore, Dominion Seed Inspector for the Province, or Mr. F L. Fuller, of the Local Department. The address of both these gentlemen is Truro, N. S.

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Prize Winners at the Maritime Seed Fair

Nova Scotians will be glad to know that their Province held her own very creditably in the interprovincial Seed Fair recently held at Summerside, P.E.I. There was one Nova Scotian winner in Class 1, which was open only to members of the Canadian Seed Growers' Association, Mr. W. L. McFarlane of Fox Harbor, who won a third prize for Banner Oats, and a second for Six Rowed Barley.

In Class VI., open to all the Maritime Provinces, there were very large entries, particularly in the Banner Oats section. This is the largest item of all, and the first prize went to a Nova Scotia, Mr. Alex. C. Chisholm, of North Grant. Mr. John R. Harrison of Maccan, won a fourth in this section. Mr. Harrison made a record, winning a first in wheat, (any variety) a second in White RuRssian wheat, a first in field peas ,a second in Timothy Seed- and a fourth in colored beans. Other winners were Albert C. Veniotte of West Northfield, who won a first in carrot seed and a second in field peas, and James J. Dunn, Lower South River, who won a fourth in turnip seed. It is significant that all these winners had appeared in the Provincial Feld Crops Competition.

Agricultural Competitions

The report of the Field Crops Competitions in N. S. for 1918 indicates that the Counties are having the largest entries were Inverness, Antigonish and Richmond. Those who are familiar with agricultural activities at once observe that the interest taken in these competitions and in other lines of scientfic and exhibitory character is a key to the general progressiveness of the district agriculturally. The invidiousness of comparison is eliminated when we add that several other countries closely followed those named.

At the interprovincial Seed Fair there was one class of entries confined to competitors in the Nova Scotia Field Crop Competition including seed wheat, oats and potatoes. The largest winner in this class was Mr. Alex C. Chisholm, of North Grant, who took prizes in all three. Other prize winners were Messrs A. B. Cunningham, Tatamagouche; W. L.McFarlane, Fox Harbor; John R. Harrison, Maccan; Joseph E. Coady, Margaree Forks; J. L. Cunningham, Bayhead; Samuel Freeman, Amherst and John McMullen, Georges River, all in the wheat section. In the oats section, Messrs. T. J. Grant, Antigonish; William Olie, Selma, and J. L. Cunningham were winners. in potatoes, Messrs. Chisholm and McMullen.

There can be no doubt that these various competitions, fostered as they are by both Federal and Provincial Depts. of Agriculture, have been very effective in stimulating the production and distributing of improved and clean seed.

POTATO HARVEST OF 1918

The returns already published showed that the total area planted to field potatoes in Canada this year was 735,192 acres, as compared with 656,958 acres in 1917, both years establishing records. The estimated yield per acre for Canada this year is 143½ bushels, as compared with 121½ bushels last year, and with 150¼ bushels, the average for the ten years 1908-17. The total estimated yield of potatoes for 1118 is 105,579,700 bushels, as compared with 79,892,000 bushels last year. The yield for 1918 is the highest on record, the previous record being over 99 mililons in 1909. By provinces, the highest average yield per acre is in British Columbia, 228 bushels, the other provinces ranging in order as follows: Nova Scotia 194, Manitoba 185, Prince Edward Island 170, New Brunswick 158, Quebec 147, Ontario 123, Saskatchewan 116¼ and Alberta 70½ bushels per acre. The largest acreage and production of potatoes this year is in Quebec, the total yield being 38,936,000 bushels from 264,871 acres, Ontario being next with 20,443,000 bushels from 166,203 acres. The average per bushel of the potato crop is 98 cents as compared with $1 last year, and the total value is $103,636,100, as against $80,804,400 last year.

FALL WHEAT AND FALL PLOUGHING

The area estimated to be sown to fall wheat for 1919 is 5 p. c. less than that sown last year the area being 840,000 acres, as against 886,000 acres, the revised estimate for 1918, based upon the returns collected in uJne last. As compared with the original estimate for 1918 viz., 711,000 acres, the area for 1919 is 129,000 acres, or 18 p. c. more. On October 31 the condition of the fall wheat crop was for Canada 102 p. c. of the decennial average. nI Ontario, also, the condition is 102, but in Alberta it is 98.

About 56 p. c. of the land intended for next year's crops has been ploughed this fall, this proportion being similar to that of each of the past three years. In the Prairie Provinces the percentages are for Manitoba 54 as against 40 last year, in Soskatchewan 39 against 37 and in Manitoba 35 against 38.

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DAIRYING.

THE SIRE AN INVESMENT PURELY

When a man purchases his herd sire, he should bear one point in mind continually—he should consider his prchase as an investment.

There is probably no other place where the same amount of money could be put to work more profitably. It matters not whether he is a well established breeder or whether he is just keeping dairy cows for the monthly milk cheque, the sire is his very best investment. In this same connection there is another point to be borne in mind—the fact that often times the bull that costs a four figure is cheaper than the one that can be bought for less than $100.

When a man buys a farm, he takes a great many things into consideration, for he expects to gather a harvest of profit from that farm every year for a long time to come. When a man buys a bull he should likewise take a great many things into consideration, for the right sire is going to bring him a handsome profit every year as long as he stays in the herd. This will be through the improvement in the crop of calves that are born each year. As the sire impresses his individuality on his offspring he will inevitably pay back to his owner a dividend that will aggregate several times his purchase price.

That is the reason why the money spent for the sire that heads the herd is invariably an investment rather than an expense. It is an investment whose returns are cumulative in the superlative degree and it is an investment that the breeder must make wisely and freely, even though his would-be advisors hold up their hands in horror because of his unprecedented plunging. If he uses judgment in this, the plunging will be of the wisest kind.

The Individual Cow

One writer on dairying says, "The time is here when the basis for profitable dairying must be the individual cow."

There is many a dairyman who has been making a profit on his entire herd and feeling satisfied therewith. Naturally this refers to the man whose profit comes exclusively from the milk rather than the man who is depending upon both the dairy product and the offspring, or, in other words, the breeder of registered stock.

The mere fact that these farmers who are keeping the dairy herds are able to make a profit on their entire herds is a high reputation for the sort of cows they are milking, for inevitably in a bunch of 25 or 30 cows that are selected indiscriminately there will be some that do not pay a handsome profit. This is not to the discredit of the herd or the breed; it is merely the immutable law of nature. The man who would go farthest in his dairy work is the man who seeks out these unprofitable cows and makes up his herd from those that show a real profit.

As is stated above, it is now a question of the individual cow and not of the entire herd. Naturally the ideal system is to do official test work, but, if this is impossible then go into the cow testing association work. If there is no cow test association available, go after the work personally. Under any circumstances, maqe your herd a group of individuals, every one of which is paying a handsome profit, rather than a bunch of dairy cows which are simply returning a good sized milk cheque every week.

There may be certain marks which indicate a good milker, but there is no sure guide except to weigh the milk and food. The farmer will then know extctly the kind of cow and how much her milk costs.

AYRSHIRE SILVER CUP WINNERS IN THE R. O. P. 1918

The following are the three highest scoring cows in their respective classes in the R. O. P. for 1918. The first mentioned cow in each class being the Silver Cup Winner.

MATURE CLASS	Lbs. Milk	Lbs. Fat	% Fat	Days	Points
LADY JANE—30886—owned by A. S. Turner & Son, Ryckamn's Cor., Ont.	19135	704	3.67	353	21285
LOUISE—33587—owned by Wilson McPherson & Sons, St. Ann's, Ont.	16308	650	4.05	365	16398
DAFFODILL OF LAKESIDE—25126—owned by W. G. Strong, Gorrie, Ont.	15677	571	3.64	365	14272
FOUR YEAR OLD CLASS.					
MIDDY—44820—owned by Wilson McPherson & Sons, St. Ann's, Ont.	13288	533	4.01	365	11885
NUB OF FAIRMOOR—45732—owned by J. E. Sullivan, South Mountain, Ont.	12062	505	4.18	365	9988
MAPLE LEAF JEAN—47434—owned by Gilbert McMillan, Huntingdon, Que.	12366	472	3.82	318	9712
THREE YEAR OLD CLASS.					
ANNA OR DARROCK—44850—owned by Angus Armour, Dorchester Sta., Ont.	10530	427	4.05	364	7885
PRIMROSE OF ORKNEY—4th.—52119—owned by Harmon Maspherson, Copetown, Ont.	8309	387	4.65	298	6576
ALLANCROFT MEADOW SWEET—43080—owned by Sir H. M. Allan, Beaconsfield, Que.	9288	404	4.30	326	6354
TWO YEAR OLD CLASS.					
SNOWDROP OF HICKORY HILL 2nd.—52518—owned by N. Dyment & Sons, Brantford, Ont.	10933	449	4.11	3.63	10146
QUEEN OF SPOTS—44948—owned by W. H. Bradley, Lansdowne, Ont.	9545	413	4.3	316	8862
VIOLET—47427—owned by Jos. Thompson, Sardis, B. C.	8735	393	4.5	365	7395

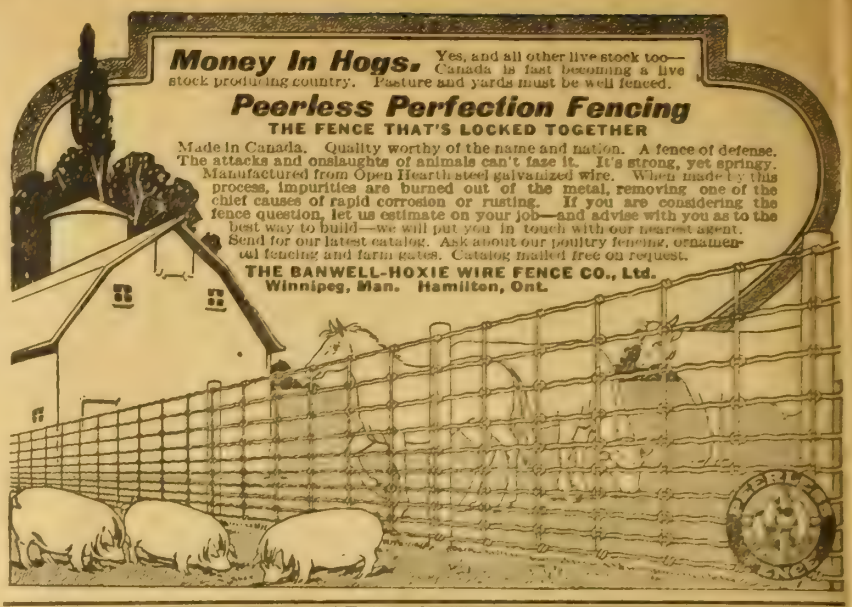
W. F. STEPHEN, Secertary,
Canadian Ayrshire Breeders' Association.
Huntingdon, Que., January 21st., 1919.

CARE AND FEEDING OF DUCHESS SKYLARK ORMSBY

(By Axel Hansen.)

The feeding of Duchess Skylark Ormsby, the greatest record coy ever known, began three months before her last calving. By this, I mean to say that she was dried off and gotten into condition. She was by no means fat when she freshened; however, she was in the pink of condition, which I favor more than being overly fat. She was fed a ration at this time that had the following favorable characteristics. It was bulky, light, cooling and laxative, consisting chiefly of bran, ground oats, brewers' grains and linseed meal. Corn silage, alfalfa hay and roots constituted her roughage. She was fed all the grain she would eat up clean. This was continued until ten days before she freshened; then he ration consisted of bran, two parts; oats, two parts. oil meal, one part; and the quantity was cut down to 10 to 12 pounds a day and later to six to eight pounds so as to cool out her system befor calving.

On Nov. 14 she dropped a male calf. She was immediately given a pailful of lukewarm water, and about an hour later was fed a warm bran mash, and a woolen blanket was put on her to protect her from drafts. The calf was left with her for two days so as to get the colostrum milk, which is very beneficial to new born calves. During the next two days her ration consisted of bran, oats and oil meal, same proportion as prior to calving, and she was fed 10 to 12 pounds in four feeds and 20 pounds silage, 25 pounds roots, 10 pounds alfalfa hay. She was given luke warm water to drink for several days. On the third day the calf was removed and a little hominy and gluten was added to her grain ration and about five pounds silage added to her roughage, amking a total of 25 pounds. A daily increase of her grain ration at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THE FENCE THAT'S LOCKED TOGETHER
Made in Canada. Quality worthy of the name and nation. A fence of defense. The attacks and onslaughts of animals can't faze it. It's strong, yet springy. Manufactured from Open Hearth steel galvanized wire. When made by this process, impurities are burned out of the metal, removing one of the chief causes of rapid corrosion or rusting. If you are considering the fence question, let us estimate on your job—and advise with you as to the best way to build—we will put you in touch with our nearest agent. Send for our latest catalog. Ask about our poultry fencing, ornamental fencing and farm gates. Catalog mailed free on request.
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7A

a rate of two pounds per day, soon indicated that Duchess was not going to consume 35 to 40 pounds grain per day, for she objected to 25 pounds per day, so we backed up to 22 pounds, and this seemed to be her limit.

She was taking 25 pounds silage, 30 pounds roots and 15 pounds alfalfa hay in the way of roughage. At the end of her first month she was consuming 22 pounds of grain, consisting of bran, oats, hominy, brewers' grain, glutten, at a ratio of 1-4-5. This seemed to be her favorite mirture with slight changes from time to time, according to her likes and dislikes.

Soiling Crops

As soon as the fields would allow it in the spring, soiling crops were put in to be fed during the hot summer months, and to take the place of silage and roots in the winter. Three plots of oats and Canadian field peas were sown at from 10 to 12 day intervals so that the second seeding would be ready to be fed when the first was gone and the third seeding to follow the second in the same manner.

When spring and warmer weather approached, her ration was changed to a more bulky and cooling ration, and the oats and peas were cut and fed as soon as 10 inches high. During the months of June, July and August she consumed from 16 to 20 pounds of grain, about 150 pounds of soiling crops and 15 pounds of alfalfa hay per day. After the oats and peas were all fed, or too ripe to be of any value as green feed, sweet corn and laer ordainary field corn were used for succulence and he bulk in her ration. After the potato crop was harvester, a second crop of corn was planted, which transferred an abundance of splendid green feed until the frost came in the fall, then rots and silage were used to replace the green feed and to fill the need of succulent and palatable roughage, and her ration was changed back to feeds of a more heating nature than she was getting before the hot weather.

Duchess was kept in the barn during the entire year. She was taken out for half an hour's exercise when the weather would permit it during the winter and was taken out every day during the summer, usually in the evening between 6 and 8 o'clock. Her stall (box stall) was kept dark and cool by means of electric fans, and a fly net was kept on her to prevent flies from annoying her. She was groomed at least once a day during the entire year and milked four times a day.

Now the great question is. "Will this great record ever be beaten?" I wil lanswer this question in the affirmative, and why not? Are the breeders of dairy cattle not entitled to better and bigger results after spending thousands of dollars and years of hard work trying to develop their herds to a higher degree of efficiency?

I feel certain that there will be several 1,200 pound fat cows in a few years.

MANUFACTURE OF CREAMERY BUTTER

The process of butter making at the present time seems to be undergoing a series of evolutions, and many of us are beginning to wonder just where we are at and if we have got to go back to school and learn the science of butter making all over again. There have been some rather startling announcements made of late in regard to new methods advocated for the improvement of creamery butter, and whilst I am in favor of taking advantage of every aid which science may evolve for the improvement of the finished article, at the same time we must not overlook the fact that the quality of the raw material has a preponderating effect on the quality of the finished article over and above any mere deviation in method of manufacture.

The one big weakness which affects dairymen in general is this tendency of applying local or surface remedies for evils deep seated and of constitutional character. Form time immemorial we have been taught that in order to have a fine quality of butter we must first produce a fine quality of milk and cream, feed the cows on good wholesome foods and use every precaution to guard against the flavor being injured from any cause whatever. The development of lactic acid in the cream by the butter maker was considered of paramount importance in order to produce that distinctive butter aroma so characteristic of fine, weel made butter. The market today, apparently, demands a mild, almost tasteless butter, and we are getting away from that distinctive aroma always associated with good butter in the past. I have frequently wondered if we are always safe in being guided by the opinions of the trade. Do these people fairly reflect the desires of the consuming public or do they not rather reflect the opinions of the dealers as to the qualities which are less risky and show the smallest percentage of losses. There may be a vast difference between the qualities which the consumers may want and those which the dealers find profitable in handling. It should be our business as educators to co-ordinate these two requirements.

When the buttermaker separated the cream from the milk himself at the creamery he could by pasteurization and the use of a pure culture of lactic acid organisms produce a butter which not only had that desirable distinctive aroma but had good keeping quailities as well, which made it a safe commodity for the dealer to handle. As the whole milk creamery is practicall extinct and as the buttermaker is being furnished with a constantly changing quality of raw material, the whole process of butter making is graduallq changed to meet in the first place the demands of the dealers for a safe commodity to handle and which will be reasonably satisfactory to the public. Our effort to do this has resulted in the production of a butter of entirely different characteristics to those required a few years ago. We are now making a butter which may more easily be imitated by "Oleo" manufacturers and for that reason is to be regretted. It is the tendency of human nature to travel along the lines of least resistance and we as butter makers have found it more convenient to cover up the defects in our butter by changing our methods of manufacture rather than attack the real cause of these defects by demanding a better quality of cream and by being prepared when it is offered.

We are getting more and more in line with the manufacturers of shoddy cloth—trying to give our consuming public appearance for substance. We can no more produce a high quality of butter from inferior cream than we can sound cloth from shoddy material. In anything I am about to say regarding improved methods in manufacture I do not wish you to lose sight of the fact, that no process of manufacture can entirely overcome defects in the raw material and that improvements in method of manufacture sould go hand in hand with improvements in the quality of the raw material.

From the limited amount of work which we have been able to do at the Eastern Dairy School this fall we feel we are safe in issuing the following instructions which we ask our makers to follow with descretion.

Pasteurization is the one great aid to be used to give butter its keeping qualities. If the cream has a high acidity, first warm up to betweent 70 and 80 degress F. and then add sufficient neutralizer to reduce the acid to form .28 to .35 per cent. Then pasteurize to a temperature of 170 degrees F. for 5 to 10 minutes and cool to churning temperature. The longer the period between pasteruization and churning the better the results, especially in the texture and grain. At least three hours should elapse before churning. Wash the butter with pure water in which germ life has been rendered inactive at a temperature 2 to 5 degrees lower than churning.

In order to have control of the moisture content, pass the butter through the rollers a few times and

(Continued on page 555)

DE LAVAL

The World's Greatest Cream Saver

All over the world creamerymen, big milk concerns, dairy authorities and cow owners who have special opportunity for judging the worth of cream separators have for years recognized the superior skimming and all around efficiency of the De Laval.

That's why 98% of the plants throughout the world separating large quantities of milk use the De Laval. It skims so much closer that they can't afford to use any other machine.

That's why 2,325,000 De Lavals are in daily use, more than all other makes combined.

Not only is the De Laval the greatest cream saver but it turns easier, is easier to wash, has larger capacity and greater durability than any other separator.

The more you know about cream separators the more certain you are to buy a De Laval.

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LIVE STOCK.

FEEDING CATTLE IN NOVA SCOTIA

By Prof. John M. Trueman, N. S. A. C.
Truro, N. S.

(Continued from last issue)

On account of the present difficulty in getting bran, middlings and cotton seed meal greater use is being made of these proprietary feeds than usual. They are made up of by-products of mills that are manufacturing such articles as cereal breakfast foods, glucose, corn oil, beet sugar, molasses, etc., and these by-products are mixed to some extent with such standard feeds as cotton seed meal, oil meal, corn meal, and oats. In addition to these mixed feeds there are also on the market various grades of wheat screenings. One grade is sold under the name of "Ground Special Screenings" and is made up almost entirely of weed seeds removed from wheat at the great elevators and flouring mills. These ground weed seeds have somewhere near the same composition as wheat bran, but are not so well liked by the cattle. When mixed with other palatable feeds however they are readily eaten and give good satisfaction. Another grade of screenings is sold by the Feed Branch of the Dominion Department of Agriculture, Ottawa, under the name of "Recleaned Unground Wheat Screenings." This material contains a large amount of small and broken kernels of wheat, and seeds of wild buckwheat. The wild buckwheat makes the meal from these screenings quite dark and for that reason farmers in some sections have been prejudiced against it. Where it has been tried out thoroughly however, the cattle eat it readily and it is giving good results. It has proven particularly valuable as a substitute for middlings for pigs. The pigs like it and thrive well when getting it. The following circular letter sent out by the Dominion Live Stock Branch explains fully its composition and value.

Elevator Screenings.

A short time ago the Department of Agriculture purchased a considerable quantity of recleaned screenings from the various terminal elevator companies at Fort William and Port Arthur. This material is now available for shipment. The price is $36.00 per ton in bulk, unground f. o. b. Fort William, (which would mean approximately $46.00 at Nova Scotia points.) We believe that it is excellent value at this price and that it will pay the feeders to consider the purchase of a carload or more for feeding purposes at different points throughout the Dominion.

The analysis of this feed is as follows:—

Chemical		Botanical	
Protein	14%	Broken Wheat	46.1%
Fat	5%	Oats	1.0%
Fibre	8%	Flax	.1%
		Wild Oats	10.65%
		Wild Buckwheat	35.15%
		Mustards	.7%
		Other Seeds	.65%
		Chaff	5.65%

While the botanical composition may vary to a slight extent the percentages of protein, fat and fibre will remain almost constant and, consequently, the feeding value will change but very little.

If arrangements can be made to have this mixture ground on arrival at destination, it would be well to do so as the vitality of any weed seeds contained, would be practically destroyed thereby, and at the same time the feeding value would, to some extent, be increased through the meal being more digestible than in the unground material.

Those desiring to purchase these screenings should forward their orders direct to the Feed Division, Live Stock Branch, Ottawa, accompanied by Bank reference. All sales will be for carloads only and on the basis of sight draft with Bills of Lading attached.

All orders will be filled strictly in order as they are received and in view of the possibilities of railroad congestion with the approach of winter, feeders will be well advised to order early.

Dominion Live Stock Branch,
Ottawa, November 11, 1918.

A fairly good way to determine the comparative value of these feeds is to take those which have approximately the same per centage of protein and fibre and compare their content of total nutrients. If they are fairly alike in all these points they should have somewhere near the same feeding value, and the price will therefore determine which is the most economical one to buy. Groups of feeds that may be compared in this way are given below.

We can only compare in this way feeds that do not have a great variation in protein content, because feeds high in protein have a special stimulating effect upon growth, fattening and milk production which over-balances their mere content of total nutrients. The feeds on the market may be divided into groups that may be compared with each other as follows: Group No. 1 would contain a moderate amount of protein, but would be rather high in fibre and may be known as the bran group. It would include such feeds as bran, dried beet pulp, Eureka Feed, "Echo" feed, "Sampson" feed, "Schumaker" dairy feed, "Banner" dairy feed, Ground Special Screenings, and Ground Standard feed.

Group No. 2, would contain generally more protein and less fibre and would be known as the middlings group. It includes standard wheat middlings or shorts, high grade flour, wheat middlings (which it is against the law to make in Canada at the present time), recleaned unground wheat screenings, "Monarch" hog feed, "Monarch" dairy feed, molasses dairy feed, low grade gluten feed and red dog or feeding flour.

Group No. 3 would include the high protein feeds and may be known as the linseed meal group. It includes buckwheat middlings, high grade gluten feed, linseed and cotton seed meal.

A few other feeds may be mentioned that would not fit exactly into any of the groups given above. One of these would be oat feed. This contains a large proportion of oat hulls and is low in protein and in digestibility. It should be bought at a low figure and be mxed with richer feeds, if used at all.

Another feed exactly opposite to oat feed in character is corn meal. It contains the lowest percentage of fibre and the highest percentage of total nutrients of any feed on the market. It is easily digested and extremely palatable. It is not included in any of the groups above because it is equally relished by cows, calves and pigs, is good for milk production, especially valuable for fattening all classes of live stock and at present so high in price that it deserves special mention. A number of cars of sample corn have been bought by dealers and farmers in this province within a few weeks and this is available fo feeders at a reasonable price.

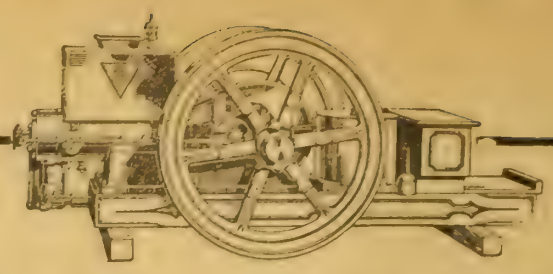
Still another feed that should be mentioned is cotton seed feed. This is a mixture of cotton seed meal and cotton seed hulls. It varies in composition depending upon the proportion of hulls present. The cotton seed meal is it's only valuable constituent as the hulls are tough and leathery and poor feed. Although it may contain 24% of protein only about 58% of that will be digestible making the real amount available to the animal only about 14%. It will be known by it's high content of fibre which will likely be over 21%, whereas prime cotton seed meal has only 10%. This material when sweet and sound is a valuable feed, but should be bought at a much lower price than good cotton seed meal.

The high protein feeds are represented on our markets largely by linseed and cotton seed meal. At the present time cotton seed meal cannot be obtained in Canada as the United States has placed an embargo on it's exportation, although this embargo may be lifted at any time. Just now, however, linseed meal can be obtained in fairly liberal amounts, and for that reason the following brief discussion of the comparative value of the two meals is inserted here.

Linseed and cotton seed meal are practically of equal value as far as their content of total digestible nutrients is concerned. Linseed has less protein, but more carbohydrates. There is a difference in the feeding value of these meals, however, that is not measured by their chemical analysis. Linseed meal has a more laxative and cooling effect upon the system than cotton seed. When silage or roots are being fed it does not make much difference which of the meals is used, but when only hay is availabel the linseed is a much better addition to the meal ration than cotton seed. In such a case I would pay more for linseed than for cotton seed and even when roots were available I would buy linseed unless the cotton seed was much the cheaper.

Furthermore the linseed meal is a safe feed to give to all classes of farm stock, while on the other hand cotton seed meal should never be fed to calves or pigs except in very limited quantities and under the careful supervision of an expert feeder. It contains a principle that will cause sickness and even death in young calves and all pigs. Linseed meal may be fed to pigs, cows, calves, horses, colts and sheep. It may make up one fifth of the meal ration of pigs, calves and sheep to great advantage, and gives excellent results when fed in quantities of from one to two pounds daily to horses. With dairy cows the best results have been obtained when linseed constituted anywhere from one-fifth to one-half the total meal fed. The Nova Scotia Department of Agriculture has placed this year with dealers, and farmers co-opeartive societies some 2000 tons of linseed meal and will continue this policy as long as the present difficult feed situation exists. The Feed Division of the Dominion

(Continued on page 555)



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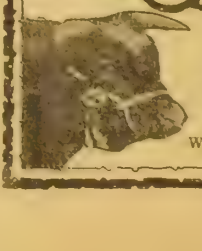

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are market toppers from baby beef stage to maturity, grow quickly, fatten rapidly, have high dressing percentage and abundant milking qualities.

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W. A. DRYDEN, Pres., Brooklin, Ont. G. E. DAY, Sec., Box 2S, Guelph, Ont.

A Word to the Wise

The condition of your stock in the Spring depends on one thing and one thing only—the amount of nourishment they can extract from the food you feed them during the Winter months.

Stock barned up and deprived of their natural requirements—green feed and exercise—often go off their feed altogether, and lose condition rapidly, if the proper tonic is not given them regularly to keen the appetite, stimulate the digestive organs and help them assimilate the food they eat.

Remember! No matter how expensive feed you give your stock they will not thrive nor give the productive results they should during the Winter months without a digestion promoting tonic. It is not the amount of food an animal consumes that builds up the system, but only the amount of food the digestive organs assimilate and convert into blood, bone and flesh.

Follow the example of thousands of stock breeders and farmers—feed

INTERNATIONAL Stock Food Tonic

It costs little—3 feeds for 1 cent. It does much—keeps your stock sleek, healthy and robust.

For Horses-- You know the likelihood of horses becoming out of condition, unthrifty, sluggish in appearance, rough, hide-bound, dry and dead coats, stocked in limbs, etc. INTERNATIONAL STOCK FOOD TONIC will quickly enable the animal's system to throw off these ailments. Your horses need a preparation just like this during the winter—something to help them keep the digestive organs working properly, purify the blood, etc., and remember the cost to use is remarkably small—LESS THAN THREE FEEDS FOR ONE CENT.

For Hogs-- INTERNATIONAL STOCK FOOD TONIC is composed in concentrated form of herbs, roots, and minerals, etc., which substitute to a large extent the ingredients hogs obtain when rooting about on free range. Its use saves waste that occurs in winter through imperfect digestion and diverts the feed to its proper body parts and organs. It gives hogs a keen appetite and strengthens the flow of digestive juices. It keeps the system toned up and in a clean, healthy condition and free from worms. Its use will save you thirty days in proparing hogs for market.

For Cows-- INTERNATIONAL STOCK FOOD TONIC is rated one of the best preparations ever made for every day feeding to dairy cows and fattening cattle. It is composed of the best known ingredients that assist the body organs to perform perfect assimilation, which is the secret of milk making and fattening. By feeding as directed it will increase the quantity of milk and keep your cows in a toned up, healthy condition, and give them an extra relish for their feed.

READ THESE TESTIMONIALS.

Centreville, N. S.

Dear Sirs :

I have used lots of INTERNATIONAL STOCK FOOD TONIC. I have used about one hundred pounds last summer. It is the best tonic I have ever fed to young pigs. It makes them grow fast and keeps them in good condition; also it is good for horses.

(Signed) Thos. N. Ketch.

Eastern Harbor, N. S.

Dear Sir :

I have fed INTERNATIONAL STOCK FOOD TONIC with good results. It kept my horses healthy, with a fine sleek coat, and I have had no trouble since using it.

(Signed) Geo. L. Brun.

Fredericton Jct., N. B

Dear Sirs :

I think INTERNATIONAL STOCK FOOD TONIC is a great thing for stock. We wouldn't be without it for anything. We feed it to our horses and it keeps them in fine condition; in fact, every person admires them, they have such a glossy skin and always look well. I am sure I cannot say too much for your food for all kinds of animals. Yours truly,

(Signed) James M. Hill.

The chief reason why you should use INTERNATIONAL STOCK FOOD TONIC in your Winter feeding is—It pays.

For sale by dealers everywhere in convenient sized packages, or in 25 lb. pails at $3.75 each.

INTERNATIONAL STOCK FOOD CO., Ltd.

TORONTO ONTARIO

THE HORSE

HOW TO SHOE DRAFT HORSES

The old adage, "no foot, no horse," grows more significant with the passing of the years. If these four words were more generally understood, it would mean thousands of dollars to the horse industry.

The perfect foot is not often seen. It is wide at the heel and of medium depth. The depth at the heel should be about one-half the length down the toe when the foot is in normal shape. The coronet should be round on the front feet and as nearly that shape as possible behind. A big, round foot indicates that the sensitive tissues covered by the hoof wall are healthy. The contracted foot, narrow at the heel, always means just the opposite. A full frog is a great asset to a big horse. It is the cushion which takes off the jars. Horses with extremely low heels are likely to go prematurely lame because of lack of frog. The inner part of the foot is not well enough protected from the wear and tear to which a draft horse foot is subjected to remain free from soreness long. However, there is less trouble with a thin-heeled horse going lame than a high-heeled one. Boxy feet, high at the heels, are sure to result in lameness sooner or later. They cause a horse to stand up on his pasterns too much and they always contract and sometimes pretty quickly. High heels and poor frogs always go together, for with such a shapel foot the weight of the horse cames on the hoof wall instead of on the frog. A frog is much like muscle tissue in that it never develops well without constant use. If one wants to grow a good frog, he has to take off the heel and let the frog down to the ground. Then the foot will widen out and grow a good, springy frog. The slope of the hoof in front should be about 45 degrees, the same as the set of the pastern. If kept at more than that angle, a horse cannot set down properly on his pastern. To give a horse a good elastic step his pasterns must set at such an angle that they will move up and down freely. There must not be a stilted step which comes with short, stubby pasterns and upright hoof walls.

How to Avoid Foot Troubles

The majority of all foot troubles are due to negligence. Few horses have bad feet from inheritance. Thirty minutes a week will keep the average farm horse's feet in perfect order. What farmer is there who does anything to his horses' feet unless they become so long that his horse can't walk easily, or unless they break off badly and cause lameness. Many good pure breds are permanently ruined by letting their feet grow without attention. The foot is like a sponge, very porous and sensitive to water. It will not stay in perfect order without moisture. Keep a horse in a stall and his feet will dry up and contract Never put oil on the feet, as that prevents water from entering the hoof wall. Pack damp clay in the bottom of the foot to hold moisture. If I can get it, I prefer white rock clay. This can be secured at most drug stores. Get the horse in the mud occasionally, so as to soften his feet. Where it is impossible to get a stallion out into a paddock, he should be walked out of doors and especailly when the ground is wet. Riding a stallion through meadows or pastures fhen heavy dew is on is excellent for the hoofs.

Always keep the foot as nearly level as possible. This rule applies to horses of all ages, and particularly to the young, growing colt. Sidebones are frequently caused by allowing one side of the hoof to wear off short. Then the weight is shifted to the short side, which invariably sets up inflammation, causing a sidebone sooner or later. Use a rasp and pinchers to trim a horse's feet, but not a chisel. One cannot use the latter and be certain that he is trimming the foot level.

Growing a Hoof Prior to Shoeing

Use the rasp sparingly on the hoof walls of a show horse, for if one wears away the glossy appearance, the hoof texture soon becomes dry and brittle and the feet go to pieces. There is no danger, however, from rasping the feet done only when he is shod, for usually he is not shod more than twice a year. Better keep very light plates on the show horse all the time to protect the hoof wall and allow it to grow. I always take a very light plate shoe and hammer it out until it is extremely thin at the heel. Then when one gets ready to shoe for show, he has a foot to work on. Too many people think that if they get a good horse shoer a few days before starting out to the fairs that he can fix up the feet. That oftentimes proves a sad mistake. In many cases it takes months of careful work to get feet in proper shape, and sometimes a year. Nobody can shoe a draft horse perfectly unless there is plenty of toe, and if not, it takes time to grow it. A heel that is too high cannot be cut down as it should be all at once. The work must be gradual or else soreness will result. It usually takes two or three trimmings to correct a high heel. If the quarter is lacking, keep the toe short, and that will throw more wear an the toe, less on the heel, and consequently the quarters will have a better chance to grow. Of course, if a foot is naturally well shaped and properly set, it doesn't take much of an effort to keep it that way. Always allow the frog to grow as long as it will. A great many people think that a horse isn't neatly shod unless the frog, bar and sole are pared away closely. No worse mistake was ever made, and any horse shoer who will do that to please his customer is doing nothing short of cruelty to animals. Never under any circumstances cut away the bar or sole unless it is diseased. Then it is necessary in order to treat the affected tissue with medicine and cure it. Nature has provided the frog, bar and sole to protect the inner and very tender parts of the foot.

The Colt's Feet

The colt should have his feet carefully watched, always keeping them trimmed level. There is very little that can be done to readjust the set of feet and pasterns on a mature horse but the young colt is easily suceptible to such changes. The set of feet and pasterns can be thrown one way or the other if it is done while the bones and joints are still young and flexible. If the colt stands too close behind or in front, keep the inside toe of the hoof a bit shorter than the outside and have the inside quarter a trifle higher. To throw the feet closer together, lengthen the inside of the toe and keep the outside quarter slightly higher than the inside. The mature horse that toes out badly in front, nigger heel fashion, is hard to help with shoes, for his legs do not set straight under him. The growing colt can be helped considerably by proper shoeing because hih joints are stil capable of being twisted slightly. Beware of the stallion with this fault, for there is no characteristic which draft horses transmit to their offspring with as much certainty as nigger heels.—By George MacLeod, Genesco. Ill., in the Percheron Review.

CARING FOR HARNESS

There is never a single week, nor hardly a day in the year, but what I have occasion to use some of the harness mending tools. On any farm where as much as half a dozen horses are kept with their full and complete equipment of harness of different kinds and several vehicles of different sorts, there is constantly coming up some repairing to be done. It is therefore important that one should keep a good kit of tools, and I don't doubt that almost all thrifty farmers have the same opinion.

While I don't have a shop for harness mending and such work regularly equipped. I do have a place where I can keep the tools and do the work; and while I don't claim to save a great deal of expense in actual money, I often save a lot of very valuable time by doing in a few minutes work that I would lose several hours in sending to a shop and getting some one else to do.

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omething breaks, to mend and use it, ourse, one cannot make a lasting job r as nice looking as when sewed. I y to keep a bunch of different sized axed ends, so that I nearly always ave one to suit any sort of a job when get ready to use it, whether it is a ridle rein or the traces of a set of arness to mend.

As a clamp is a very necessary tool n sewing leather, one ought to have ne, but it is not necessary at all to uy it. The best way to make one is o have a hardwood block six inches ong, four inches wide and three inchs thick. Then have two pieces of ardwood board, very smooth, four nches wide and a half inch thick. One f these pieces can be screwed on to ne side of the block, and the other may be attached to the other side with a hinge.

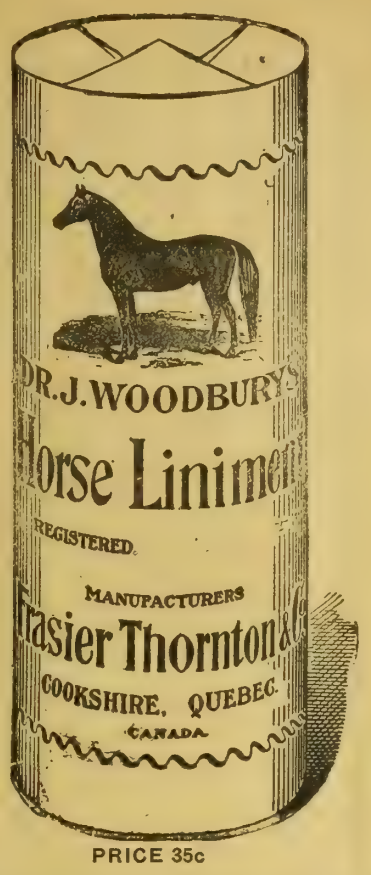
The block should, as stated, be three inches thick, but should be only two and a half inches on the edge so that when the boards that form the jaws of this clamp come together the edges can get close enough to grip leather or other thin articles and hold them secure. In order to make the clamp hold what is put in it, the easiest way is to have a "tee bolt." That ie a bit with a long head. This head should be as long as the width of the jaws of the clamp. And on the other end of the bolt, under the nut, there should be a flat bar long as the board is wide, with a hole through the middle large enough for the end of the bolt to come through so the nut will hold the bar or strap against the side of the clamp, and it can then be screwed tighter without risk of splitting the wooden clamp.

Into the jaws of this I put two pieces of leather to be sewed together, so the line of sewing will be along the edge of the jaws of the clamp, and with awl and wax end, can do about as good a job of sewing as a regular harness maker.

I have found that it always pays to keep on hand some waxed ends, and just as soon as a rip is noticed in any of the harness, mend it at once. It saves time and it always makes the harness look better and last longer.

In this conection I will say that it is very important at the end of the working season to clean up and oil the harness. It will add a hundred per cent. to the life of it. I soak my harness that is to be oiled in warm water for one night. Then hang it up to dry, and while still soft, rub into it all the neat's foot oil I can get it to absorb. After it has been hung up for 24 hours I put on a coat of harness blacking of dull finish, and later same with polish in it.

It pays to do all this, not only in the longer life of the harness, but in the satisfaction of having your rig look nice and well kept. When I drive I want my outfit to look as wel as anybody's, and by careful management I am able at all seasons of the year to have them in nice shape.—R. B. R.



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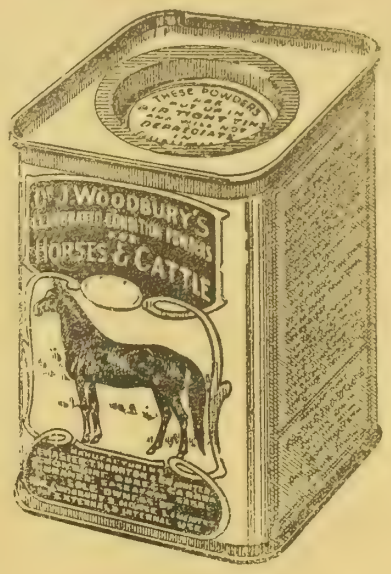

THE MAN, THE HORSE, THE TRACTOR—HOW THEY FIT TOGETHER

There are two sides to every question. A strong argument in any case is that a man must have some natural talent if he gets the best there is out of anything. Some men are farming who should never get within striking distance of a horse. They do not seem to realize that a dumb brute has a sense of feeling, and as a natural result every action of the lord of the farm is looked upon by his stock with a sense of fear. The same can be said of tractor-owners. I have seen men who could climb into the cab of a tractor and at the end of one season it would be ready to sell as scrap iron. The man who succeeds best with a tractor is one who can find slight troubles and remedy them by readjustments and in that way keep his tractor in good running order at all times. I was reared on a farm, and with the exception of four or five years have lived on a farm all my life. Since horses have been in practical use on farms for considerably more than a century, every farmer knows just what they are capable of doing. Many tractors are practical and give satisfactory results. With proper care and attention they will stand up to the hardest kind of usage for years. Since there are freak tractors that are not practical, many farmers are spending money for a bit of experience that will last them for years.

There is a vast amount of work on the farm every season that requires too much time and expense when done with horse-drawn implements. A farmer can dispose of his surplus horses, and keep just enough to do the lighter work on the farm, such as cultivating, feeding and some plowing in the busiest season is necessary. He can have a light-weight tractor that will pull from two to four plows (depending on the size of the farm) for the heavier work. So long as farmers continue to farm, there are two things that are with them to stay: horses and tractors. Each has its place on the farm. There is only one thing to work against the tractor and that is for the price of fuel to become prohibitive. We must look at that with a sense of reason, for feed for our horses is getting higher if we consider ever-increasing land values.

The Boston superintendent of police has issued an order instructing all officers to enforce strictly two sections of the city trffic regulations; the one forbidding all cruel beating or abuse of horses, and the other prohibiting boys under 16 years of age driving any licensed or business vehicle.

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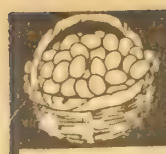

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POULTRY.

PREPARING EGGS FOR STORAGE

The Lime and Water-glass Methods

It will soon be time to preserve eggs for next fall and winter. May is the best month for this as eggs are practically all new laid and in good condition at this time.

The underlying principle of all the methods of properly preserving eggs is to control the growth of bacteria inside the egg. In selecting the eggs to be preserved in water glass, choose those only that are sound and clean. Use no cracked eggs; for they are bound to spoil and thus taint all the eggs in the same pack. Use only clean eggs; ;because eggs dirtied with manure will introduce manure bacteria into the water glass. These bacteria in time will penetrate the eggs and spoil them; since the water glass is used not as a germicide but as an antiseptic. If eggs are dirty when taken from the nest, it is not advisable to wash them for the purpose of putting them down later. The reason for this is the fact that on the outer surface of a fresh laid egg there is a mucus, which, in drying, partly seals the pores of the eg through which bacteria may enter. Washing removes this protective coating of mucus and thus makes such eggs, even though clean, more liable to spoil than those not washed. It is important therefore, to keep the nests clean.

One of the cheapest, most easily prepared and most effective means of preserving eggs is by lime water solution.

In making lime water solution it is important that good fresh lime be used. Use two pounds of fresh lime and slake in a barrel or tub by adding about two gallons of water. After the lime is properly slacked sufficient water is added to make five gallons of solution, which will be sufficient liquid to preserve 30 or 40 dozen eggs. After slaking it, the solution is allowed to settle. After it has settled, it is stirred up again. This is repeated a few times, after which the clear liquid only is poured off into the crock. The best plan is to put about six or eight inches of the solution in the crock before putting in eggs By doing this, there is les danger of crackinp any of them. The liquid tends to lift them slightly. The eggs need not be put in any special way. The crock should set level and then be filled right up to the top with the liquid. Put in enough so it is just on the point of running over. After this is done melt about four ounces of paraffin, and pour it on the top. This cools and hardens and forms an air tight covering which prevents any evaporation. By first boiling the water used in slaking the lime its preserving qualities may be slightly improved.

Water-glas has also given fairly good resuts, but this preservative is more expensive, and the eggs do not retain their flavor as well as those kept in lime water.

Some people put salt into the lime water, but this and several other methods tried have all given less satisfaction than the lime-water and water-glass methods.

The Water-Glass Method

Water glass, which is technically known as sodium silicate, is the basis of the preserving fluid. It is a very heavy, syrupy liquid, nearly colorless. It may be purchased of almost any druggist. One gallon, diluted according to directions, one part to eight parts of water, is sufficient for approximately 30 dozen eggs. An earthenware crock, with a properly fitting earthenware or tincover, is one of the best recpetacles to use. Metal should not be used in contact with water glass. Befroe putting in the water glass or the eggs, scald the crock thoroughly.

All eggs that are put down, except possibly those that are taken directly from nests visited daily, should be tested for freshness. The following method is simple, requiring only materials at hand, and can be carried out accurately with no previous practice. At the larger end of the egg there is a small chamber containing air, and from the time the egg leaves the hen this air chamber slowly becomes larger, due to the evaporation of the contents of the egg. The larger the air chamber becomes the more readily the egg will float. To carry out the test, place approximately one quart of water, which has been boiled, in some small enamel or earthenware container. To this, with constant stirring, add enough water glass so that a fresh egg, known to be not over 5 or 6 days old, will just sink to the bottom. The amount of water glass that must be added to the water will have to be determined by experiment. Into this solution the eggs my be placed in twos and threes. All that float should be discarded, and tried out for possible household use in the near future. An egg which is 10 days or two weeks old will generally float slowly near to the surface of the solution. One which is fairly spoiled wil bob up to the top almost like a cork. Later this same test solution, after proper additional dilution, may be used as a part of the preserving fluid.

The Preserving Solution

The preserving solution is prepared by adding one part of water glass to eight parts of water, which has been boiled for five or ten minutes just previously and then cooled. Sufficient of this solution should be poured into the crock to fill it half way or little over. As the eggs are placed in the solution, the level will be raised nearly to the top of the crock. The solution should be prepared fresh from year to year.

The eggs should be placed in this solution carefully, lest any be cracked, if the silicate solution affects the skin of the hands unpleasantly, a wire spoon or similar device may be used to lower the eggs into the preserving fluid, in filling the jar with eggs, care should be taken to see that all are submerged in the water glass, and re, main so, as the solution thickens.

It is not necessary that all the eggs be put down at once, especially where gegs are collected daily from a small number of hens which supply the reserve for winter. The solution may be made up, put in the crock, properly covered; and the eggs, taken day by day from the nest, may be added to the solution.

The eggs may be removed from the soltion as needed, and rinsed in cold water. In this condition, however, they cannot be boiled without exploding or cracking. This is due to the fact that the pores of the shells have been thoroughly sealed by the water glass. As the eggs heat, the air chamber expands, bursting the shell. This difficulty may be avoided by pricking a pin hole in the large end of the egg, thus giving the air inside a chance to escape as it expands with the boiling. All water glass on the market is alkaline to a greater or less degree. The eggs in the crock should be stored where the temperature is below 60 degrees F., if possible, and where direct sunlight will not fall, preferably in a dark place.

Keeping Qualities

The water glass method of preserving eggs has been in general use for a number of years, and experience has shown that eggs so preserved are usable for cookinig purposes a year, two years and even four years after being immersed in water glass. It is not advisable to expect them to keep in good condition longer than a year, however. The total cost of preserving eggs in case lots by this method should not exceed two cents a dozen.

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HENS THAT LAY NEED EXERCISE

A flock of hens need exercise in the winter and if the scratch grain is thrown on a bare floor, the birds will not starve but they will not keep in condition to lay. The hens that are anxious to exercise seem to be the best layers. Watch the roosts in the morning at sunrise and note the birds that come down first and begin to scratch. They are apt to be the birds that will produce the most eggs Watch the roosts at night and note the slacker hens that go to bed an hour before it is necessary. They are apt to be the lazy hens that do not like to scratch and such hens are usually poor layers.

The one form of exercise which a hen instinctively enjoys is scratching for grain. A deep littel is necessary in the poultry house in the winter to give the hens the exercise that they receive in the summer from running and scratching on the range. As it is broken up, more can be added and when it is damp and dirty it can be used to fertilize the garden, mulch strawberies or spread on the fields. Dry leaves are sometimes used as litter but they are soon broken up and unless a farmer is in a district where there are many large trees, it takes a long time to gather enough leaves to make a deep litted in the poultry house. The use of automatic feeders gives the hens some exercise as they have to jump and peck to release the grains and then scratch for them as they fall in the littel.

The flock of hens which eats its fill and then humps up in a corner

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of the poultry house, is not usually a paying flock. Some of the birds are in line to become over-fat and others are weakened by the lack of exercise and this makes them less resistant to colds and other diseases. The difference between flocks of healthy laying hens and lazy non-producers may depend upon the amount of exercise those hens receive. It pays to make the hens scratch.

PATRIOTISM IN THE POULTRY YARD

If it had not been for the thousands of women all over the land who keep hens, the poultry industry would have suffered a very severe setback the past year. Commmercial poultry keepers everywhere found it necessary to reduce their stock owing to the high price of grain. Fewer chickens have been raised, and fewer laying hens are kept. The salvation of th industry, therefore, is in, the hands of backyard poultry keepers, who are largely women.

It is highly important for the good of the country that as many laying hens as possible be carried through the laying season. The eggs are needed to replace meat. Moreover, it is esential that a great many chickens be hatched next spring. In some of the countries across the water, the poultry business has been almost destroyed. In France, the land of the epicure, where special attention was given to developing meat breeds, few fowls are now to be found, except mongrels and nondescripts. n lEngland poultry rations have been cut to such an extent that the hens are being fed on all kinds of odds and ends, even to banana peelings. America is being looked to to restock all of these foreign countries. tI will be necessary to send to Europe great numbers of breeding pens, and there will be a heavy demand for eggs.

At the same time patriotism and econonmy make it necessary to eliminate all unprofitable fowls. The woman poultry keeper should make certain that none of the hens are drones. Such hens eat almost as much as the others, and yet do nothing to pay their way. Thousands of bushels of grain could be saved if all the non-laying hens should be weeded out. Every woman who works daily with her flock soon gets a good idea of which are laying.

Hens of the breeds having yellow legs and colored ear lobs change in appearance very plainly after they have been laying some weeks. Gradually the legs and ear lobs fade out. This is because the pigment or fat is used for eg production. The natural yellow color of the skin also gets much lighter. This is especially true around the vent, as laying progresses. The beaks of some hens are dark colored at the top, but the change can noticed on under parts. Bright red combs are likely to be an indication that hens are laying; but the well-groomed, neat-looking bird which usually is the vrst to attract the eye of the visitor, is more likely to be a loafer than the raged, untidy hen that reminds one of a tramp.

The pullets which began to lay first in the fall have a special value for breeders. As a rule, it is not wise to carry any hens longer than two years. Most breeds wil lay enough eggs to pay for keeping them a second season. Many women find it a good plan to renew half of their flock each season, so that every winter they have one pen of yearling hens. It is better to breed from the hens than from the pullets, using a cockerel with them. This is especially true if the pullets lay heavily through the winter. They are likely to be so run down in the spring that their chicks will lack stamina.

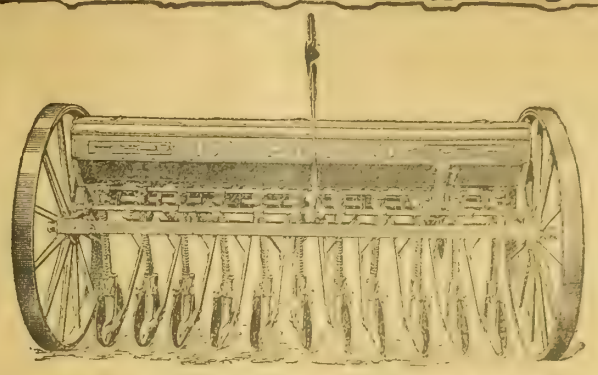
Let the poultry keeper keep her houses in order. The ideal house has fixtures which can be taken down in a moment, thus leaving all the walls free. Perhaps it is hardly necessary to say that unremitting warfare on insect pests must be kept up. It is impossible to get good results from hens that are covered with vermin. Most hens will keep themselves reasonably free from body lice if they have a dust bath, but they have no protection from the red mites, as these tiny creatures spend their days hiding under the perches, and in crevices in the walls, crawling onto the birds at night. These mites are naturally white, but become red when filled with blood. In a neglected hen-house they are often present in almost unbelievable numbers. The common remedy of the poultry keeper for all vermin of this kind is kerosene containing a little carbolic acid. tI can be used as a spray, or applied with a brush. Unles it is used every few weeks, though it has but little value. Much time and labor will be saved by substituting one of the coal tar products which can be put on with a brush, and one application of which will last four or five months. Any house can be kept practically free from red mites by this simple means.

Be sure that your houses are free from rats, too. It would be impossible to calculate the amount of the loss in grain each year from the depredation of these rodents. It surely runs into the millions, and such a loss should not be tolerated at the present time when food is so necessary for human beings. The watch for rats must be endless, because they are likely to appear over night. It is not unusual for a single rat or a family to travel a mile in twenty-four hours and set up house-keeping in a new abode. If you are wise you will keep your grain hoppers closed at night, and will feed the coarse grain in a litter several inches deep. Litter feeding is advisable anyway, because it makes the hens exercise, but it has the added advantage of protecting the grain from the rats. Of course a house with a cement foundation can be made rat proof, but you can protect any house by sinking wire with a fine mesh two feet into the ground all around. This wil lbe of no avail, however, if you do not close all doors and other openings near the ground at night.

The medium sized fowls are best if they must be kept closely confined as in a back yard. The very large hens like the Light Brahmas and Langshangs get too fat, while the small breeds, like the Leghorns and Anconas, are likely to develop bad habits, like egg and feather eating. This does not mean that these breeds cannot be kept, but that American breeds like the White Plymouth Rock, the Rhode Island Reds, and the Wyandottes are easiest to handle. There is no reason why hens of these breeds should not be kept in a house without any yard at all if the are allowed four square feet of room for each bird, and if the open-front of house is adopted, so that there will be no lack of fresh air.

Of course the qusetion of feeding is of greatest importance. Everything possible should be done to save grain. It will be found that vegetables can be used in much larger quantities tan in the past, especially if a fairly large proportion of beef scraps is used in the mash. In many places mangels and red beets can be bought cheap. These vegetables can be stored in sand in the cellar. All sorts of waste from the house can be utilized. Apple paring, for example, small potatoes and table scraps can be used advantageously if run through the meat grinder or else cooked and mixed witha little bran so as to make a crumby mash. Do not feed potatoes raw.

Cabbage is often used, but it is hard to keep very long in winter, and too much of it tends to impair the flavor of the eggs. Oats are easy to sprout, and if fed when about half an inch long, will provide green food while not wholly robbing the grain of its natural substance. Sprouted oats or sprouted barley are very useful feeds. Almost any of the grains can be used. Select those which are cheapest and most available. The writer has had very good success when he has fed only oats and cracked corn, with a mash of bran and beef scraps, supplemented by vegetables and green stuff. It has been learend during the last two years that there are no hard and fast rules for poultry feeding.



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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N. B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

Oh, heart of mine, we shouldn't worry so!
What we've missed of calm we couldn't have you know!
What we've met of stormy pain
And sorrow's driving rain
We can better meet again
If it blow.

—Susan Coolidge.

HER NEW YEAR'S DISCOVERIES

(By Sinclair Dunlop)

I suppose it is real, Sis, and that I really am awake and sitting here in conventional evening clothes, waiting for Bob to call around in his car and whisk me off to that dinner, but I can't quite settle myself to think that it won't all end in a twinkling."

"The dinner? Well, should say not if our respected uncle the Colonel is to make one of his famous speeches. You may settle yourself for the, once he gets started," and with a laugh Marcia Andrews swung herself round on the piano seat and faced her brother. "Sometimes, Phil, I do believe you are sorry it is all over, and you are safe and—well, if not quite sound, at least looking like your old self again in spite of the old heart weakness. If you only knew how we felt this time last year. It wasn't like New Year's at all."

"Wasn't it—I mean, of course, it wasn't," and Phil roused himself and peered out through the curtains to make sure that it was Bob Carson's car that was drawing up at the curb in front." "tI wasn't much like anything that I have ever known before, last New Year's wasn't," he went on, "Why that was the night—yes, coming, Bob. Be with you in a second," and not waiting to finish his sentence, Phil Andrews, late Sergeant B. Andrews of the X Battalion, Canadians, hurried into his coat and with a hurried word of good-bye, made his way to the door.

"Another story lost, and just as I was sure he was going to tell it. That's always the way. Someone has to interrupt every time he starts to tell us anything about the war, and dear knows it is hard enough to get him staraed to talk about it at all. I think Bob might have waited just a minute."

As Phil Andrews settled down into the comfortable seat of the waiting car outside, his sister pulled a comfortable chair up before the fire and reached for the magazine on the colored cover of which the light of the shaded table lamp was shining.

"A jolly New Year's Eve it's going t obe, I must say," she murmured, as she listlesly turned the pages. "Mother hurried oy at a moment's notice to the country to nurse Aunt Mary, Anne stilil working hard in the hospital, and Phil, who might have made things seem homelike and real, running off to an old military dinner. I don't believe there is a person in this whole city quite so desolate as I am, and on New Year's eve, too. I believe that even that frumpy little woman with the cross baby in the apartment above is better off. She is at least kept so busy with the baby that she doesn't have time to be lonely, I guess.

"If I were like the people in story books, or even like Anne, I suppose I'd go out and hunt up someone as lonely as myself—it would be impossible to find anyone lonlier—but I'm not—and—"

A shary cry from the apartment above interrupted Marcia's thoughts.

"That cross baby again. You'd think she'd try to do something to keep it quiet. People who live in apartments ought to remember that there are others to be considered."

She trned to her story again, but instead of ceasing, the cries from above grew louder, until Marcia, with the air of a martyr, laid down the magazine again and half rose from her chair.

"I believe I'll telephone up to her to please do something to keep her baby quiet. She has no right to disturb other pepole like this. If I only knew her name I would. I noticed it on the letter box the other day. Ball, or Ball or something like that, I believe."

Ten minutes later, when, after a short lull, the cries broke out afresh, Marcia not only rose from her chair, but walked determinedly toward the door.

"That settles it. If I have to stay in and spend a dull evening by myself, at least it is going to be a peacful one, and it isn't going to be spoiled by the howls of a cross baby. I'll run up and ask her to please keep it quiet."

The corridor into which the door of the Andrew's apartment led was unusually still as Marcia stepped into it and walked toward the elevator shaft. No light showed above the doors of No. 5 or 7, and she knew that No. 6, the apartment next their own, was still vacant. Pressing the button that brought the elevator up to the second floor, she waited until it came noiselessly up, then stepped in and pulled back the simple lever that operated the car. At the third floor she stepped out and turned toward Apartment No. 12, from behind the door of which the sobbing voice of the baby still came to her ears.

"I won't ring the bell, I'll knock and just ask her to please keep the baby quiet," she decided as she made sure of ther ight door. "I'll—"

But she had no time to decide what her next move would be. Almost before she had ceased knocking, a voice, which sounded plmost as tearful as the baby's, called out to her, and before she quite realized what she was doing, Marcia had pushed open the unlocked door and was standing in the hall of the apartment above her own.

"Oh, I'm so glad somebody has come," the voice went on. "I was afraid no one would, and I just didn't know what to do. It is so good of you, Miss Andrews," as Marcia came into the light.

"Yes—I'm Miss Andrews, and I came up—"

"It is more than good of you, Miss Andrews," and the owner of the voice tried to rise from the couch where she had been lying. "I was afraid everyone had left the building—it being holiday time and so many people away, you know—and I just didn't know how to get help. If we only had a 'phone, I could have called a doctor or someone, but we felt that we could get along without the luxury of a telephone until my husband was back at work again, and—"

"Is it your foot" asked Marcia, anxiously, quite forgetting in her suprise the errand on which she had come. "Have you hurt yourself?"

"Yes, it is my foot. I just don't know how I hurt it this time. My ankle has always been weak since I sprained it badly one summer, and now and then it gives out on me again, and I simply can't move about on it. I was hurrying around this evening getting my husband off—it's the first time he has gone to anything since he came home, you know—and I remember turning over on my ankle on the freshly waxed floor in the hall, but baby had to be put to bed and so much else to be attended to, that I just kept on until the pain got so bad that I had to give in. I have never been quite alone when it happened before. Of course, I wasn't alone this time, either, but I just couldn't spoil my husband's first evening out by bothering him about it, and I thought perhaps it wsan't going to amount to anything. I've never lived in an apartment before, you know."

Marcia didn't know. In fact, Marcia was appalled, as the little woman rattled on nervously, at the number of things she appeared not to know, not only about the other occupants of No. 12, but about the other dwellers in the Coronation Apartments.

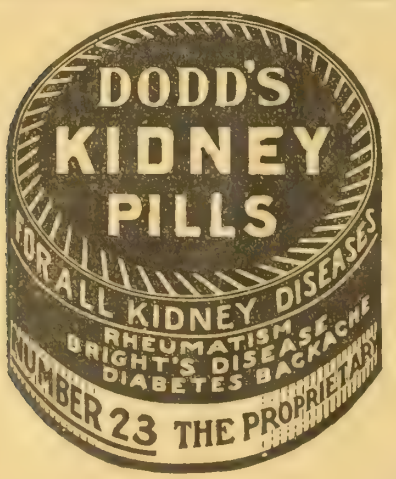
"I'm sorry," was all she could say but with a motion which she afterwards declared was quite as effective as if she had been Anne herself, she bent down and began to roll back the stocking rom the swollen ankle. "I'm so sorry. Has your husband been ill?"

"I'll? Why no, that is, he has been perfectly fine since coming back to Canada, and one would scarcely even notice that he limped. He is getting so used to the artificial limb now, too, and he doesn't feel nearly so sensitive about it. The doctors say his case is a marvel. They were afraid for a time that they were not going to save his life at all, and he says that if it hadn't been for the thoughts of seeing Baby Boy, who was born a few weeks after he went away, and of coming back to me, he wouldn't have even tried to pull himself together and get well. Now that he is back he will hardly allow Baby Boy out of his sight for a minute. I tell him he is spoiling him, and that he misses him so after he goes out each time that nothing will satisfy him. You should have heard him cry tonight, after his Daddy had gone."

Marcia might have added that she had heard him, but somehow, as she looked from the little woman whose ankle she was gently rubbing to the blinking baby now staring at her with wide-eyed curiosity, all memory of her annoyance seemed to have fled.

"He—seems to be quiet enough now, poor boy."

"Yes, he only needed to have his attention taken off his own small troubles, and when he saw his mother lying here and not trying to amuse him



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in the least, he didn't know what to make of it, did you, Baby Boy?"

A gurgle of assent was the only answer from the cot in the corner, and as Marcia bustled about, finding hot water to bathe the swollen ankle, and cotton with which to bind it, she felt that she must surely pinch herself to make sure that she was awake.

Then somehow Marcia began to feel that she had known the occuants of No. 12 for years and the sore ankle was almost forgotten by the little woman who sat propped up in the most comfortable chair in the room and drank the hot tea that her neighbor made for her.

"You seem to know just how to go about it," she said ahppily, and there is a knack in making good tea. I know there is."

It was an hour later when, Mrs. Bald tucked safely away in bed and the night light turned so that it would not shine on the sleeping baby in the cot. Marcia Andrews tiptoed out of Apartment No. 12 and, forgetting that there was such a thing in the world as an elevator, walked to the floor below.

"I don't know what Phil will say," she laughed softly to herself, as she opened the door of No. 8 and went in. "I had planned such a cozy New Year's dinner all by ourselves, with a car ride out to call on Bess Pringle in the afternoon. He has been so sensitive about meeting strangers since he came home, too. But then I can't help it. I simply couldn't sit there and think of that nervous little creature trying to get up a dinner and mind a fretful baby, with her foot in that condition. The husband is a soldier, too, so perhaps Phil won't mind so much."

The clock in the big firehall at the corner near the Coronation Apartments had just rung twelve when a step in the corridor told Marcia that Phil was home.

"Funny I didn't hear Bob's car," she said, as she roused herself from the doze into which she had fallen. "He usually toots the horn when he stops, but I suppose being so late he had the decency to be quiet for once. Why—he must be coming in," as her brother's voice could be heard with some of its old time ring in it.

But it wasn't Bob Carson who followed Phil into the room. The man who stood in the doorway waiting to be introduced was a complete stranger to Marcia, and yet there was something strangely familiar about him too.

"Oh, you're still up, Sis. Well, I'm mighty glad, though of course you ought to have been in bed hours ago getting your beauty sleep. But even if you had been, I'd have to waken you this time. Who do you think I have here?"

"Why—I—I don't know, Phil," and Marcia flushed in her embarrassment until her proud brother thought she had never looked prettier.

"No, of course you don't, at least not by sight, but you know a good deal about him by hearsay. This is Bill Bald, old Baldy who saved my life. There he was at dinner, sitting there as alrge as life, and when at last they decided that we must tear ourselves away from one another, what do you think I discovered? You'll never guess."

Marcia's brain was in a whirl, but as she looked again at the tall man, whose hand was stretched out to her, she remembered a photograph that stood on a mantel piece above a couch in Apartment 12, and, although she would not for words have spoiled Phil's "surprise" by guessing, she knew at once who Baldy was.

"I've found that Baldy lives here, too. Right in this apartment house, Sis. He has a wife and a baby, too, and we aren't going to do a thing but have a good time now that we are together again. Who'd have thought when we were sitting in that miserable dugout in France last New Year's day, trading good things that had come in our home boxes, that this New Year's—"

"You'd be dining together again in Coronation Apartment Toronto," finished Marcia happily. "Yes, I've been discovering things tonight, too, and Mrs. Bald is one of them. She has promised that they will come to dinner with us tomorrow, or rather today, I spppose I should say."

"Hurrah! Then it is to be a real happy New Year after all. Sis, you're no end of a brick to have thought of such a wonderful surprise. I didn't know you knew Baldy's wife," then as the door closed after the man to whom he owed his life. "But what are the other discoveries you have made tonight?"

"Oh, several," was the half laughing reply "but the biggest of all I think was that a neighbor may be one living up or down from one, as well as across or next door."

"Doesn't sound like much of a discovery, but you always yere strong on queer speeches anyway, Sis, and this is about as queer a one as you've ever made."

But Marcia was listening to a happf peal of laughter that come from Apartment 12, and really didn't seem to hear him.

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Red ink may be removed by soaking the stain in clear water to which ammonia has been added. The water will need to be changed several times.

India ink may be removed by washing the material in a warm soap solution.

Ink Stains on White Cotton or Linen Material

In many instances ink stains may be removed by soaking the stain in sweet or sour milk for a day or two. When this method is not effective, the material containing the spot should be placed on a shallow dish and a saturated solution of oxalic acid poured over the stains. The material should remain only a minute or two in the solution and then be thoroughly rinsed in clear water containing a little ammonia. If blue stain still remains the material may be placed in javile water for a few minutes. It should then be thoroughly rinsed in several waters.

BE COURTEOUS OVER 'PHONE

Let us at all times be courteous. For some unknown reason many people who profess to be well bred feel that they are privileged to be rude when talking over the telephone. For instance it is not uncommon to answer the phone and be greeted with the "Who is this " It is not at all probable that that same person would approach you on the street with the remark, "Who are you?" Yet the effect upon the person interrogated is much the same. Many persons object to giving their names or even telephone number from which they are talking. When one is given the desired connection by "Central" it might be well to say, "this is John Jones speaking, may I talk with Mr. Smith, please." Mr. Smith then knows with whom he is conversing or if some one else answers the phone Mr. Smith may be informed of who called. Many other instances might be cited in which conversation over the phone could be improved upon.

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COLDS, LA GRIPPE, AND THEIR COMPLICATIONS

(By William H. Galland, M. D.)

During the winter and the spring months colds, and la grippe become exceedingly common complaints. The children are particularly susceptible to colds on account of the great sensitiveness of their skin.

Just at this time of the year there is raging in this country a terrific epidemic of la grippe. It has been classified under the name of Spanish influenza. In reality it is the old-fashioned influenza or la grippe, appearing in a more virulent form. By virulent, I mean that the germ which is causing this present epidemic is a more virulent germ, due to peculiarities which we do not understand; and as a result people afflicted with la grippe are more acutely ill than with the ordinary old-fashioned influenza.

Remember that a simple cold is not la grippe. It is a grave mistake to confuse the ordinary colds with which people suffer with the true influenza, and it is important that you should be able to distinguish between in the beginning whether your child is a victim of a cold or whether the attack is one of true la grippe. This much is sure, the ordinary cold, properly treated in the beginning often can be quickly broken up, and it is true that what often apepars to be an ordinary cold in its beginning may prove within twenty-four hours to be a severe case of la grippe.

A cold or an attack of la gripe is due to an infection, just as much as measles or scarlet fever or diphtheria is due to an infection. The infection lodges in the muscous membrane of the nose and throat and the cold develops. Simple, ordinary infections produce simple, ordinary colds but if the true influenza germ once gains a foothold on the mucous membrane of the nose or throat, there develops a case of true la grippe.

Let us speak first of a simple cold, or what is commonly called coryza. We know that colds are due to the action of bacteria, because, as you yourself have often observed, when one member of the family becomes affected, several or even the entire family will suffer from colds within a short space of a few days.

In children, the principal thing you should do to avoid their catching cold is to tkeep them out of drafts, especially a draft blowing directly upon the head of the young baby. Babies and children should be kept in the outdoor air as much as possible, because fresh air will be your greatest prevention for colds. A child never should be allowed to go in over-heated and crowded places. The crowded school-room and the mofing picture house, especially the latter, are responsible for the dissemination of a great many contagious diseases. This is true especially during the fall and winter months. If one of your children contracts a cold, keep that child away from the rest of the family for two or three days until the cold has become entirely broken up. This prevents the infection from being carried to others. A child with a cold who coughs or sneezes into the faces of other children is surely transmittinf that infection to the other children.

The first symptoms of a cold are watering of the eyes. This may not always be present. Sneezing is common with running of the nose, with a tendency for the child to talk with a nasal tone. Usually, there is a little fever, a half degree or a degree. A cold is very troublesome in a baby because it obstructs the breathing and makes it extremely difficult for the baby to nurse.

A danger that you must always think of when there is a cold in the baby's head is an inflammation of the ears. If you find the little one constantly putting its hand to one of its ears and crying out as though in pain, do not hesitate to call your physician's attention to it at once, because the infection from the nose and throat so often travels up the eustachian tube, which leads from the throat to the middle ear, and pus forming in the middle ear will many times forcibly rupture the ear drum and leave the child with permanently impaired hearing, often actually deaf. The physician who recognizes this condition at once and opens the ear drum, to allow the pus to escape through a small incision, will save your child's hearing.

You naturally ask, "How is one to tell whether the attack is simply a cold or true la grippe?" Before speaking of the proper treatment of a cold, we will takeup the question of la grippe and how it differs from a simple cold in the head. La grippe, when it attacks a child, comes on with more acuteness, the child is more seriously ill. The fever in a simple cold, is one-half degree to a degree. but in la grippe the fever will rapidly mount to 102, 103 and sometimes higher. There will be the same running from the nose and probably the water discharge from the eyes, but there will be in addition, great prostration. The child will appear to be acutely ill, and as in adults who are attacked by la grippe, there is a severe headache and pains in the muscles of the arms, back and legs. You realize that a young child may not be old enough to tell you that it has a severe headache, and pains in the muscles of the arms, back and legs, but the child afflicted with la grippe when old enough, always complains of severe headache. There is practically always a sore throat and accompanying this sore throat in the first few hours, is a sharp, dry, harsh cough. This cough comes from irritation of the throat and of the mucous memberane of the bronchial tubes.

You will hardly ever make a mistake in distinguishing between a simple cold and la grippe, because of the difference in the severity of the symptoms. The child with a simple cold will continue to want to be up and play around the house, while a child with true la grippe is acutely and dangerously sick, and almost always prefers to remain in bed and usually cries if attempts are made to lift it about. This is because the muscles are so tender and painful that the lifting of the child causes it great discomfort.

When we come to the question of treatment, the first great step is prevention. That is why all our large hospitals today are in quarantine. Prevention in la grippe means quarantin eand it means a strict and rigid

Messages of Hope to the Old Folks

ISIDORE COMEAU SAYS DODD'S KIDNEY PILLS CURED HIM

Though Sixty-eight Years of Age, His Kidney Disease is Completely Gone, and He Gives All the Credit to Dodd's Kidney Pills.

Green Point, Gloucester Co., N. B., Feby. 2nd (Special.)—"I am sixty-eight years of age, but well and hearty.

"You can tell everybody that Dodd's Kidney Pills cured me of kidney disease completely.

"I want everybody to know how thankful I am to Dodd's Kidney Pills."

Thus does Mr. Isidore Comeau, well known and highly respected here, express his gratitude to the remedy to which he gives the credit of making him well. And his words are a message of hope to the men and women of Canada who are nearing the allotted span of life.

It is the kidneys that first feel the wear and tear of a long life. Theirs has been the work of keeping the blood free from those impurities that are the seeds of disease.

Nine-tenths of the ills from which the old folks suffer are directly due to weak or diseased kidneys. Ask your neighbors if Dodd's Kidney Pills are not the remedy they have been looking for.

WIN This Real Gasoline Auto for Boys and Girls

$150.00 in other Prizes

SOLVE THIS PUZZLE

23	8	5	14	•	7	5	18
13	1	14	25	•	9	19	•
4	5	6	5	1	20	5	4
•	1	14	4	•	14	15	20
•	1	•	13	9	14	21	20
5	•	2	5	6	15	18	5

This foretold when the War would end. What does it say?

CAN you work this out? Do you want to know how it was decided long before peace came when the war would be over? The answer is contained within the 48 squares above. What is this answer? Solve it and valuable prizes await you.

HOW TO SOLVE IT

The above squares hold the answer. It is in one sentence of nine words, containing forty letters. Each letter is represeated by a number, and that number is the position of the letters in the alphabet. For instance, A is represented by the figure 1, as it is first in the alphabet, and so on. Now, to help you get started, we will tell you that the first letter in the puzzle is "W," because W is the 23rd letter in the alphabet. Get to work and figure out the words in the sentence, and try to find the answer to the great question, "When will the war be over?" It is not easy, but it is worth while trying for.

THE PRIZES

PRIZE	VALUE
1st—Five Horse Power Auto	$150.00
2nd—Dandy Folding Camera	25.00
3rd—Magnificent Gold Watch and Chain, or Girl's Wrist Watch	15.00
4th—Lovely 36-inch Doll, handgowned, and beautiful English Doll Carriage	10.00
5th—Electric Projectoscope. Better than a magic lantern. Will show any picture or postcard photo on screen	7.50
6th—Full-size Football	5.00
7th to 10th—Self-Filler Fountain Pens, each $2.50,	10.00
Also 10 Extra Prizes for Boys and Girls, each $1.25,	12.50
Total Value of Prizes	$235.00

Copy your answer upon a plain white sheet of paper as neatly as you can, because neatness, spelling, hand writing, and punctuation count if more than one answer is correct. Put your name and address in the top right hand corner of the paper. If you have to write a letter, or show anything else, put it upon a separate sheet of paper. We will write as soon as your answer is received, and tell you if your solution is correct, and also send you a complete illustrated list of the grand prizes that you can win.

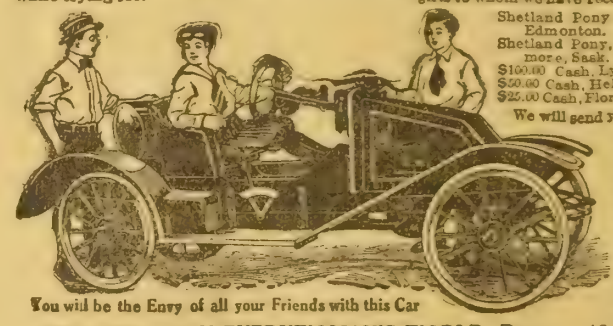
What Others Have Done, You Can Do

Here are the names of only a few of the boys and girls to whom we have recently awarded big prizes—

Shetland Pony and Cart, Helen Smith, Edmonton.
Shetland Pony, Beatrice Hughes, Hazenmore, Sask.
$100.00 Cash, Lyle Benson, Hamilton, Ont.
$50.00 Cash, Helen Benesch, Junkins, Alta.
$25.00 Cash, Florence Nesbitt, Arnprior, Ont.

We will send you names of many others, too. Only boys and girls under 17 years of age may send answers, and each boy or girl will be required to perform a small service for us for which an additional valuable reward or special cash prize will be given. The contest will close on March 31st at 5.30 p.m.

Send your answer this very evening. Address:



You will be the Envy of all your Friends with this Car

THE AUTO-MAN EVERYWOMAN'S WORLD, Dept. 10 TORONTO, ONT.

Enquiries Appreciated Concerning

Shingle Machines, Lath Machines,

General Lumbering Equipment,

Contractors' Supplies, Furnaces, Stoves, Implements

The Smith Foundry Company, Limited,

FREDERICTON, New Brunswick

Helping Nature,—the Key to Good Health

Watch for these Symptoms

Kidney or Bladder affections don't develop seriously until Nature has given you plenty of warning that the trouble has commenced.

Constant headaches, dizziness, pains in the back or sides, swollen joints and ankles, brick dust deposits, or painful urination should make you realize positively and beyond doubt that your kidneys are out of order and need assistance.

Nature is wise and never sends out unnecessary or foolish warnings. Her call is for help, and you must do your part by bringing relief to those overburdened kidneys, or suffer the consequences.

Rheumatism, Lumbago, Sciatica, Gravel, Stone in the Bladder, Neuralgia, etc., are all caused by inflamed or congested kidneys and the consequent deranged kidney action. Don't suffer the agonies produced by these diseases. Help Nature to relieve the congestion—to heal those inflamed kidneys and to make them strong once more—by taking Gin Pills.

Gin Pills are the best remedy for Kidney and Bladder troubles on the market to-day. This is a fact proven by hundreds of testimonials. Try them and be sure of instant relief. For sale everywhere at 50c a box. A sample box free if you write to—

The National Drug & Chemical Co. of Canada, Limited, Toronto, Ontario. U. S. residents should address Na-Dru-Co., Inc., 202 Main St., Buffalo, N.Y. 173

quartine. You have no right to send your child to school with a cold. It may be a beginning grippe and that child can infect scores of children during teh day. If your child develops la gripe, or a condition which is even suspicious of la grippe, that child should be placed in a room by himself and should be put to bed and your physician promptly sent for. You may have other household duties to attend to and it may be impossible for you to get help to wait on that child. If that is the case, when you go into the room you should slip over your dress an apron which completely covers it. You should make a mask of four to five layers of gauze and fasten it over your nose and mouth; this you must do because when bending over the bed your child may accidentiy sneeze or cough directly into your face and you may then become the victim of la grippe. When the germ has lodged in your nose or throat, you become a carrier of this infection to the other members of the family. It is a simple matter to slip off the apron you have worn over your dress and to remove the mask you have to protect your nose and mouth, when you leave the room.

One child quarantined properly in the very beginning will almost always save the other members of the family from an attack, but one child not quarantined with la grippe will mean that the disease wil be communicated to every member of the family.

There are several reasons, besides the mere fact of protecting the other members of your family, why you should quarantine your child and put it absolutely at rest in bed. In la grippe, and also in simple colds, complications are common and it is the complications which render la grippe so dangerous to human life. Perhaps the most common of these complications is pneumonia, and it is certainly the most dangerous. A grippe infection, when it has once gained its entrance into the nose and throat, can easily travel down the bronchial tubes to the lungs and a gripe-pneumonia is a most dangerous and fatal form of pneumonia, especially in childhood. A child that is put to bed promptly and is given corect treatment from the beginning stands a far greater chance of escaping any serious complication.

Your natural question, "What am I to do until my physician arrives?" Unfortunately many of you in times of war are being deprived of the advice of a physician, especially the physician who has been your counsellor for years. The first thing to do, as soon as the early symptoms begin, is to give the child a hot bath and a hot mustard foot bath. As soon as this is given, put the child to bed, warmly covered in a warm room that is well ventilated. Remember these points, they are all important.

A light diet should be given at all times. Older children should not be given any solid food and the nursing baby should only be aollwed to nurse about one-half the usual time. Empty the bowels at once. I mention this point because sometimes in la grippe the symptoms are principally referred to the stomach and bowels. Instead of severe congestion in the head, there will ofttimes be pain the stomach with vomiting and diarrhoea. This is because the infection has gotten down into the stomach and bowels. A good dose of castor oil in the beginning is essential whether the grippe be the type which is confined to the nose, thrat and chest, or whether in the stomach and intestines.

Many different drugs have been used and all of them with varying success. Whether the attack starts as a simple cold or whether it develops within a few hours to a case of la grippe, I believe the best preparation to use (and it should always be used under your physiciain's direction) is a combination of camphor, belladonna and Dovers powder, the dose varying, of course, with the age of the child. In an acute cold this combination works beautifuly and in a beginning attack of la grippe it ofttimes will block the attack within the first few hours. This combination can be given in tiny doses in powders to your babies. To older children, it can be given in larger doses, also prepared in powders, and dissolved in a little milk or peach juice.

One of the distressing symptoms is the discharge from the nostrils. This, as I have mentioned, often obstructs the breathing and makes nursing difficult, and makes it necessary for the child to breathe constantly through the mouth. I have found that if about one grain of menthol be dissolved in one ounce of liquid alobin and two or three drops of this be instilled into each nostril with a medicine dropper every hour, it will greatly relieve the congestion of the nose and make the breathing of the child easier. In older children, it is not necessary to use the medicine dropper. You can use the same combination in a spray and spray both nostrils thoroughly and frequently.

Croup

It is important that, in conjunction with the subject of colds and la grippe we should mention spasmodic croup.

Croup, while it may appear to be very alarming, is not dangerous. It is almost always the result of exposure to cold, but may be due to indigestion or some iritation in the throat. It is for this reason that croup often develops in conjunction with cold in the head. It is a strange fact that some children seem especially liable to repeated attacks, while other children can suffer from repeated colds without any symptoms of croup. Croup usually begins with a hoarseness, especially late in the afternoon or, as evening comes on, there develops a peculiar sharp, racking, metallic cough. Frequently, you will find the child will go to sleep and sleep soundly for three or four hours after being put to bed and then suddenly awaken and sit upright in bed grasping at anything it can reach and appear to be unable to get its breath. The cough then becomes very loud and the breathing hard. If the little one attemps to speak, the voice is extremely hoarse. This may last for one-half to an hour, or even sometimes for several hours before the spasm seems to relax and the child drops to sleep. Unfortunately other attacks may recur for several nights in succession. The time in a child's life when croup is most liable to occur is around the third or fourth year and the attacks will decrease in frequency and usually disappear entirely by the sixth year.

The treatment of croup is one of prevention. A child subject to croup should be guarded with great care against exposure to draft, to high winds and to dampness. If the little one is subject to croupiness in the afternoon or evening, the mother should begin by administering some medicine. Perhaps the best thing to use until the physician arrives is a mixture made up of two and one-half teaspoonfuls of the syrup of ipecac, one-half teaspoonful of potassium bromid dissolved in two ounces of water. A child two years of age can take one teaspoonful of this mixture every hour for three or four doses. When the attack comes on in the night and the child is in a serious condition there are two things to do. One is to get the child to vomiting and the other is to place the child imediately in a hot bath. Many children, if they can be made to vomit, will be promptly relieved from the spasm. There are several household remedies you can use to cause vomiting and I will give you three or four of them here:

1.—A teaspoonful or more of syrup of ipecacuanha, repeated in fifteen minutes.

2.—A glas of warm water with as much common salt as it will dissolve.

3.—A half-teaspoonful of powdered alum stirred up in syrup or in molasses.

4.—A teaspoonful of mustard in a large quantity of warm water, if other emetics fail.

The other treatment of value is the inhalation of warm steam vapor. The easiest and most practical place for the child is in its crib, which should be covered with a sheet. An open umbrella may be substituted when a crib is not available. Under the umbrella, which rests upon the bed, lies the child, and covering all is a sheet pinned to the umbrella. If preferred, the open umbrella, draped as before, may be placed over the baby-carriage. Any means or apparatus is adequate which will furnish steam and conduct it to the inclosed space The Holt croup kettle, when obtainable, is always to be used. The steaming may be continued for hours. The sheet should be removed occasionally for a few moments, in order to allow a change of air. Usually a child may be kept under the tent from twenty minutes to one-half hour without such a change. The tent is seldom so close as to prevent all ventilation.

ROOT AND FODDER CROPS

The total yield of turnips and other roots is estimated at 120,767,900 bushels from 343,037 acres, an average per acre of 352 bushels, as compared with last year's total of 63,451,000 bushels from 218,233 acres, the average yield per acre being 290¾ bushels. Hay and clover give the record yield of 14,595,500 tons from 10,544,625 acres, an average yield of 1½ tons. The corresponding figures last year were 13,-684,700 tons from 8,225,034 acres, or 1¾ tons per acre. The previous record yield of hay and clover was 14,-527,000 tons in 1916. Teh average value per ton of hay and clover is $9.75 as against $10.33 per ton last year. Alfalfa shows a yield of 448,600 tons from 196,428 acres, or 2¼ tons per acre as compared with 262,400 tons from 109,825 acres, or 2½ tons per acre, last year. Of fodder corn the estimated yield is 4,203,150 tons from 502,069 acres, an average per acre of 8¼ tons.

The total are a under root and fodder crops, including potatoes, turnips, etc., hay and clover alfalfa and fodder corn amounts to 12,321,351 acres, as compared with 9,576,568 acres in 1917. In total value at local prices these crops amount for 1918 to $330,975,825, as compared with $268,310,300 in 1917.

OIL FOR LOUSY PIGS

Crude oil is coming into general use as a means for keeping hogs free from lice. Some put a gallon of oil on a water pool and allow the pigs to wallow in it, which they do with evident delight. The oil may be added every four weeks or so. It is not so good a plan to oil them in the winter as the oil gets cold, even when aplied by a sprayer. One of the commercial disinfectants that quickly dry up are the best for winter months.

I KNOW A WOMAN'S SUFFERINGS

I am a woman.

What I have suffered is a far better guide than any MAN'S experience gained second-hand.

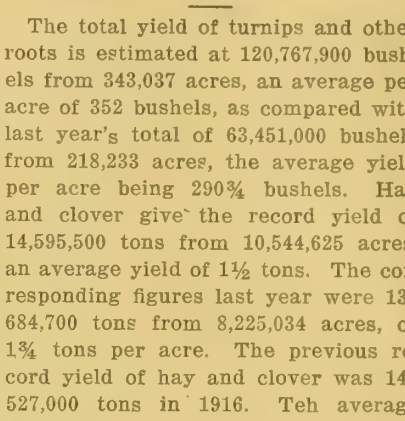
I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight aud dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

MRS. M. SUMMERS, Box 309



Read My FREE Offer:

To Mothers of Daughters, I will explain a simple home treatment which speedily and effectually dispels green-sickness (chlorosis), irregularities, headaches and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten day trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

Windsor, Ontario

Laid Up For 2 Months

WITH PAINS IN BACK.

Pain in the back is one of the first signs showing that the kidneys are not in the condition they should be, and it should be gotten rid of immediately, if neglected, serious kidney troubles are likely to follow.

There is a way to "shake off" for ever the constant pain of backache, the annoyance of urinary troubles and all dangers of kidney ills. Go to your druggist or dealer; get a box of Doan's Kidney Pills; take a few doses, and see how quickly your backache will disappear.

Mr. Hugh Morton, Daysland, Alta., writes:—"I am glad to feel it my duty to let you know what great relief I found by using your Doan's Kidney Pills. I was laid up for two months with pains in my back and I found relief after having taken half a box of "Doan's." I cannot recommend them too highly to anyone having weak kidneys, as they have been a great help to me."

The phenomenal success of Doan's Kidney Pills in all parts of the world has brought forth many imitations. See that you get "Doan's" when you ask for them. Our trade mark "The Maple Leaf" is on every box. Price 50c. at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

BUTTERMILK RECIPES

These May Be Used When Sour Milk and Butter Are Scarce

The following recipes should all be made with buttermilk, though butter and sour milk may be used:

Brown Bread

Mix two cupfuls of buttermilk, half a culpful of molasses, half a teaspoonful of salt, one of soda, two cupfuls of cornmeal and a cupful each of Graham and wheat flour. Beat well, pour into a greased mold, cover closely and steam three hours. Sifted bran, finely ground oatmeal, buckwheat or rye flour may be substituted for the Graham flour wtih equally satisfactory results. Another change may be made by adding half a cupful of chopped dates, nuts or raisins.

If the bread is desired for sandwiches use one cupful of cornmeal, one of Graham flour or sifted bran, one of rye or buckwheat flour and one of wheat flour. Pour into well-greased baking powder cans, cover closely and steam one hour. This makes an excellent fine-grained bread that can be sliced just as thin as desired.

MINARD'S
"KING OF PAIN"
LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

Graham Muffins

Beat well two cupfuls of buttermilk, one teaspoonful of soda, half a teaspoonful of salt, two tablespoonfuls of molasses, three cupfuls of Graham flour or one cupful and a half each of Graham and wheat flour; bake in a moderate oven.

Johnny Cake

Beat well two tablespoonfuls of sour cream, one cupful of buttermilk, half a cupful of sweet milk, a qutrter of a cupful of sugar, one egg, one cupful and a half of flour sifted with half a teaspoonful of salt and one teaspoonful each of cream of tartar and soda, and one cupful and a holf of corn meal. Bake in shallow tins. Buckwheat or Graham flour may be substituted for the corn meal if preferred.

Griddle Cakes

Beat well one pint of buttermilk, half a teaspoonful of salt, one teaspoonful of soda, and flour to make a thin batter. Bake a golden brown on a not-too-hot griddle. A mixture of of half buckwheat and half wheat flour makes especially delicious hotcakes. Serve with maple syrup.

Cookies

Mix one cupful of sour cream, half a cupful of buttermilk, one cupful of molasses, one heaping teaspoonful of soda, half a teaspoonful each of salt, ginger, cloves, cinnamon and extract of lemon, and flour enough to roll. Cut in any desired shape, press a raisin or a square of citron into the center of each and bake in a moderate oven. When cold, ice with an icing made of two tablespoonfuls of thin, sweet cream and powdered sugar enough to thicken. This recipe is especially good for making animal or dool cookies for children.

Waffles

Mix one cupful of sour cream, one cupful of buttermilk, two scanty cupfuls of flour sifted with one small teaspoonful of soda and a pinch of salt, three well-beaten eggs. Beat well and bake as usual.

Crullers

Mix quickly, with just enough to roll, half a cupful of sour cream, one cupful each of sugar and buttermilk, one egg, half a teaspoonful of salt, one of soda and one of nutmeg or cinnamon. Cut in any desired shape and fry in deep fat.

Doughnuts

Mix a third of a cupful of sour cream, one cupful of sugar, one egg, one cupful of buttermilk, one teaspoonful and a half of cream of tartar, one teaspoonful and a quarter of soda, half a teasponful of salt, one teaspoonful of nutmeg or cinnamon or half a teaspoonful of each, as preferred, flour enough to roll. Fry in deep fat and drain on brown paper.

Gingerbread

Beat well half a cupful of sour cream, one cupful of buttermilk, one cupful of sugar, one cupful of molasses, two cupfuls and a half of flour sifted with half a teaspoonful of salt and one teaspoonful each of ginger, cinnamon, cloves and all spice, two eggs. Bake in a quick oven.

Caraway Cookies

Mix one cupful of sour cream, half a cupful of buttermilk, two eggs, half a teaspoonful of salt, one teaspoonful of soda, caraway seeds to taste and flour enough to roll. Currants may be substituted for the caraway seeds or the cookies may be dredged with cocanut.

FREE PRIZE PUZZLE $4500.00

In Cash has been Given Away FREE also hundreds of Merchandise Prizes

$2000.00 more IN CASH will be Given Away as follows

1st Prize, $50.00 in Cash. 2nd Prize, $40.00 in Cash
3rd Prize, $35.00 in Cash. 4th Prize, $25.00 in Cash
5th to 9th Prizes—Each **$10.00** in Cash.

TOGETHER WITH MANY MERCHANDISE PRIZES

Herewith will be found the picture of an Aviator who has just dropped a bomb on a pile of Shells. At first glance the Airoplane and the Explosion appear to be all there is in the picture, but by careful study the faces of several soldiers will be found. There are 7 of them in all. Can you find them? It is no easy task but by patience and endurance can be accomplished.

You may win a cash prize by doing so. Many have done this as will be shown by the names and addresses which we will send you. If you find the faces mark each one with an X, cut out the picture and send it to us, together with a slip of paper on which you have written the words "I have found all the faces and marked them." Write these nine words plainly and neatly, as in case of ties, both writing and neatness are considered factors in this contest.

This may take up a little of your time but as TWO HUNDRED DOLLARS in cash and many merchandise prizes are given away, it is worth your time to take a little trouble over this matter. Remember all you have to do is to mark the faces, cut out the picture and write on a separate piece of paper the words, "I have found all the faces and marked them."

WE DO NOT ASK YOU TO SPEND ONE CENT OF YOUR MONEY IN ORDER TO ENTER THIS CONTEST

Send your answer at once; we will reply by Return Mail telling you whether your answer is correct or not, and we will send you a complete Prize List, together with the names and addresses of persons who have recently received over Four Thousand Five Hundred Dollars in Cash Prizes from us, and full particulars of a simple condition that must be fulfilled. (This condition does not involve the spending of any of your money.)

Winners of cash prizes in our late competitions will not be allowed to enter this Contest.

This Competition will be judged by two well known business men of undoubted integrity, who have no connection with this Company, whose decisions must be accepted as final.

Upon receipt of your reply we will send a complete list of the names and addresses of persons who have won $4,500.00 in Cash Prizes in recent contests held by the publishers of this advertisement. Although these persons are entirely unknown to us, they are our references. An enquiry from any one of them will bring the information that our contests are carried out with the utmost fairness and integrity. Your opportunity to win a good round sum is equally as good as that of anyone else, as all previous winners of cash prizes are debarred from entering this contest.

Send Your Reply Direct to
GOOD HOPE MANUFACTURING COMPANY
46 ST. ALEXANDER STREET, MONTREAL, CAN.

Date Gems

To one pint of Graham flour and one pnit of white flour add half a teaspoonful of salt, one level teaspoonful of soda, a quarter of a cupful of sugar, one cupful of dates—stoned and cut in smal pieces—and lastly enough rich buttermilk to make a stiff batter. Drop in hot, well greased gem pans, half filling each, and bake in a quick oven until a golden brown. Raisins may be substituted for dates and instead of making a stiff batter less buttermilk may be used, the dough quickly turned out on a board, rolled half an inch thick, cut into biscuits, and baked in a quick oven.

Cake Frosting

Put three-fourths of a cupful of buttermilk into a graniteware saucepan and add three-fourths of a cupful of sugar. Bring the mixture to the boiling point and let it boil until it forms a soft ball when tried in cold water. Remove from the range and beat until it becomes thick and is of the right consistency to spread.

LET THE CHILD CHOOSE

Don't make me do it, mamma, let me do it," pleaded a little fellow one day when his mother was trying to exercise rather arbitrary authority.

A smal lboy was objecting to doing an errand for his mother. She said pleasantly, "I can manage if you do not do it, but I can get my work out of the way much sooner, if you do. Supposing I let you choose whether you will acocmodate me, or I accomodate you. I'll say nothing more about this, and you may do just what you think it is fair for a boy to do by his mother." It did not take long for the son to choose the better way and to walk off proud of his independent action.

Coaxing a child to do what he ought to is a questionable policy. yet in a dignified, matter-of-fact manner to show him that you give him credit for common sense and a fair amount of amiability and right purpose is to encourage him to use those qualities. It ihelps him to do his best in the best possible way—he chooses his own action, and can choose again.

LABELLED GOODS

"Made in Canada" will without doubt soon become a slogan and purchasing guide throughout this country.

The maker's name or trade mark on all goods has, for years, been the customer's greatest protection against deception, short weight or poor quality.

Many have been too careless or indifferent, in the past, to look for the name on label, sealed carton, stamp or plate, or whatever may have been used to indicate the origination and the responsibility of manufacture and sale of goods they purchased.

Many others thoughtlessly supposed that they got greater value for their money when they bought from bulk or securing what looked like a bargain but which did not bear the name of a reputable manufacturer.

But from now on there will be a patriotic reason for knowing the source of any article we buy in the retail stores.

Bulk goods may or may not be "Made in Canada," unless such goods are put up in packages and properly labelled we will not be satisfied.

It will be a good thing because it will make us more careful. It will make the manufacturer and the dealer careful too, and we will get more and better goods for the money.

As different brands become better known to us we will learn how to discriminate.

All manufacturers and producers should be urged to label their goods in some unmistakable way so as to protect the interests of Canadian products against the advance in our midst of any German product with its origination cleverly concealed or merely lacking any evidence of German identification. Labelled or declared goods will be in demand as never before. The unnamed or unidentified goods will be looked on with suspicion and classed as doubtful.

TO SEW BUTTONS ON COATS AND CLOAKS

"Although it is necessary to sew the buttons very securely on coats and cloaks, there must be no marks or stitches on the under side of fronts or collar to even suggest the location of the buttons except in a few cases where a small button is used on the under side as a stay," says Chalrotte E. Carpenter, of the Colorado Agricultural College.

"Tie a small knot in the end of strong, double waxed thread. Take a small stitch through the upper thickness of the garment at the point marked for the position of the button; take a second stitch through the shank of the button or put the needle up and down through the holes. In the latter case a pin should always be laid across the button and under the thread shank. Repeat six or eight times, keeping the same tension and alternately taking a stitch in the material and then carrying the thread through the shank or holes of the button. While sewing, the button should be tipped a little to one side so the needle can be brought out from the under side of the button before it is carried through the material. If the button has holes, the pin is removed and the working thread wrapped four times around the other threads and then fastened by taking three or four back stitches on the right of the garment close to the thread shank.

"When using the small button on the under side, begin in the same way but each time put the needle up or down through the garment and the upper and under buttons. The under button should have the same number of holes as the upper one and the holes should be large. A pin should be laid across the upper button and the thread shank and the fastening should be made in the way described above."

"Whatever is the Matter, Jack, You Don't Look Well!"

"OH, I'm all right."

"But you're not. You look so worried and tired."

"Well, I haven't been sleeping very well lately."

"No, and you don't seem to have any appetite. I think you ought to take something to tone up your system."

"Oh, no, I don't need any medicine. I guess I will soon be all right."

"But you should not neglect yourself, for that is just the way I was before I had nervous prostration, and you know what a long time I was laid up."

"Well, I haven't any time to be laid up, that's a sure thing."

"I know what I am going to do. I am going to buy half a dozen boxes of Dr. Chase's Nerve Food and see that you take it regularly."

"You know, Jack, that nothing seemed to help me like Dr. Chase's Nerve Food, and I am sure it will be just as good for you."

"You will take it, won't you?"

"I'll do most anything to get feeling better, for I know I have been losing my grip on business lately."

"I get up feeling tired in the mornings, and have to drive myself to do the work that used to be a pleasure for me. I have got in the way of putting off matters that need attention, and hate to meet people when I know that some energy will be required to discuss business deals with them."

"You'll take the Nerve Food, won't you?"

"Oh, I'll let you be the doctor, and if the Nerve Food builds me up like it did you I'll soon get back my old-time vigor and be able to make things hum. I have been rather discouraged lately, but I can see now that the trouble is in the condition of my nervous system. So you get the Nerve Food and we'll see what it will do."

Dr. Chase's Nerve Food, 50 cents a box, 6 for $2.75, all dealers, or Edmanson, Bates & Co., Limited, Toronto. Every box of the genuine bears the portrait and signature of A. W. Chase, M.D., the famous Receipt Book author.

TO IMPROVE CABBAGE SALAD

I have dscovered that a cup of chopped celery, or, if celery is out of season, a liberal sprinkling of celery salt will greatly improve any cabbage salad or cold slaw.

KEEPING SNAPS SNAPPED

One usually has a partly used card of snap fasteners in her sewing basket; so when taking snaps from an old garment, instead of throwing them into a box to be lost or mismated, let her fasten them upon this card with the unused ones.

TO PREVENT EYEGLASSES FROM STEAMING

Eyeglasses may be kept from steaming by rubbing the lens with vaseline, then polish them with a silk handkerchief or a bit of chamois.

There is no waste so irretrievable as that of a nation which is careless of its rising generation. And the goal is not an industrial machine, a technical workman, a 'hand,' available merely for the increase of material output and the acquisition of a wage at the earliest moment, but a human personality, well grown and ready in body and mind, able to work, able to play, a good ctzen and ahealthy parent of a future generaton."

If your child has a room to himself he will take pride in making it beautiful—that is, if you give him full liberty to decorate it as he thinks best. The tastes of children differ widely. You cannot make a boy or an out-of-door, athletic girl love and cherish a dainty pink-and-white room. On the other hand, the room of boyish crudenes and simplicity will chill the heart of a girl whose tastes run to frills and fine needle work.

MARKETS.

CHARLOTTETOWN

MARKET REPORT

Jany 28, 1919.

Beef, Carcass, cow, 13c to 15c per lb.; Ox, 14c to 16½c.

Beef, Retail, cow, 20c to 22c per lb.; Ox, 22c to 24c lb.

Veal, None.

Hogs, dressed select, 19½c; Heavy, 14½c.

Lamb, carcass, 22c to 24c.

Mutton, carcass, 16c to 18c.

Beef Hides, 15c lb.

Sheep Skins, $3.00 to $3.50 each.

Calf Skins, 30c lb.

Potatoes, 50c to 60c per bushel.

Carrots, $1.25 to $1.50 per 100 lbs.

Turnips, 20c to 25c per bushel.

Parsnips, $2.00 to $2.50 per 100 lbs.

Oats, 70c to 75c per bushel, market week.

Cornmeal, $3.95 to $4.25 per bag.

Bran, $2.20 to $2.25 per bag.

Oatmeal, $6.00 to $6.25 per bag.

Middlings, $2.50 to $2.60 per bag.

Oil Cake, $3.75 to $4.00 per bag.

Ontario Flour, $12.00 to $12.50,—Woods.

Manitoba Flour, $12.50 to $12.75—Woods.

Chickens, 28c to 32c per lb.

Fowl, 18c to 24c per lb.

Turkeys, None.

Geese, None.

Butter, Creamery, 50c to 53c per lb.

Butter, Dairy, 40c to 45c per lb.

Cheese, 25c to 27½c, per lb.

Hay, loose, 95c to $1.00 per 100 lbs.

Hay, Pressed, $18.00 to $20.00 per ton.

Straw, loose, 50c to 65c per 100 lbs.

Straw, Pressed, $12.50 to $14.00 per ton.

Eggs, 52c to 55c per dozen.

MONTREAL

Dairy Produce Trade

Montreal, Feby 1st.

The receipts of butter today were 461 packaes as compared with 522 for the same day last week, and 37 for the corresponding date a year ago. There were no new developments in the concition of the market today, prices being firmly maintained with a steady demand for supplies, and a fair amount of business continues to be done in a wholesale and a jobbing way. The demand for oleomargarine has improved of late, and the movement has been larger in a jobbing way at 33c to 34c per lb.

We quote wholesale jobbing prices as follows:

Finest creamery.....53c to 54c
Fine ceramery.....52c to 52½
Finest dairy.....45c to 46c
Fine dairy.....41c to 43c

The receipts of cheese today were 11 boxes, as against 153 for the same day last week, and 113 for the corresponding date a year ago. Owing to the very small supplies coming forward from the country and the light stocks held on spot, the volume of business in all directions is small and the market is quiet with a firm undertone.

The following prices are being paid by the Commission:

No. 1 cheese.....25c
No. 2 cheese.....24½c
No. 3 cheese.....24c

New York, January 29.—Butter, weak. Receipts, 8,770 tubs. Creamery, higher than extras, 47½ to 48c; creamery, extras, 92 score, 46½c to 47c; firsts, 44c to 46c; packing stock, current make, No. 2, 34c. Cheese, irregular. Receipts, 1,267. State, whole milk, flats, current make, special, 34½c to 35c; do. average run, 34c.

EGG PRODUCTION INCREASING

Montreal, Feby. 1.—The mild weather is beginning to have a material effect on production. Receipts at consuming centres have shown a marked increase, and dealers have found it necessary to reduce their jobbing prices to keep their floors clean. About the middle of the week the price of specials at Toronto dropped to 65c and by Saturday 65c was the most general quotation for this grade. On the Toronto farmers' market the retail price was 70c. Ontario country shippers report having paid during the week 53c to 55c for straight gathred eggs and made sales on a basis of 58c to 59c f.o.b. cases returnable. For this week country shippers say they are only offering 50c, one shipper said that the best price he had been offered so far for this week's shipments is 54c f.o.b. Storage eggs are about at an end for this season. Those dealers who still have some are asking from 53c to 55c candled.

In the Western Provinces production is increasing, but not yet sufficient to fill local requirements. Calgary is the first point to make large importations of States eggs this year, one car from Washington being received last week with another due yesterday (Monday). These eggs are jobbing at twenty dollars per case. The shipment of three thousands cases Chinese shell eggs scheduled to arrive by the Monteagle did not materialize. So far British Columbia importations of States eggs are only in small quantities.

The United States markets developed some weakness during the week, due to increasing receipts and moderate demand. Chicago dropped to 54c to 55c for firsts and today showed a further decline to 53c. The difference between the price of storage and fresh is so close now that most of the trade are taking fresh and the tone of the storage market is easier in sympathy. There are very few storage left, however, to be any factor of consequence.

The future for the next few weeks is full of uncertainty, prices may soon reach a point where increasing consumption will overtake receipts, in which case a temporary advance in prices will occur, but this can only be temporary and a gradual setting of values can be looked for. The situation is too uncertain to hazard an opinion as to the immediate future, careful traders are keeping their floors cleaned up daily.

There was no important change in the condition of the local egg situation today, but the undertone to the market is easy, and the prospects are for lower prices in the near future if supplies for new laid stock continue to come forward freely. The demand is steady for small lots, and a fair trade was done in a jobbing way. The receipts today were 265 cases, as compared with 231 for the same day last week, and 118 for the corresponding date a year ago.

We quote wholesale jobbing prices as follows:

THE PROVISION MARKET

Montreal, Feb. 1.—A weaker feeling has developed in the Canadian live hog situation since Monday, which resulted in a decline in prices in the Toronto market of 50c per 100 lbs. with sales at $16 to $16.50 per 100 lbs. fed aind watered, and in the Winnipeg market selected lots are 25c per 100 lbs. lower at $15.25 per 100 lbs. weighed off cars In sympathy with the above the Montreal market was weaker today and trade was very quiet on account of the limited supplies coming forward, anad the few small lots of selected stock offered at $16..50 per 100 lbs. weighed off cars There was no change in prices for dressed hogs, but the undertone to the market was easy. The demand was principally for small lots to meet immediate wants with supplies ample and sales of country dressed light adn medium weights wer made at $20 to $22, and heavy weights at $18 while city dressed abattoir fresh-killed hogs were quoted at $23 per 100 lbs. At the meeting held at Washington on Tuesday, of the United States hog committee at the Food Administration office, it was unanimously agreed that $17.50 per 100 lbs. would be the price for live hogs for the month of February which figure has been maintained since last November

THE CATTLE MARKET

Montreal, Feb. 1.—At the Canadian Pacific Live Stock Market, the offerings today amounted to 300 cattle, 250 sheep and lambs, 200 hogs and 100 calves. Owing to the further weakness in prices for lambs and another decline in prices at $1 to $1.50 per 100 lbs., a feature of the trade at this market has been the demand from American buyers for suplies, and shipments so far of 5 cars were made to New York ,and in adition tothis 3 cars of cattle were shipped to Jersey City

FARMERS

MAKE your banker your financial adviser. Let him help you to shape your affairs so that he will be warranted in giving you ample credit to operate your farm efficiently. Our aim is to assist you in every way possible.

THE CANADIAN BANK OF COMMERCE

2A

Ingersoll Reliance

A Master Seven Jewel Watch

AS a watch investment, the Ingersoll Reliance stands alone. It is the best 7 jewel watch you can buy at the price.

As a symbol of personal taste, the Ingersoll Reliance bespeaks refinement. Its slim, graceful case, its beautifully designed dial and its artistry of finish satisfy the most critical taste.

As a time-piece the Ingersoll Reliance is the master product of the world's greatest organization of watch makers. It is a close timer, sturdy of movement and capable of a life-time of reliable service.

The sturdy Bridge Construction, the Safety Barrel enclosing the Spring, and 20 other distinct and recent improvements—most of them found in no similar time-piece—make this the Master 7 Jewel Watch.

In solid Nickel case the Ingersoll Reliance sells for $6. In gold-filled case the Reliance sells for $9. At good dealers everywhere.

ROBT. H. INGERSOLL & BRO.
128 BLEURY STREET . . . MONTREAL

The market today for al lines of live stock was dull and weak, notwithstanding the very small supplies available as compared with the latter months of last year, but as the large buyers the well stocked up with most lines, the demand is limited and only for odd lots from the small butchers and trade in consequence is slow. There were some very choice steers on the market yesterday, which cost $11.50 per 100 lbs. in Toronto, but as the best bid obtainable here for them was $12, holders refused to sell at such a hevay loss. Sales of odd small lots of steers were made at prices ranging from $7 to $10 ,cows at from $6 to $9, and bulls at from $6 to $9, while canning bulls sold at $5.50 to $6, and cows at $4.50 to $5.5.0 per 100 lbs.

The feature of the trade in small meats was the weakness in the market for sheep and lambs and prices scored a further decline at $1.00 to $1.50 per 100 lbs. At this reduction there was a steady demand from American buyers for lambs and sales of Ontario stock were made at $12.50 to $13 and Quebec at $11.50 to $12, while sheep sold at from $6 to $8 per 100 lbs. as to quality. A steady feeling prevailed in the market for calves and prices were unchanged, with a fair demand for small lots, and sales of milk-fed stock were made at from $10 to $16 per 100 lbs. as to quality and size. The trade in hogs was slow and prices were weaker, with sales of selected lots at $16.50 per 100 lbs. weighed off cars.

EUROPEAN CROP PROSPECTS

Bromhall vabled respecting prospects:

Foreign conditions as compiled from latest information available:

United Kingdom—There are many complaints that the crop is suffering from recent heavy precipitation. It is also reported that farm work is getting backward, owing to the unfavorable weather.

France—This country has also had too much rain, and there are fears that crops will begin to suffer from the wetness. Agricultural preparations have been retarded to some extent.

Italy—Owing to the scarcity of labor and fertilizers, abriculture has been hindered. It is reported that the acreage to the new wheat crop is short. Severe floods in the north and centre have damaged the new seedings.

Spain—Latest reports speak optimistically concerning the outlook for the new seedlings. The supply situation remains favorable, and the bright prospects for the new crop are maintained.

THE BALED HAY MARKET

Montreal, Feb. 1.—A fair volume of business continues to be done in baled hay and, as supplies are none too large to meet the requirements, the tone of the market remains firm with sales of car lots of N. 1 Timothy hay at $23 to $24, No. 1 light clover mixed hay at $22 to $23, No. 2 timothy hay at $22 to $23, No. 2 clover mixed hay at $21 to $22, and No. 3 timothy hay at $20 to $21 per ton, ex track.

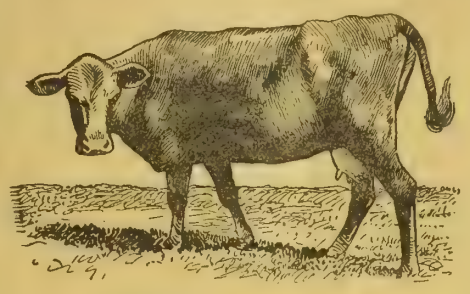
TWELVE CARS HAY

The Maritime Farmer can offer from ten to twelve cars of good hay on track in Carleton county. Agricultural Societies requiring hay should write Societies requiring hay should write. The price is right but the lot will be sold to first who enquire. Purchasers must furnish bank guarantee for amount. Cars average thirteen tons.

A stable should be ventilated for three reasons: First, to regulate temperatures; secondly, to remove moisture and foul air; thirdly, to provide fresh air.

"Scrub" Feeding is as Bad as "Scrub" Breeding

A poorly fed cow that gives less than, or only enough, milk to pay for her keep requires just as much attention, just as much feed for upkeep and must be milked just as often as a good cow. Scrub feeding does not pay.



By feeding your cows a ration containing the proper amount of proteins, with a proper balance between constipating and laxative ingredients, together with sufficient bulk for proper digestion, you are bound to get larger yields of milk.

Your feed problem is solved quickly and satisfactorily by using

Monarch Dairy Feed

It is mixed in the proper ratio to produce the largest yields of milk. It keeps the cows in good healthy condition. Monarch Dairy Feed is highly digestible and is composed of oil cake meal, cotton seed meal, bran, corn feed and barley feed—an ideal ration for high milk production.

Monarch Dairy Feed, while being very rich, may be safely fed alone. The guaranteed analysis is: Protein 20%, Fat 4%.

Give Monarch Dairy Feed a trial. It solves one of the important points in successful dairying. Give your dealer's name and we will send you booklet, "Getting the Most Out of Dairying."

Monarch Hog Feed

A special Feed that meets all the requirements of the breod sow and the growing pig; consists principally of corn meal feed, shorts and digester tankage. Guaranteed analysis: Protein 15 per cent., Fat 4 per cent.

Sampson Feed

Meets the demand for a general purpose feed both for cattle and hogs. It is sold at a somewhat lower price than either Monarch Dairy Feed or Monarch Hog Feed. Guaranteed analysis: Protein 10 per cent., Fat 4 per cent.

The Campbell Flour Mills Co., Ltd., Toronto, Peterboro, Pickering

Canada Food Board Licenses Nos. 6, 7 and 8. 53

FEEDING CATTLE IN NOVA SCOTIA

(Continued from page 542)

Department of Agriculture is offering similar assistance to anyone in Canada.

Cotton seed meal appears on our markets in several different grades. The highest grade contains at least 41% of protein and is sweet in odor and bright yellow in color. The next grade contains about 38% of protein, and the next 36%. These three are all excellent feeds when clean and sound in color and odor.

Among the low protein feeds dried beet pulp should be especially mentioned. It is not high in protein or fat but is especially rich in digestible carbohydrates and is valuable at this time on account of the high price of corn meal. In addition to its nutrient content it is succulent and palatable and furnishes a welcome addition to the dry feed generally obtainable for winter rations. It is best used by soaking with just enough water to moisten it thoroughly and cause it to swell, but leaving it dry enough to handle easily. It should be dampened twelve hours before the time of feeding.

It was stated in the beginning of this circular that the manufacturer is compelled by law to give the maximum percentage of fibre that may be contained in his feeds. This is because a high percentage of fibre is likely to reduce digestibility. For instance, oat hulls are low in digestibility because of their hard, fibrous nature. On account of the enormous quantity of oats that are manufactured into breakfast foods great quantities of hulls accumulate at the factories. These when mixed with heavy feeds lighten them and add to their bulk, but do not add much to their feeding value. For such reasons as this the manufacturer is compelled to give the maximum percent of fibre in the mixed feeds he sells, and thus when the buyer sees a high fibre content (say over 20%) in the analysis of a feed he may know that products of rather low digestibility have been used up in its make-up. This has a special bearing on the selection of feed for pigs, as they need feeds low in fibre. Their digestive tract is not so constructed as to enable them to digest easily large amounts of fibre. This is especially true of young or fattening pigs. Brood sows may often be fed some coarse feeds to advantage. Generally speaking pigs need middlings and feeding flour instead of bran, and corn or barley instead of oats. They need to be supplied with more concentrated high priced feeds than any other class of farm stock.

The digestibility of feeds is an important factor to be considered in making up a ration. Unfortunately it is impossible to determine quickly the comparative digestibility of the proprietary feeds on the market. The guaranteed analysis given for all these feeds is always the total amount of each constituent which they contain. For instance the average protein content of wheat bran is 16%. Some of that is indigestible however, and the animal is able to use only 78% of the 16% present. This reduces the digestible protein in bran to 12.5%. The same thing is true to a greater or less extent of all constituents in all feeds. When therefoer the manufacturer gives us the total analysis of his feeds we are not sure just how valuable hey are as we do not know what per cent of the nutrients they contain are digestible. When buying feeds we are compelled to take the total analysis as all feeds are sold in that way. When making up a ration, however, we use tables that give the percent of digestible nutrients in the feeds. We really therefore have one standard for buying and another for feeding. The total analysis given by the manufacturers is fairly safe as a basis of comparison between feeds, and therefore hlps us out in buying. It does not give us the number of pounds of digestible nutrients that we can get from each feed however, and therefore in making up the rations in this circular I have used the digestible nutrients in each case. This resutls in a slightly larger number of pounds of each feed being used than would be the case if the amount given in the total analysis was all available to the animal.

(Continued in next issue)

HINTS FOR MOTORISTS

by ALBERT L. CLOUGH, Editor Motor Service Bureau Review of Reviews...

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GIVING THE ENGINE "THE ONCE OVER"

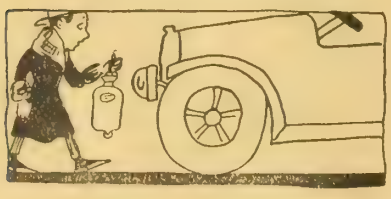
Occasional Inspection Insures Better Performance

In many parts of the country there are periods during the winter when the snow is so deep that the use of a motor car is practically impossible. Such a period furnishes an excellent opportunity to do repair and maintenance work without incurring unnecessary loss of use of a car and the following suggestions relate to inspecting and caring for an engine which may not have received attention for sometime: If carbon accumulations have not been recently removed it is well to give each cylinder a dose of the best carbon remover obtainable, following the directions explicily and allowing plenty of time for the liquid to do its work. This treatment will not only loosen the incrustations, but will tend to free the piston rings, if they are gummed in their grooves. Even if an engine has a detachable cylinder head, remoping it and replacing it, in order to do a scraping job, easy as it sounds, involves considerable work and if an application of decarbonizer will clean the cylinders sufficiently to ward off the "carbon knock" even for a time, it is worth while making, as it can do no harm and takes hardly any time. If a somewhat more thorough job is desired, the cylinders can be burned out with oxygen, without any dis-assembling being required. The next piece of work should be to test the compression and before it is performed, the engine should be run idle for some time in order to restore the "oil seal" at the piston rings. To test the cylinders for gas-tightness the spark-plugs should be removed from all but one of them, say number one. The engine should then be hand cranked and, when both valves of this cylinder have closed, their should be a strong, sustained, springy resistance to further motion of the crank. If this resistance against cranking effort maintains itself indefintely for a reasonable length of time, the sylinder is satisfactorily tight, its valves do not require grinding and the rings and other fittings are reasonably tight. Take out the spark-plug and put it into cyiinder number two, making the same test. If the resistance to cranking is low and but momentary, and you hear the hiss of escaping gas, it may indicate that the valves require grinding, that the rings require renewal or that the head gasket, valve caps or spark-plugs leak in which cases the appropriate remedies should be applied. All cylinders should be tested in the same way. Nothing tends more toward smooth and powerful running than equally perfect compression in all cylinders.

Loose Bearings Advertise Themselves By Noise. Let The Quiet Ones Alone

The next thing to be done should be the drawing off of the oil (unless this has recently been performed), and the flushing out of the whole lubricating system with kerosene, with which the old oil has been temporarily replaced, the kerosene being circulated by turning over the engine for a fraction of a minute by hand or by the starter; the drawing off of the kerosene and the substitution of fresh cylinder oil. Cleaning the oil strainer should not be neglected. With the engine running, rubber water connections should be inspected for leakage and, if they cannot be made tight by screwing up on their clamps, new ones should be put in. If water escapes along the pump shaft and this cannot be stopped by tightening its stuffing boxes, new packing should be provided. The valve gear should be looked over and if there is more than the required clearance between any valve-stem and its push-rod or rocker-arm or indeed any excessive lost motion anywhere in the mechanism, this should be taken up by adjustment in the interest of quiet operation and full power production. The spark-plugs should all be removed and their spark-gaps adjusted to the distance recommended as best for the ignition system used. A gauge for this purpose is usually furnished by the makers of the electrical apparatus. Unless the engine ha slacked smoothness of operation, knocks, taps or pounds having, at times, been audible, when it was running, it is of no advantage to do anythng to any of the bearings. Indeed it is of no advantage even to inspect them, for a bearing which is loose enough to demand attention is sure to give notice of this fact by unusual operative sounds. Much harm has been done and lots of money has been wasted by having bearings adjusted "on suspicion," when they did not need it. For example, many bearings have been disturbed for adjustment, when the knock that had been experienced was really due to carbon preignition. quiet engine bearings should be let alone and tight valves should not be ground just for the sake of "doing something."

METHODS OF PRE-HEATING INTAKE SYSTEM



A. J. P. asks: Is there any better way of heating the carburetor and intake pipe, when starting the engine cold, than pouring hot water over them? I do not like to do this, because the spilled water freezes upon the floor in severe weather.

Answer: We think there is to be had a heater, adapted to fit around the intake pipe in which heat is produced by the flameless combustion of a chemically treated pasteboard element, similar to that used in some portable vulcanizers. This should be fairly effective. There are also the electric heaters, shaped to encircle the mixture pipe, but these are generally wound for battery current and we suspect that your car carries no storage battery. Such heaters, wound for garage lighting current, ought to be obtainable. Heating the intake system by the flame of an ordinary gasoline torch is a very effective method and, while it cannot be recommended as a very safe one; if it is carefully done, with the gasoline valve shut and no oily matter within range of the flame, is not very risky.

SIMULTANEOUS SPARKS AT PLUG POINTS

S. B. asks: Do spark-plugs with several points or with large parallel sparking surfaces really pass a number of sparks at exactly the same instant?

Answer: We doubt it, but we cannot say that we know positively. A plug of this kind, when being demonstrated, always appears to be passing a number of simultaneous sparks, but this proves nothing as all discharges occurring within about one-twentieth of a second would seem to the eye to be simultaneous. In this length of time, however, an engine, running at 1,200 revolutions per minute, would complete an entire revolution. Our opinion is that the sparks seen under such circumstances are successive and not simultaneous and that, if the image of the discharge were viewed in a very rapidly rotating mirror, this would be proven to be the fact.

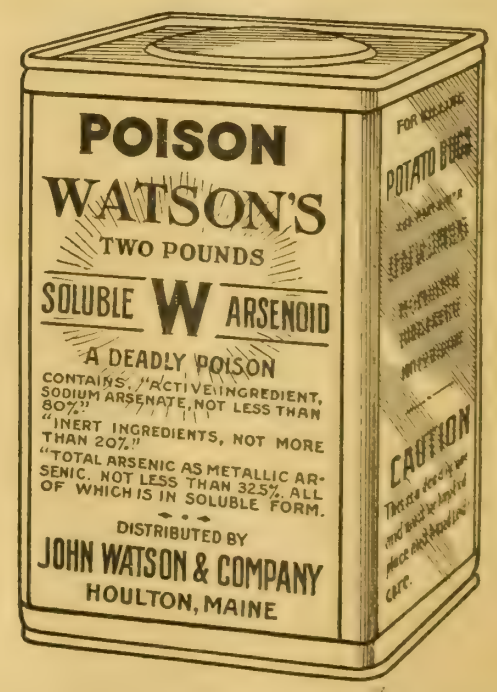
FOR MAPLE SYRUP AND SUGAR

Every maker of Maple goods in Eastern Canada should be interested in this remarkable contest. Our last competition before the war showed us how to arrange the prize money so that more competitors will be sure of being in the winning class. This Spring will offer an unprecedented opportunity in the development of the Maple industry and this contest will help to classify and arrange the various grades and qualities of Syrups and Sugars produced in Canada. Why not equip your grove and enter this contest, For full particulars, write to

THE GRIMM MANUFACTURING CO., LIMITED
45 Wellington Street, Montreal, Que.

GRIMM CHAMPION OUTFIT

WATSON'S SOLUBLE ARSENOID


POISON
WATSON'S
TWO POUNDS
SOLUBLE W ARSENOID
A DEADLY POISON
CONTAINS: "ACTIVE INGREDIENT, SODIUM ARSENATE, NOT LESS THAN 80%"
"INERT INGREDIENTS, NOT MORE THAN 20%"
"TOTAL ARSENIC AS METALLIC ARSENIC. NOT LESS THAN 32.5% ALL OF WHICH IS IN SOLUBLE FORM."
DISTRIBUTED BY
JOHN WATSON & COMPANY
HOULTON, MAINE
FOR POTATO BUGS
CAUTION

One pound does the work of two of Paris Green, and does it better. It's first cost is far less than Paris Green. WATSON'S SOLUBLE ARSENOID is now recognized to be far the most efficient insecticide for killing potato bugs and other leaf eating insects.

It must be used with bordeaux mixture. and not otherwise. It is very adhesive and does not wash off easily.

FREE OF DUTY except the war tax.

On July 22, 1918, the Canadian Customs at Ottawa issued an order removing the duty on WATSON'S SOLUBLE ARSENOID except the war tax, and this order applies only to WATSON'S SOLUBLE ARSENOID, manufactured by John Watson and Company, Houlton, Maine. This endorsement speaks for itself.

WATSON'S SOLUBLE ARSENOID has been on the market for a number of years and is used almost exclusively in Aroostook County. If your dealer cannot supply you, write us direct, and give us the name of your dealer.

JOHN WATSON AND COMPANY,
HOULTON, MAINE, U. S. A.

ALCOHOL CONDENSERS

D. F. asks: Is there any device hich can be attached to a radiator to atch the alcohol which would otherise be lost when boiling occurs?

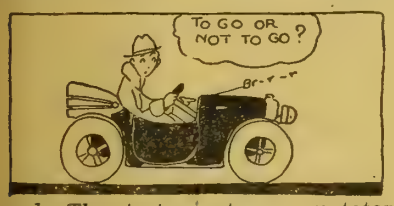
Answer: A small quantity of heavy l is sometimes put into the radiator, hich floats upon the alcohol solution nd somewhat retards its evaporation. short piece of thin walled rubber ibing can be slipped over the end of ie overflow pipe and closed with a inch-cock. If the filler cap is tight, nis causes a slight pressure in the adiator and reduces evaporation, but

he rubber tube blows off if the pressure becomes excessive. One well nown car carries a special tank, piped to the radiator overflow, in which lcohol vapor condenses and is later estored to the radiator. There was nd perhaps still is marketed, a device consisting of a coil of metal tubing, rranged around the filler cap, one nd of which is connected to the overlow and the other tapped into the top of the cap. The cold air is supposed o condense alcohol vapor in the coil. An extensible rubber container, simlar to a hot water bag has been used as a condensing tank, it being connected by rubber tubing to the radiator overflow.

ELECTRIC STARTER HAS LOST ITS "PEP"

H. A. S. asks: What causes an electric starter, which at first turned the engine over quite fast, to lose its ability to do this? My starter has got so that it cranks so slowly as to make starting quite uncertain.

Answer: Your battery may be out of condition and, while it may deliver current sufficient to light your lamps to full brilliancy, when called upon to furnish the comparatively large starting current, its voltage may drop too much to permit of a high cranking



speed. The starter motor commutator may be dirty or its brushes may make imperfect contact, the starting switch may make a poor connection or the cable contacts in the starting circuit may be imperfect. We assume that you are making due allowance for the enormously increased power required to turn over a cold motor, due to the stiffening of the oil on pistons and crank-shaft bearings. This will greatly reduce cranking speed. The same effect is produced when bearings have been tightened or new rings fitted.

Questions of general interest to motorists wil lbe answered in this column, space permitting. Address Albert L. Clough, care of Mairitme Farmer, Sussex, N. B.

LIMESTONE AND SLAG AS A FACTOR IN CLOVER GROWING

(Continued from page 532)

Water soaked soils are usually more acid than sandy areas. However, as pointed out above, dry sandy areas are often so acid that they will not produce clover without lime. That water soaked areas may be made to produce clover by aplying lime is well illustrated by the following test of two plots treated alike in every respect, except that two tons of limestone were applied to one plot and none to the other. This area was so wet that when seeded to grain in 1917 the grain crop failed to produce much, yielding only a small crop. The crop produced was as follows:—

	1917 Oats		1918 Hay
	bus	lbs	lbs
Fertilized and limed....	25	10	2600
Fertilized and not limed	22	2	320

The crop on the not limed area was principally a fine water grass, and that on the limed a strong growth of clover, not tall and heavy but of good quality. This shows that clover will persist on wet soils if lime is present.

The illustration accompaying this letter shows the effect of an application of 4 tons limestone per acre applied in 1914 to an area where it was proposed to grow alfalfa. This is a poor sandy area which was never manured and the crop was not large. The alfalfa failed to winter and the land was seeded to wheat with clover and timothy. The limed are produced practically clear clover, and the unlimed area clear timothy, although each were seeded with the same seed. The product shown was taken from the same sized area.

Calculated from the analysis given in feeds and feeding by Henry & Morrison, the clover yield from one acre limed contained 65.19 lbs. of nitrogen, 241.68 lbs. of protein, and the timothy on the area not limed 20.79 lbs. of nitrogen, 63 lbs. of protein.

Now the question is, are we to continue to send to the Southern States for cottonseed meal, high in protein, for our stock, and to Chili for nitrate of soda grow our crops, or are we to make use of ground limestone to fit our soils so that conditions may be suitable for the clover plant and the nitrogen collecting organisms. To do this does not represent a big outlay, for in none of the tests given above have more than 4 tons per acre of ground limestone been used in 6 years. Applied every three years two tons appears to be ample. It has been found that the best time to apply is when seeding down with grain. .

MANUFACTURE OF CREAMERY BUTTER

(Continued from page 540)

allow all free moisture to escape. Then make a test for moisture, and salt by the trench system, adding at the same time the water necessary to bring the moisture content up to the point desired. Work the butter from 15 to 25 minutes to ensure a perfectly uniform color, thorough dissolution of the salt and a perfect incorporation of moisture with a bright smooth, waxy texture. It is absolutely necessary for every creamery to be supplied with acid tests and moisture tests, and in addition a fat test of each vat must be made each day if we wish to do our work intelligently and produce a uniform quality of butter. To simply say you have not the time cannot be accepted. You must make up your mind that you have got to take the time to perform these tests or else get out of the business, and I may tell you right now that the butter makers who think anything is good enough and that performing these necsesary tests is too much trouble had better quit while the quitting is good.

We have not been able to determine the value, or otherwise, of a pure culture and hope to do some work along this line next season. In the meantime I have no hesitation in recommending the installation of pasteurizers and following the instructions already outlined. If we do I am hopeful we will be heard from more favorably next year at our annual expositions that we have the past few years.

.—An address by L. A. Zufelt, Superientedent of Eastern Dairy School, Kingston, Ont., at Annual Convention Dairymen's Association of Eastern Ontario, held at Belleville recently.

$5.00 FOR $4.00

W-S S

And every Dollar worth more

Farmers!

The buying power of the dollar today is very low. That is why you obtain such prices for the food you raise.

During the next five years, the buying power of the dollar will rise. Every four "low-powered" dollars you invest in War-Savings Stamps this month will bring you five "high-powered" dollars in 1924, when food will not command present prices.

Invest every dollar you can in W-S.S. which are sold at Money-Order Post Offices, Banks and other places displaying the W-S.S. sign.

THRIFT STAMPS—25 cents each—are sold where W-S.S. are sold and by patriotic storekeepers. Sixteen Thrift Stamps on a Thrift Card represent $4.00 in buying a W-S.S.

BUY WAR-SAVINGS STAMPS

Next month W-S.S. will cost one cent more—$4.01.

27

Fresh Vegetables From Your Own Garden

make the meals so much more tempting—as well as much more healthful and less expensive.

But of course for a really successful garden you need the very best seeds. So it's worth while to see that you get

Ewing's Reliable Seeds

They have produced 44 successive crops in Canadian gardens and fields—they have rarely disappointed—and have so often pleased beyond all expectations.

Write at once for our Illustrated Catalogue, and if your Dealer hasn't Ewing's Seeds, order from us direct.

The **William Ewing Co. Limited**

SEED MERCHANTS

McGill Street
Montreal

41

Church Point Stock Farm

AYRSHIRES

Present offerings. Five nice Ayrshire Bulls ranging in age from 12 to 24 months. These animals are bred from choice good cows. Prices given on application.

M. C. McLaughlin

BUCTOUCHE, - - N. B.

FOR SALE!

Ayrshire Bull, perfectly kind, three and a half years old, R. O. P. ancestors. Bred by Collier Bros., Ont.

Also Bull Calves from eight to twelve months. Best of breeding.

A. A. H. MARGISON,
East Centreville, - - N. B.

WINTER WORK FOR THE BEE-KEEPER

(Experimental Farms Note)

Now that the most active part of year is over and the bees are safely packed away in their winter quarters, the beekeeper should turn his attention to the preparation for next year's activities. As the honey gathering season is comparatively short and things move very rapidly during that time, success depends mainly upon having everything in readiness before it is actually needed. Much of the work can be done during the winter months.

One of the most valuable assets of the beekeeper is a good supply of empty combs at the commencement of the season and great care should be taken to preserve them during the winter months from the ravages of mice and wax moth. A good method is to place the combs in supers and to tier the supers up one above another with a sheet of paper between each and a hive cover on top of the tier. this will prevent the mice from getting at them. The combs should be stored in a dry cold place. Exposure to zero weather will destroy the larvae of the wax moth. Fumigation with carbon bisulphide will also destroy them but care must be exercised in handling this material as it is highly inflammable.

All supplies should be thoroughly gone over and put into working shape. If any new supplies are required, order them as early as possible and get them made up before spring. By sending early orders, you not only benefit yourself but you are aiding the manufacturer to fill all orders in time. tI is not adviable to put foundation in the frames till spring as it becomes very brittle in the cold weather and there is danger of breaking it in handling. If you have only old broken combs, capings, etc., now is a good time to get them rendered, using a wax pres for this purpose and to have the resulting wax made into founda tion.

Protect your bees from mice by having the entrances to the winter cases reduced too small or by covering with a screen too small for mice to get through, but large enough to allow the bees to pass through freely. The entrances of the hives in the cellar can also be closed by this screening The temperature of the cellar should be kept at 45° F. The cellar should be dark, and well insulated against changes in temperatur.

If the bees were placed in winter quarters rather light in stores, it may become necessary to feed them before bringing them out in spring. For this purpose, candy made as follows is recommended:—Stir 6 pounds white granulated sugar into one eighth pints of boiling water. When the sugar is thoroughly dissolved, and ¼ teaspoonful tartaric acid and boil at a temperof 240° F. over a hot fire for 3 to 4 minutes without stirring. Allow the mixture to cool to 130° F. and then stir till it begins to whiten. Then pour quickly into moulds, making cakes about one inch in thickness. When cool these cakes can be placed on top of the frames above the cluster.

POTATO GRADING

Fruit Commisioner's Office,
Ottawa, Jan. 17, 1919

Editor Maritime aFrmer,
Sussex N. B.

Dear Sir,—

For your information we are sending you herewith copy of a letter, which has been sent from this office to the Agricultural Societies and Institutes in all parts of Canada in regard to the matter of the grading of onions and potatoes. A similar letter was sent to the wholesale fruit and vegetable dealers.

Within the past week a great many replies to these letters have been received at this office and practically all of these indicate a very enthusiastic suport of compulsory grading measures. I thought that possibly it might interest your readers to know that the opinions of growers and dealers in all parts of the Dominion are solicited and will be much appreciated by this department. We are sure that among those who subscibe to you publication there must be many who have opinions on this subject and we would be very glad indeed if you could give this matter a little of your valuable space in an early issue. ,

Potato grading for some years has been voluntarily adopted in British Columbia and New Brunswick with very great success, but before taking further action in the matter, we wish to receive the view points of those who have given particular study to this question.

Thanking you in advance, I am,
Yours very truly,
C. W. BAXTER,
Commissioner.

Re Grading Potatoes and Onions

Ottawa, Jan. 7, 1819

Dear Sir,—

During the past few years the Department of Agriculture has received numerous requests from growers, growers' marketing organizations and dealers for the establishing by law of grades for potatoes and onions. Commercial grades have been established but these have proved to be most unsatisfactory during the period of weak and declining markets.

During the last Session of the Dominion Parliament potato grades were established. The use of these was made optional as at that time it was deemed inadvisable to place any possible obstruction in the way of greater production and marketing of potatoes as a substitute for wheat products which were so esential to the successful prosecution of the war. The present optional grades were created for the purpose of enabling buyers and sellers at great distances to transact business with a greater degree of confidence. No grades, however, were established for onions.

Now that the end of the war is in sight it would seem to be an opportune time to consider the advisability of establishing grades for both potatoes and onions. If your Association is interested in this matter we would be very glad if you will bring it before your members at your next meeting and forward us any recommmendations or suggestions they may care to make.

Yours faithfully,
C. W. BAXTER.
Commissioner.

THE SOLDIER SETTLEMENT BOARD
CANADA

A New Hand Book

GIVING INFORMATION REGARDING

LAND, LOANS and AGRICULTURAL TRAINING for RETURNED SOLDIERS

AND OUTLINING THE PROCEDURE FOR MAKING APPLICATION FOR THE BENEFITS TO BE DERIVED UNDER

The Soldier Settlement Act

IS NOW AVAILABLE FOR DISTRIBUTION.

Prospective soldier settlers may obtain copies of the same upon application to the PROVINCIAL SUPERVISOR OR THE SOLDIER SETTLEMENT BOARD, OTTAWA.

PROVINCIAL SUPERVISORS.

D. W. Campbell, The Soldier Settlement Board, Post Office Building, Winnipeg, Man.

S. F. Dunlop, The Soldier Settlement Board, McCallum-Hill Building, Regina, Sask.

F. W. W. Fane, The Soldier Settlement Board, Post Office Building, Edmonton. Alta.

W. M. Jones, The Soldier Settlement Board, 32 Adelaide St., E., Toronto, Ont.

J. J. Threlkeld, The Soldier Settlement Board, Pemberton Building Victoria, B.C.

B. F. Campbell, The Soldier Settlement Board, Drummond Building. Montreal, Que.

The Hon. Murdoch McKinnon, Minister of Agriculture, Charlottetown, P.E.I.

W. B. McCoy, Secretary, The Soldiers Aid Commission, Halifax, N.S.

William Kerr, Secretary, Farm Settlement Board, St. John, N.B.

COMMON PARASITES OF SWINE

(Experimental Farms Note)

Swine are subject to several parasites external and internal. Of the first class the most troublesome is the ordinary hog-louse. These insects are responsible for such unthriftiness and poor gains; are an adveritsement of the unobservant eye or carelessness of the feeder and the intolerable in that unless the infestation is of long standing, they are fairly easy of eradication.

RELIEF AT LAST

I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
Address

MRS. M. SUMMERS, Box 309
Windsor, Ont.

Methods of Eradication

1.—Pigs may be dipped or sprayed with any good creolin or coal-tar disinfectant, made up as per directions accompanying the preparation.

2.—Coal oil or kerosene is used by some. Though effective it has a blistering action and should be avoided.

3.—Fuel oil is highly recommended. Experiments with it at Ottawa proved it efficient, but slightly irritant and leaving th ehair of the pigs in a dirty, discolored condition.

4.—Crude castor oil is non-irritant, soothing and quite destructive to lice. Where procurable it forms possibly the best application for this purpose. At present, the price of castor oil is too high to permit of its use for such purpses.

5.—Paraffin oil (low grade) as now used in the herd of swine at the Central Experimental Farm, has proven non-irritant to the sckin and quite effective as an insecticide. It is cheap, easily procurable and colorloess.

6.—Apply disinfectant (creolin, etc.) with a brush, broom, spray pump, or in the case of the large herd, by the dipping method. Apply oils with a cloth or more conveniently still by using a large oil can with a handle and long spout. File a short section from off the end of the spout to increase the amount delivered. Apply a stream of oil over the neck, shoulders and along the back. The heat of the body will cause the application to spread conveniently over the body. A large number of hogs can be treated conveniently and quickly by such means.

7.—Repeat the application after ten days to destroy the lice or nits.

8.—If pigs are seen to be badly infested, a thorough clean-up of the premises would be indicated, using a strong creolin over all.

Intestinal Parasites

Of intestinal parasites the round worm is much the more common. In most cases examination of the smaller intestine of slaughtered pigs will reveal the presence of a few large white worms. In small numbers they appear to cause little inconvenience to the animal; a considrable infestation will cause a marked falling off in general condition. Young pigs so affected are thin, stunted and lacking in vigor and thrift. Severe infestation will frequently cause intestinal inflammation or stoppage, resulting in death.

Cause

Where pigs are kept reasonably clean, and supplied with fresh water, the danger of infestation is small. Filthy suroundings together with stagnant or foul water usually predispose to such parasitic infestation.

Treatment

Prevent by cleanly methods and the use of any good mineral corrective mixture. There are a number of these on the market. A good home-made substitute is a mixture of charcoal, wood ashes and salt; or of sulphur, salt and iron sulphate mixed in equal parts,—take one part with 8 parts charcoal and 8 parts ashes, mix well and allow the animals free access to it.

Where pigs are infested, turpentine is the best remedy. Give 1 teaspoonful to every 100 pounds weight, after fasting the animal for twelve hours. This may be mixed in the feed and given for three successive days. Follow this with a good purging of Epsom Salts.

SHORT COURSE OPENING POSTPONED

Truro, N. S.—Owing to the general influenza situation throughout the Maritime Provinces, it has been decided to temporarily postpone the Short Coure at the College of Agriculture, Truro, N. S. The date on which this course will open will not be decided for a little time but when it is decided full advertisement will appear in our columns.

Candy a Splendid Food

One of the most attractive forms in which food can be eaten—is candy.

Candy is composed principally of sugar, nuts, fruits, some fats such as butter, and chocolate.

All these ingredients are recognized by eminent medical authorities as food products, which the system craves and demands.

Let us examine their food values separately.

We all know that sugar is a body-building essential; about one-quarter pound of sugar being required by an adult every twenty-four hours.

Nuts and fruits yield a high percentage of nutritious materials.

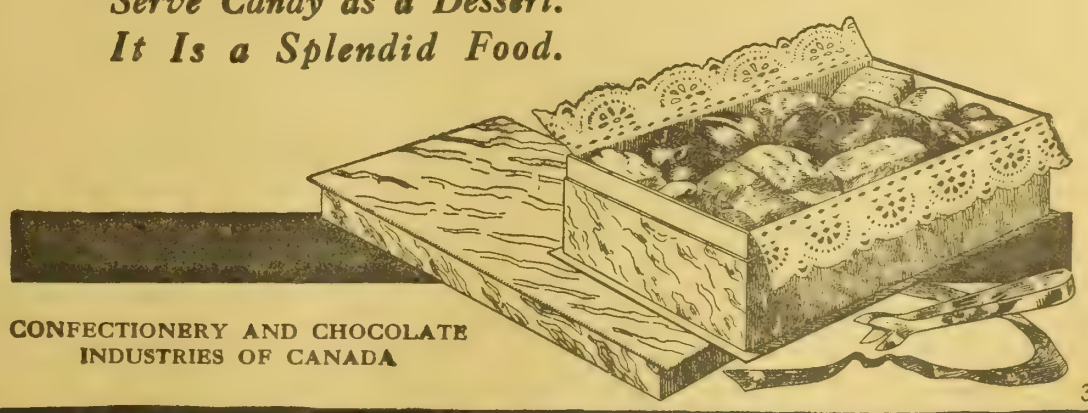
Fats supply the bodily fuel and should be used in every dietary.

Chocolate is a delightful stimulant, especially valuable in restoring energy.

Combine these ingredients and are they not still food?—satisfying, nutritious, essential and in a most delightful and properly balanced form.

Eat more candy. Candy is beneficial to all and harmful to none.

Serve Candy as a Dessert.
It Is a Splendid Food.



CONFECTIONERY AND CHOCOLATE INDUSTRIES OF CANADA

3

COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and breeders, Clydesdales, Dairy Shorthorns aed Border Leicester Sheep. Present offerings: 1 imported stallion, several young bulls, six to fifteen months old also a number of ewe and ram lambs for fall delivery.

G. C. Cossar, Prop. J. Meiklejohn, Agent.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

BLOOMFIFLD STOCK FARM

Clydesdale horses, Ayrshire and Guernsey Cattle, Shropshire Sheep.

Present Offering:—1 imported pure bred Stallion.

J. ROBIE MacDONALD,
Shubenacadie, Nova Scotia
(Successor to J. MacDonald & Son)

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm

OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired by Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters. 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

Clearing Sale of Shorthorn Cattle

Am offering for sale my herd of pure bred registered Shorthorn cattle. These cattle range in age from 7 years to 3 years, or a little less, with one bull calf two weeks old, and are all fine in type and color.

I have also exceptionally good grade cattle of various ages for sale. All will be sold at a reasonable price and offer an unusual opportunity to anyone desiring to start a herd of choice stock or to renew an old herd.

J. E. HETHERINGTON, - Codys, N. B.

FOR SALE !

One pair two year old Mammoth Bronze Turkeys, $8.00 (eight dollars.) One fine Guernsey Bull Calf, three months old. This animal is well grown, from a dam with a fine milking record.

SARAH E. MOSES SMITH,
WOODWARDS COVE, - - N. B.

FOR SALE
R. O. P. HOLSTEINS.

Two bulls ready for service, and several bull calves. The right type and prices right.

For description and price write,

D. R. NICHOLSON,
"Riverview Farm", Coxheath, N. S.

FOR SALE!

Present offering, one Bull Calf.

P. R. L. FAIRWEATHER,
Rothesay - - - N. B.

DATES TO REMEMBER

Maritime Dairy School, N. S. A. C., Truro, N. S.
Creamery Course,..March 12th to 25th
Cheese Makers Course, March 26th to April 3rd.
Cow Testers Course, March 26th to April 3rd.

Butter Parchment at Farmer Office

Lawndale Stock Farm
Jerseys and Shorthorns (Pure Bred)

JERSEYS:—

One registered Bull Calf, solid colour, (fawn) dropped in October, 1918. Out of a R. O. M. dam, by a "Golden Fern's Lad" sire.

Our latest importation consists of a young cow and yearling heifer, direct from the Island of Jersey.

SHORTHORNS:—

One registered Bull Calf, red, little white, dropped in March, 1918. He is large, in splendid condition, and out of a fine milking dam.

One or two heifer calves, red, little white, dropped in the summer of 1918, out of good milking dams; all three of the aforementioned calves are sired by the best son of "Stately Monarch", Champion in three Provincial Shows.

Our latest importation is a new Herd Bull, direct from the Milking Shorthorn herd of Lord Rothschild, Tring Park, England.

I. M. LOVITT, M.D.,
Yarmouth North, - Nova Scotia

Maple Green Farm Holsteins

Just now we are offering some fresh calved cows and some due to freshen shortly, also yearling heifers and heifer calves, all with official records or from official record dams. Remember this is the only herd in Eastern Canada which owns two Jr. 3 year olds with official records of 25.05 and 26.54 lbs. butter in 7 days.

Herd sires in service, "Maple Grove Mercena Mercedes," No. 11727, the sire of our 26.54 lb. Jr. 3 year old and who so far has not a tested daughter testing under 4%. Our Jr. herd sire, "Homestead Hengerweld Rooker," No. 20652, three-quarter brother to our 25.05 lb. Jr. 3 year old.

For particulars write

R. L. HICKS
Dalhousie Jct., - - N. B.

ROSEWARNE
S.C. White Leghorns

I am now booking orders for baby chicks and hatching eggs from my well known bred-to-lay strain. Chicks will be very scarce this spring, and there will be a wild scramble later on for supplies, so get your order in early and pick your date.

My cockerels and pullets, out of same matings as day-old chicks were sold from last season, swept the board at Halifax.

Send for prices and mating list.

ERNEST CRAZE
Port Williams, - - N. S.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM
Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

COMMISSION MEN PAY MORE

Dealers pay more for cattle that have been dehorned. The hides are worth more and the flesh has less bruises. Write for booklet telling about the KEYSTONE DEHORNER. R. H. McKenna, 219 Robert Street, Toronto.

Advertise in the Farmer.

FOR SALE !

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st, 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and 1st in grade cow, competing against all breeds at our late show at Charlottetown, with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

A number of Young Bulls fit for service, out of Record of Merit cows. This herd has been under test for a number of years. Herd now headed by "Star of Fern Brook" and by "Star Glen Cairn", brother of the noted Jean Armour.

J. FRANK ROACH, Proprietor,
Phone 111. - - - - Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.

We have young bulls for sale whose two nearest dams (both Canadian champions) average as high as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows; and one ready for service from a 41-lb. sire and an 18,000-lb two-year-old dam. Send for our BOOK OF BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT

BELLEVUE STOCK FARM
Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, HAMMOND RIVER, N. B.

We are offering for sale calves of both sexes, sired by Dutchland Pieterje Count, a bull of splendid size and type, whose four nearest dams have records averaging 28.61 pounds of butter in seven days. His dam is a daughter of Colantha Johanna Lad, who has 101 A. R. O. daughters, 4 over 32 lbs., 7 over 30 lbs., three of them world's records for 365 days. If you want something choice, come and see these calves or write for further particulars.

We will also book orders for young Yorkshire pigs for next spring's delivery.

WM. S. HARDING, Prop.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

We have sold 13 head in the last few weeks but there are some dandy good ones left yet. Special offering—2 heifer calves and several bull calves, sired by Prince Colantha's Canary B, whose four nearest dams average 32.84 lbs. butter in 7 days; 105 lbs. milk in one day. These are beauties. A couple of yearlings and two-year-old heifers, bred to Prince, due in the fall. Several young cows and heifers milking, due to calve from August to December. We have a couple of bull calves fit to head the best herds in the provinces. Come and see them. We would be Pleased to meet you at Truro if notified.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

BULL'S CREEK FARM
R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lbs. butter each in seven days. These cows have in turn been bred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkable combination of breeding and will sell a heifer calf or two. Get your orders in quick, they won't be here long.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

Registered Jersey Heifer

We offer for sale the registered Jersey Heifer, "Pride of Rose Bank," 3 years old, milking sired by Foxhall's St. John O'Dreamwold, whose dam gave over 10,000 lbs. milk in a year. Also Peerless Incubator, Barred Rock and White Leghorn Cocks and Cockerels, which would exchange for Barred Rock Hens.

ORCHARD HILL FARM
Brown's Flats - N. B.

Five Ayrshire Bulls for Sale !

From good milking strain. All fit for service.

Prescott Blanchard,
Truro - Nova Scotia

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

FOR SALE—Registered Ayrshire Bull, 3 years old, "Lakewood Prince," No. 52147. Price reasonable. Apply to T. E. DESMOND, R. F. D. No. 1, Lakewood, St. John, N. B.

SEEDS OF EVERY DESCRIPTION—Write for our free offer.—HARRY'S SEED STORE, Dept. D 7, 360 Dorchester Str. West, Montreal.

FOR SALE—One Shorthorn bull, four years old, can be delivered at train at once. Also one Oxford Down ram. Apply to JAMES GODFRY, Secty. Black River Agriculture Society, Black River, N. B.

LADIES WANTED to do plain and light sewing at home, whole or spare time, good pay, work sent any distance, charges paid. Send stamp for particulars. NATIONAL MANUFACTURING, COMPANY, Montreal.

FOR SALE—One pure-bred Holstein Bull Calf, five months old. Two more two weeks old from good producing stock. W. G. CAMPBELL, Salisbury, N. B.

WANTED TO PURCHASE:—One Holstein Bull, registered stock, about fourteen months old. D. SMITH REID, 75 Charlotte St., St. John, N. B.

COCKERELS FOR SALE—W. Orpington, Light Brahma, Black Minorcas, S. C. Blue Andalusian, Black Andalusian and pullets, from prize winning stock. MRS. LOCKE, Herbert Street, Amherst, N. S.

FOR SALE—Jersey bull fit for service, suitable for societies. Second prize winner at Sherbrooke in class of fourteen. Dams record 653 lbs., also a prize winner. Sire second prize bull Ottawa, 1918, defeating prizewinners at National Ohio. SICCAWEI JERSEY FARM, North Hatley, Que.

Springbrook Farm Ayrshires !

PRESENT OFFERINGS: Four nice young Ayrshire bulls ranging in age from 12 to 18 months. These animals are exceptionally fine and in fact the best we have had to offer for some time.

McINTYRE BROS.
SUSSEX CORNER, - - N. B.

QUALITY BRAND Rabbitry and Poultry Yards

Amherst, Nova Scotia

E. I. PEEL & SON, Proprietors

Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

Black Siberian Hares, the most profitable fur bearing animal living, price per pair..$25.00
Silver Siberians, price per pair..... 5.00
Belgians, price per pair 3 00
The above prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each. D. W. Young's stock, as good as money can buy.
White Leghorn 260 egg strain for hatching.....$2.00 per 15
White Leghorn, No. 1 exhibition stock for hatching.....$4.00 per 15

We Guarantee Safe Delivery. Terms Cash with Order

Farms Wanted !

The Department of Agriculture wishes to publish a more complete list of farms for sale during the coming winter. All persons having improved farms for sale are requested to communicate with

The Superintendent of Immigration
168 Prince William St., St. John, N. B.

Butter Parchment at Farmer Office

SILO THE "FLOUR BARREL" OF THE HERD

"The silo is esentially an immense barrel int owhich grain feed, like corn, is put, to be used later as feed for livestock," says Prof. R. M. Washburn, of the University of Minnesota. "It has been known and used for thousands of years but the knowledge of the underlying principles of its construction and the machinery necessary for its filling, needed to make it really practical, have not been possessed until within the past decade or two. During the past twenty years, and especially the last ten years, the number of silos has multiplied enormously. Very few who have used them would be without them. Those people who do not believe in the silo are usually the people who have had no recent experience with them.

"The writer, a few years ago, convinced a farmer well past middle life, who had been reasonably successful all his life on the farm, that he would be more successful in his livestock work if he had a silo. He built and after one year's use was asked what he thought of it. His reply summarized the case well. He said:

"My cows never milked so freely throughout the entire winter as they have this year. They lived so largely upon silage that I have several tons of hay to sell, which I had expected to have to feed them and would have fed them under former conditions; and lastly, the cows came out in the spring in such good condition that they shed their hair early, and went on to grass prepared to make full use of it. I am convinced that the silo has paid for itself the first year."

The Annual meeting of the Nova Scotia Poultry Association will take place at the Agricultural College, Thursday, March 13th, at 10 A. M.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B

Ayrshire Cattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.
C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE PIGS

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Holsteins Hold All Championships

World's Record Price for Cattle—
Carnation King Sylvia....$106,000.00
World's Record for Butter, One Year—
Duchess Skylark Ormsby 1506.35 lbs.
World's Record for Milk, One Year—
Lutscke Vale Cornucopia 31246.9 lbs.
World's Record for Butter, Seven Days
Segis Fayne Johanna.....50.68 lbs.
World's Record for Milk, Seven Days—
May Echo Sylvia.....1005.8 lbs.
Canadian Record for Butter, One Year
Lady Pietje Canary's Jewel
1173.66 lbs.
Canadian Record for Milk, One Year—
Zarilda Clothilde 3rd DeKol
30467.0 lbs.

IF YOU CAN'T BUY A HERD, BUY A HEIFER.

Information from the Holstein-Friesian Association.

President, Dr. S. F. Tolmie, Victoria, B. C.
Secretary, W. A. Clemons, St. George, Ont.

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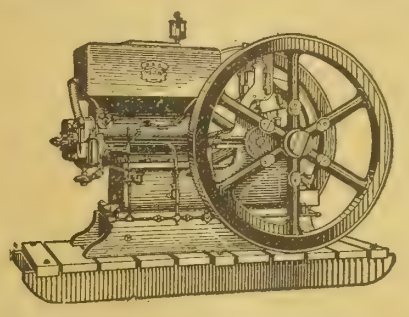

We Manufacture Complete lines of

Wind Mills, Grain Grinders, Wood Sawing Outfits, Pumps, Tanks, Water Boxes, Concrete Mixers, Power Spraying Outfits, etc.

Agents Wanted in Unrepresented Territory

GOOLD, SHAPELY & MUIR CO., LTD., BRANTFORD, ONT.
A. McCAUSLAND, Victoria Hotel, St. John, N. B., Maritime Representative

HALT! READ! THINK! WRITE!

If you didn't get satisfied at Fredericton cale with Ayrshires I can supply the following: Two Bulls, 15 months old. dam and granddam on both sides official tested for milk and butter fat. Females—a pair of three year old heifers, due to freshen before the end of the year. Something good. I will sell right, see if I won't; it only takes a stamp.

THOMAS J. HAWKINS
LONE PINE FARM STEWIACKE, COL. CO., N. S.

FOR SALE !

SHORTHORN CATTLE AND BERKSHIRE SWINE—Males and females, different ages. Several young cows freshening in early spring, also for sale. In Berkshires a litter just farrowed. Remember our Berkshires have length, size and quality. Intending purchasers please get in touch with us.

L. M. ANDERSON, Sackville, N. B.

Milking Shorthorns for Sale

We are offering some choice young Shorthorn bulls of the milking strain, ages 3 months to 15 months.
Also a limited supply of heifers, one and two years of age.
For particulars apply to

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett
Upper Sackville, - - - N. B.

SHORTHORNS

BULLS and HEIFERS FROM the CHAMPION HERD of QUE.

I have a choice lot of young bulls and aged bulls for sale. All show animals. Bred from Oak Buff Monarch No. 102905. The Champion of this province. This bull is for sale at $1600. I can spare a few heifers. Come or write your wants.

GEO. REG. MOONEY, Inverness, Que.

BARRED PLYMOUTH ROCKS WHITE WYANDOTTES S. C. BROWN LEGHORNS

$3.00 Utility Cockerels $3.00

H. M. McMONAGLE
Box 652 - - Fredericton, N. B.

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,
AMHERST, - - - N. S.

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

Advertise in the Farmer

Dreamy, Caressing Hawaiian Music

The magic melody of the throbbing Ukelele and the singing Hawaiian Guitar---blended with plaintive charm of native voices---instantly takes a strong hold on your imagination.

Listen to the way in which the haunting minor strains and booming major notes ---redolent of giant breakers on palm fringed beaches---and recorded on Columbia Records. You CAN'T forget them.

ALOHA OE and HAWAIIAN MEDLEY Toots Paka Hawaiian Co. A1616. 10-inch, 90c.

KAOWE AKE KAI (The Roaring Sea) and LIA IKA WAI MAPUNA (A Lonely Spring). Toots Paka Hawaiian Co. A1571, 10-inch 90c.

WAILANA WALTZ (Drowsy Waters) and HAWAIIAN MEDLEY. Louise and Ferera. A2016, 10-inch 90c.

KILIMA WALTZ and HAWAIIAN HOTEL, by Palie K. Lua and David K. Kaila. A1874, 10-inch 90c.

MAHINA MALAMALAMA (Waltz). Kalani and Kalei, and NA LEI O HAWAIIA. Holstein and Octette Guitar and Ukelele accompt. A1985, 10-inch 90c.

HILO—HAWAIIAN MARCH. Irene West Royal Hawaiian Troupe and KOHALA. Palie K. Lua and David K. Kaili. A1812, 10-inch 90c.

The rythm, the swing, the tuneful charm of Hawaiian music will make many a home evening a refreshing delight.

Here, particularly, you will appreciate the master tone of the Grafonola—always superbly under control by the exclusive Columbia tone leaves.

Your dealer will gladly play many Columbia Hawaiian melodies for you—and will tell you all about Columbia Grafonolas —every one musically perfect, whatever its price.

Grafonola Model L

New Columbia Records on Sale the 20th of Every Month

COLUMBIA GRAPHOPHONE COMPANY
Toronto, Ont.

Columbia Records

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 24. SUSSEX, NEW BRUNSWICK, FEBRUARY 18, 1919. Number 10.

Feeding Cattle in Nova Scotia

(Continued from last issue)

Rations Nos. 10 to 13 are made up to show how some of the special feeds mentioned may be used. They are made up for cows weighing approximately 1000 lbs. and giving about 25 lbs. of milk daily. If more milk is being given, about one pound of the grain mixture should be added to the ration for every 3½ lbs. of milk above 25 lbs. The roughage should not exceed what the cow will eat up clean except in the case of straw when a larger amount may be given allowing the cow to pick out what she wants and using the rest for bedding.

The question of what feeds should be grown on the farm in order to enable the farmer to make up the most economical ration should be carefully considered by all dairymen. The crops that are best suited to Nova Scotia are grass for pasture and hay, oats, barley and turnips, and oats, peas and vetches for silage, and in some parts of the province corn. If a farmer is supplied with good mixed hay, O. P. V. silage, turnips and oats he will only need to buy a small proportion of his cow's daily ration. I cannot impress too strongly upon the farmer the fact that an extensive cultivation of those crops that are naturally suited to the Nova Scotia climate is the surest road to success in feeding all forms of live stock.

Ration No. 14 shows how small an amount of feed needs to be bought when the farmer raises a large variety of crops.

Altho oats are used as an ingredient of several of the rations given above, ti will often pay better to sell some of them and buy other feeds such as middlings or gluten, or oil meal. When the farmer is some distance from market and has more oats than he needs for his horses he can feed them to the cows to good advantage. In most cases they should be crushed before feeding to cattle, altho whole oats may be fed to calves with good results.

The O.P.V. silage mentioned in a number of the rations is made from oats, peas and vetches grown together; oats and peas may be grown for the same purpose, when vetches are hard to get. Where the climate is not suited to corn, as is the case for the northern and eastern parts of the province, this mixture has proved valuable. It is sown early in the spring on good land and harvested from the 1st to the midde of August. The mixture for 1 acre is made up of two and a half bushels of oats, three quarters of a bushel of peas, and one third of a bushel of vetches, or two and a half of oats and one of peas. It should be cut when the oats are just coming into the dough stage, just before the straw begins to turn yellow. If cut too late it is too light and strawy and will not pack well in the silo. It has been fed for four years to the College herd and has given good results. Ten tons or more of green feed should be grown per acre, which is equal to over three tons of dry hay. Anyone interested in growing this crop can get full information by writing to the College.

The feeding of dairy cows during the summer months should have more attention than it often receives at the hands of the farmer. It is a common practice to turn cows out to pasture in the latter part of May and give them no extra feed until they are put in the barn again in the fall. In order to make this method profitable the pasture must be of the very best. In most cases the dryer weather of July and August shortens up the grass and the cows shrink a great deal in their milk flow. Where pastures become short in this way it is imperative that some supplementary feed be given if any large flow of milk is to be maintained. Some green forage is valuable at this time. It may consist of clover from the hay field in July, of oats and peas in August, and of corn and white turnips in September and October. The oats and peas should be sown thickly on good land as early as possible in the spring. Sown the latter part of April or the early part of May they will be ready for feeding by the middle of July, or sometimes earlier. A second sowing made the ast of May will be ready for feeding in August. (2½ bus. oats, ¾ bus. peas per acre).

In addition to the green feed a small quantity of bran and cotton seed meal may be fed to advantage. Cows that have been milking a long time and are only giving 20 to 25 pounds of milk

(Continued on page 592)

The following table gives the total analysis of some of the feeds found on the market in Nova Scotia.

BRAN GROUP.

(These feeds are especially well suited to the dairy cow, and may form the larger part of her grain ration.)

	Total Protein %	Total Fiber %	Total Fat %	Total nutrients except fibre, sum of protein, starch, sugar, etc. and fat
Dried Beet Pulp	8.9	18.9	0.9	
Eureka Feed	9.5	13.0	4.5	
Sampson Feed	10.0	10.0	4.0	
Echo Feed	10.28	14.47	5.57	
Schumacher Dairy Feed	10.4	10.5	4.0	
Banner Dairy Feed	10.5	10.0	4.0	
Ground Special Screenings	13.3	18.8	4.01	62.61
Ground Standard Feed	14.38	10.32	4.92	76.94
Wheat Bran (Spring wheat)	15.7	10.2	4.8	73.10
Molasses Dairy Feed	17.18	15.82	4.05	62.94

MIDDLINGS GROUP.

(These feeds low in fibre are especially suited for pigs, as well as for cows.)

Hercules Feed	10.0	8.5	2.5	
Recleaned unground Wheat Screenings	14.0	8.0	5.0	78.5
Monarch Hog Feed	15.0	8.0	4.0	
Red Dog or Feeding Flour	16.8	2.2	4.1	84.2
Standard Wh. Midd (Shorts)	17.4	6.0	4.9	79.14
Flour Wheat Middlings	17.8	4.7	5.0	80.9
Low Grade Gluten Feed	17.8	6.9	5.7	83.2
Molasses Hog Feed	17.26	13.79	5.39	78.35

LINSEED MEAL GROUP

(These are the special high protein feeds.)

High Grade Gluten Feed	25.4	7.1	3.8	82.1
Buckwheat Middlings	28.3	4.8	7.4	78.4
Linseed Meal (Old process)	33.9	8.4	7.5	77.1
Cotton Seed Meal (Prime)	33.8	10.0	8.3	75.5

SPECIAL FEEDS

Special Feeds	(Oat Feed	4.75	2.70	2.25	61.10
	(Cotton Seed Feed	24.50	21.4	6.3	65.40
	(Corn Meal	9.3	2.3	3.8	87.4

*Cotton seed feed may have less protein and more fibre.

The following table gives the digestible protein and total digestible nutrients found in the standard feeds on the market, and raised on Nova Scotia farms. It is this kind of a table that has been used in making up the rations in table used in last issue.

FEEDING STUFF		Digestible Nutrients in 100 lbs. Crude Protein lbs.	Total Nutrients lbs.
Whole Grains	Peas	19.0	76.2
	Rye	9.9	81.0
	Oats	9.7	70.4
	Wheat	9.2	80.1
	Barley	9.2	79.4
	Buckwheat	8.1	63.4
	Corn	7.5	85.7
By Products	Cotton Seed Meal	37.0	78.2
	Oil Cake Meal	31.7	75.9
	Buckwheat Middlings	24.6	76.6
	Dried Brewer's Grain	21.5	65.7
	Flour Wheat Middlings	15.7	78.2
	Gluten Feed	23.0	89.0
	Feeding Flour	14.8	79.2
	Cotton Seed Feed	14.2	57.7
	Wheat Middlings (Shorts)	13.4	69.3
	Wheat Bran	12.5	60.9
	Hominy Feed	6.3	83.0
	Molassine Meal	5.4	57.5
	Dried Beet Pulp	4.6	71.6
	Skimmed Milk	3.6	9.1
Dried Roughage	Alfalfa Hay	10.6	51.6
	Clover Hay	7.9	47.3
	Mixed Hay	4.7	47.5
	Red Top	4.6	53.2
	Timothy Hay	3.0	48.5
	Oat Hay	4.5	46.4
	Oat Straw	1.0	45.6
Green Roughage	O. P. V. Silage	2.8	17.6
	Rape	2.6	13.3
	Corn Silage	1.0	13.3
	Corn Fodder (Ears removed)	.5,	12.9
Roots and Tubers	Turnip tops	1.8	9.3
	Potatoes	1.1	17.1
	Turnips	1.0	9.4
	Carrots	.9	9.9
	Mangels	8.	7.4

P. E. I. Poultry Association Show Prize Winners

Following is a list of awards at the Poultry Show held in Charlottetown, P. E. I., on January 44th to 17th, under the ausices of the P. E. I. Poultry Association.

Anconas—C. H. Smyth, Moncton, 1st and 2nd Cock, 1st and 2nd Hen, 2nd and 3rd Cockerel, 1st, 2nd and 3rd Pullet.

E. J. Vessey, York, 3rd Cock, 3rd Hen, 1st Cockerel.

Light Brahmas—C. H. Smyth, 1st, 2nd Cock; 1st and 2nd Hen; 1st Cockerel, 1st Pullet.

Bantams Rose Comb—A. F. Houston, 1st Pullet.

Cochin Bantams—A. F. Houston, 1st Cock; 1st and 3rd Hen; 2nd Cockerel, 1st Pullet.

C. H Smyth—2nd Cock. 2nd Hen, 1st Cockerel, 2nd Pullet.

Game Bantams—A. F. Houston, 1st and 2nd Cock, 1st and 2nd Hen, 1st and 2nd Cockerel, 1st and 2nd Pullet.

A. O. V. Bantams—Fred Blanchard, 1st Cock, 1st and 2nd Hen.

A F. Houston, 1st Cockerel, 1st and 2nd Pullet.

Games, Old English—Bert Carr, Charlottetown, 1st and 2nd Cock, 1st, 2nd and 3rd Hen, 1st and 2nd Cockerel, 1st, 2nd and 3rd Pullet.

Frank Power, Charlottetown, 3rd Cock.

Pencilled Hamburgs—A. Boswell, Frenchfort, 1st, 2nd and 3rd Cock, 1st, 2nd and 3rd Hen, 1st, 2nd and 3rd Cockerels, 1st, 2nd and 3rd Pullet.

Houdans—H. Lapthorne, Charlottetown, 1st Cock, 1st Hen, 1st Cockerel, 1st and 2nd Pullet.

Lanshangs—C. H. Smyth, 1st and 2nd Cock, 1st and 2nd Hen, 1st and 2nd Cockerel, 1st and 2nd Pullet.

S. C. White Leghorns—W. J. Pickard, 1st and 3rd Cock, 1st and 3rd Hen, 1st and 3rd Cockerel, 1st, 2nd and 3rd Pullets.

John Whitlock, Chtown, 2nd Cock, 2nd Hen, 2nd Cockerel.

S. C. Brown Leghorns—J. R. Brown, 1st Cock, 2nd and 3rd Hen, 1st Cockerel.

W. Whitlock, Chtown, 2nd Cock, 1st Hen, 2nd Cockerel, 2nd Pullet.

Brent Hooper, Chtown, 1st and 3rd Pullets.

John Feetham, Halifax, 3rd Cock.

Buff Leghorns—John Feetham, 1st Cock, 1st and 2nd Hen.

Fred Blanchard, Charlottetown, 3rd Hen, 1st Cockerel, 1st and 2nd Pullet.

A. O. V. Leghorns—Brent Hooper, 1st and 2nd Cockerel, 1st and 2nd Pullet.

S. C. Black Minorcas—W. J. Cudmore, Charlottetown, 1st and 2nd Cock, 1st, 2nd and 3rd Hen, 1st, 2nd and 3rd Cockerel, 1st and 2nd Pullets.

Albert Williams, Charlottetown, 3rd Cock, 3rd Pullet.

Rose Comb Minorcas—Albert Carr, 1st Cock, 2nd and 3rd Hen, 1st and 2nd Cockerel, 1st, 2nd and 3rd Pullets.

Buff Orpingtons—Jos. Costello, Charlottetown, 1st Cock, 1st Hen.

Barred Plymouth Rocks—T. C. Latham, Alma, N. S., 1st and 2nd Cock, 1st, 2nd and 3rd Hen, 1st and 3rd Cockerel, 1st, 2nd and 3rd Pullet.

White Plymouth Rocks—Earl Boswell, Scotchfort, 1st Cock, 1st Hen, 1st Cockerel, 1st Pullet.

S. C. R. I. Reds—Otto Hoffman, Charlottetown, 1st Cock, 1st, 2nd and 3rd Hen, 1st Cockerel, 1st and 2nd Pullet.

John Whitlock, 2nd Cock, 2nd Cockerel, 3rd Pullet.

Rose Comb R. I. Reds—Jos. White, Charlottetown, 1st Cockerel, 1st Pullet.

Black Spanish—Wm. L. Acorn, Charlottetown, 1st and 2nd Cock, 1st and 2nd Hen, 1st and 2nd Cockerel, 1st and 2nd Pullet.

White Wyandottes—George Lightizer, Charlottetown, 1st and 3rd Cock, 1st Hen, 1st and 2nd Cockerel, 3rd Pullet.

Jos. White, Charlottetown, 3rd Cockerel, 3rd Hen, 1st and 2nd Pullet.

Fred Blanchard, 2nd Cock, 2nd Hen.

Patridge Wyandottes—John Feetham, 1st Cock, 2nd Hen.

Jos. Costello, 2nd Cock, 1st Hen, 2nd Cockerel, 2nd and 3rd Pullet.

H. Lapthorns, 3rd Hen, 3rd Cockerel, 1st Pullet.

Columbian Wyandottes—George B. Williams, Charlottetown, 2nd and 3rd Cock, 1st and 2nd Hen, 1st Cockerel, 1st, 2nd and 3rd Pullet.

John Williams, Charlottetown, 1st Cock, 3rd Hen, 3rd Cockerel.

Amos Acorn, Charlottetown, 3rd Cock, 2nd Cockerel, 3rd Pullet.

A. O. V. Wyandottes—William Beazley, Halifax, N. S., 1st and 3rd Cock, 1st and 3rd Hen, 1st and 2nd Cockerel, 1st, 2nd and 3rd Pullet.

G. B. Williams, 2nd Cock, 2nd Hen, 3rd Cockerel.

Any Variety Named—Brent Hooper, 1st Cock, 1st and 2nd Hen.

Leghorns—Breeding Pen—W. J. Pickard, 1st Adult, 1st Young.

T. C. Latham, 2nd Adult.

J. H. Whitlock, 2nd Young.

John Feetham, 3rd Adult.

Minorcas—W. J. Cudmore, 1st Adult, 1st and 2nd Young.

Plymouth Rocks—T. C. Latham, 1st Adult, 1st Young.

Wyandottes—Jos. White, 1st Adult, 1st Young.

Geo. Lightizer, 2nd Adult, 2nd Young.

Bantams—A. F. Houston, 1st Adult.

C. H. Smyth, 2nd Adult.

Utility Barred Plymouth Rocks—Andrew F. Peters, Rollo Bay, 1st Cock, 3rd Hen.

C. T. Ferguson, Marshfield, 2nd Cock, 2nd Hen, 2nd Cockerel, 1st Pullet.

E. J. Vessey, York, 1st Hen, 1st Cockerel, 2nd Pullet.

Arthur Sexton, ChTown, 3rd Cockerel.

Walter McLellan, ChTown, 3rd Pullet.

Utility White Wyandottes—Rev. M. Monaghan, Miscouche, 1st Cock, 1st Hen, 1st Cockerel, 1st Pullet.

E. J. Vessey, 2nd Cock, 2nd Hen, 2nd Pullet.

T. B. Woodman, Charlottetown, 3rd Cock.

Utility, White Leghorns—R. B. McKinley, North River, 1st Cock, 2nd Hen.

Wm. Neale, Bear River, 1st Hen, 2nd Cockerel, 1st Pullet.

Wallace Acorn, Charlottetown, 1st Cockerel.

Geo. M. Ballum, 3rd Cockerel, 2nd and 3rd Pullet.

Utility Brown Leghorns—John Feetham, 1st Cock, 1st Hen, 1st Cockerel, 2nd Pullet.

Robert Rhynes, Dunstaffnage, 2nd Cockerel, 1st Pullet.

S. C. Black Minorcas—Wallace Acorn, 1st Cock, 2nd Hen.

J. T. Beagan, Johnston's River, 2nd Cock, 1st Hen, 2nd Cockerel, 3rd Pullet.

Lilly Cairns, St. Teresa's, 1st Cockerel, 1st Pullet.

Clic Mullins, ChTown, 3rd Cockerel, 2nd Pullet.

S. C. R. I. Reds—E. Howatt, French River, 1st Cock, 1st Hen, 1st Cockerel, 1st Pullet.

E. Waller City, 2nd Cock, 2nd Hen, 2nd Cockerel, 2nd Pullet.

T. B. Woodman, 3rd Pullet.

Breeding Pens—Barred Plymouth Rocks—C. T. Ferguson, 1st Adult, 1st Young.

Wm. Neale, 2nd Young.

J. E. McLarty, 3rd Young.

White Rocks—Ledwell Boswell, 1st Adult, 1st Young.

White Wyandottes—Rev. M. Monaghan, 1st Young.

E. J. Vessey, 2nd Young.

Ledwell Boswell, 3rd Young.

White Leghorns—W. Neale, 1st Adult.

Peter Brodie, York, 1st Young.

Brown Leghorns—John Feetham, 1st Adult, 1st Young.

S. C. Black Minorcas—J. T. Beagan, 1st Young, Lilly Cairns, 2nd Young.

S. C. R. I. Reds—E. Howatt, 1st Young Pen.

GEESE

Toulouse, over 1 year—Earl Boswell, Frenchfort, 1st and 2nd Gander, 1st Goose.

Warl Boswell, Frenchfort, 2nd Goose.

Embden, over 1 year—Earl Boswell, 1st Gander, 1st and 3rd Goose.

R. B. McKinley, 2nd Gander, 2nd Goose.

A. O. V., Over 1 year—John Whitlock, 1st Gander, 1st Goose.

Earl Boswell, 2nd Gander, 2nd Goose.

Toulouse, 1918—Earl Boswell, 1st and 2nd Gander, 1st and 2nd Goose.

Embden, 1918—Earl Boswell, 1st Gander, 1st Goose.

Rowen Ducks, over 1 year—A. H. Boswell, 1st and 2nd Drake, 1st and 2nd Duck.

Pekin, over 1 year—Earl Boswell, 1st Drake, 1st Duck.

Rowen Duck, Hatched 1918—A. H. Boswell, 1st Drake, 1st Duck.

John Whitlock, 2nd Drake, 2nd Duck.

Pekin Duck, Hatched 1918—John Whitlock, 1st Drake, 2nd Duck.

Earl Boswell, 1st Duck.

A. O. V. Duck, Hatched 1918—Earl Boswell, 1st Drake, 1st Duck.

Amos Acorn, 2nd Drake, 2nd Duck.

Dressed Poultry etaoo—G7oAH1ca

DRESSED POULTRY

Artemas Betts, Cumberland, Dressed Cockerels, 1st and 2nd.

Ben Rodd, Marshfield, Dressed Cockerels, 3rd.

DRESSED FOWL

Ben Rodd, 1st; John Whitlock, 2nd; A. Betts, 3rd.

DUCKS

John Whitlock, 1st and 2nd.

Doz. Chicks for Export—A. Betts, 1st and 3rd; B. Rodd, 2nd.

EGGS

Doz. Specials, John Whitlock, 1st; W. J. Cudmore, 2nd; E. Howatt, 3rd.

Doz. Extras—E. J. Vessey, 1st; Wm. Cudmore, 2nd; Ledwell Boswell, 3rd.

Case Specials—E. J. Vessey, 1st; Ben Rodd, 2nd.

Case Extras—E. J. Vessey, 1st; C. T. Ferguson, 2nd.

School Club Exhibit—St. Teresa's Poultry Club, 1st.

Essay on Poultry—1st Lilly Cairns, Baldwin's Road; 2nd, Andrew Lewis, St. Peters; 3rd, David S. Rcss, Eldon.

SPECIAL AWARDS

1.—Silver Cup donated by the Hughes Drug Co., for the best display any one variety, W. J. Cudmore.

2.—Silver Cup, donated by Carter & Co., for best Breeding Pen, any variety, W. J. Cudmore.

3.—Silver Cup, donated by Henderson & Cudmore, for the best cock and hen any variety, W. J. Pickard.

4.—William Kerr, $5.00 for best and largest display Barred Plymouth Rocks (Utility), G. T. Ferguson.

5.—William Kerr, $5.00, for best and largest display of White Wyandotts (Utility), Rev. M. Monaghan.

6.—George Lightizer, $5.00, for best and largest display White Wyandotts (Standard), donor not competing, Jos. White.

7.—J. F. McLarty, $3.00 for best School Club exhibit, St. Theresa's Poultry Club.

9.—Harris Abattoir Co., $2.50 for best box chickens packed for export, Artemas Betts.

10.—Harris Abattoir Co., $2.50 for best 30 doz eggs (Extras), E. J. Vessey.

11.—Premier Arsenault, $2.00 for best Cockerel and Pullet, S. C. Rhode Island Red (Utility), E Howett.

12.—Commissioner of Agriculture offers a pair of Rock Chickens for the best essay on poultry, by a member of a School Club. A pair of White Wyandtts for 2nd best, Lilly Cairns, Baldwin's Road.

13.—Andrew Lewis, St. Peters.

14.—Buntain and Bell, $2.50 for best cock, hen, cockerel and pullet Barred Rocks (Standard), T. C. Latham.

15.—W. S. Louson, $2.50 for best cock, hen, cockerel and pullet, White Rock (Sandard), Earl Boswell

16.—Sims Packing Co., $2.50 for best cock, hen, cockerel and pullet White Wyandotte (Standard) George Lightizer.

18.—Fennell & Chandler, $2.50 for best cock hen, cockerel and pullet, Brown Leghorn (Standard), William Whitlock.

19.—Island Cold Storage Co., Ltd., $2.50 for best cock hen, cockerel and pullet, Black Minorcas, S. . (Standard), W. J. Cudmore.

20.—A. F. Houston, $2.50 for best cock, hen, cockerel and pullet, Black Minorcas R. C. (Standard), Albert Carr.

26.—E. T. Hggins, $2.00 for best Breeding Pen of Leghorns (Standard), W. J. Pickard.

27.—E. A. Foster, $2.00, for best Breeding Pen of iMnorcas (Standard), W. J. Cudmore.

29.—McKinnon Drug Co., $2.00, for best Breeding Pen of Rhode Island Reds (Standard), Otto Hoffman.

30.—Jenkins & Son, $2.00, for best Breeding Pen of Bantams, A. F. Houston.

31.—A. F. Curren, $2.50, for best Breeding Pen of White Rocks (Utility), C. T. Ferguson.

33.—Albert Carr, $2.50, for best Breeding of White Rocks (Utility), Ledwell Boswell.

34.—A. F. Curran, $2.50, for best Breeding Pen of Wyandotts (Utility), Rev. M. Monaghan.

36.—L. E. Prowse, $2.00, for best Breeding Pen of Leghorns, Brown, (Utility) John Feetham.

38.—Gunn Langlis Montreal, $2.00, for best Breeding Pen of Minorcas, (Utility), J. F. Beegan.

39.—Otto Hoffman, $2.00, for best Breeding Pen of Rhode eIsland Reds, S. C. (Utility), E. Howett.

21.—Carvell Bros., $2.50, for best cock, hen, cockerel and pullet, Rhode Island Red, S. C. (Standard), Alto Hoffman.

22.—R. V. Longworth, $2.50, for best cock, hen, cockerel and pullet, White Leghorn (Standard), W. J. Pickard.

24.—L. M. Poole & Co., $3.00 for best Breeding Pen Barred Rocks, (Standard), T. C. Latham.

25.—A. Irwin, $3.00, for best Breeding Pen of Whte Wyandotts (Standard), Jos. Whte.

41.—Buntain & Bell, $2.50, for best cock, hen, cockerel and pullet, Barred Rock ,(Utility), C. F. Ferguson.

42.—W. S. Louson, $2.50, for best cock, hen, cockerel and pullet, White Rock, (Utility), V. O. Skinner.

43.—Sims Packing Co., $2.50, for best cock, hen, cockerel and pullet, White Wyandotts, (Utility), Rev. M. Monaghan.

45.—Fennell & Chandler, $2.50, for best cock, hen, cockerel and pullet, White Leghorn (Utility), Wm. Neal.

46.—President Longworth, $2.50, for best cock, hen, cockerel and pullet, Brown Leghorn, (Utility), John Feetham.

47.—Island Cold Storage Co., Ltd., $2.50, for best cock, hen, cockerel and pullet, Mincorcas (Utility), J. T. Reegan.

48.—Carvell Bros., $1.00 for best cock, hen, cockerel and pullet, Rhode Island Reds, S. C., (Utility), E. Howett.

50.—H. E. Cantwell, $1.00, for best pair of A. O. V. Geese, John Whitlock.

51.—Ivan Redin, $1.00, for best pair of Pekin Ducks. Earl Boswell.

52.—Pas Paton, M. L. A., $1.00, for best pair of R. C.Minorcas, Bert Carr.

53.—R. E. Colwell, $1.00, for best pair of Buff Orpingtons, Jos. Costello.

54.—C. W. Patterson, $1.00, for best pair Columbian Wyandotts, Geo. Williams.

55.—W. W. Stanley, $1.00, for best pair of Wyandotts, A. O. V., Wm. Beazley.

57.—Stanley Shaw & Feardon, $1.00 for best pair Partridge Wyandotts, Jos. Costello.

W. N. Tanton, Clock, for best collection Bantams, A. F. Houston.

59.—E. W. Taylor, Clock, for best collection Minorcas, W. J. Cudmore.

60.—Rogerd Hardware Co., Razor, for best pair Leghorns, A. O. ., Brent Hooper.

61.—Carter & Co., 50 lbs. Chick Feed for best pair Rowan Ducks, A. H. Boswell.

62.—Carter & Co., 50 lbs. Chick Food for best pair White Wyandotts, George Lightizer.

63.Amos Acorn pipe stand for best pair Columbian Wyandotts, John Williams.

64.—G. H. Hutcheson, Fountain Pen, for best pair Bantams, C. H. Smythe.

65.—McLeod & McInnis, 1 lb. Tobacco for best pair White Leghorns, W. J. Pickard.

66.—McLeod & McInnis, 1 lb. Tobacco, for best pair Buff Leghorns, John Feetham.

68.—Stanley Shaw & Peardon, $1.00 for best pair Minorcas S. C., W. J. Cudmore.

69.—J. R. Gillis, Watch Fob, for best exhibit any variety shown by member under 13 years of age, John Wiliams.

70.—E. Acorn, $1.00, for best exhibit, Amos Acorn.

71.—Alley & Co., (Special) for largest number of points (Utility), Rev. M. Managhan.

72.—W. W. Wellner (Special) for best collection Pigeons, A. F. Houston.

73.—A. E. Tombs, Flash Light, for best air Houdans, H. Lapthorn.

74.—A. F. Houston, Flash Light, for best pair Pit Games, Bert Carr.

75.—J. D. Jenkins, 50c. for 2nd best pair Pit Games, Bert Carr.

76.—Auld Bros., Ltd., offer 1 package "Royal Purple" poultry specific, 1 pkg. Lice Killer, 1 pkg. Roup Cure, 1 pkg. Chick Feed for the best male and female in the following varieties (Standard and Utility): Leghorns, Minorcas, Plymouth Rocks, Rhode Island Reds, Wyandotts and Orpingtons, W. J. Pickard Leghorns.

77.—W. J. Cudmore, Minorcas.

78.—T. C. Latham, B. P. Rocks.

79.—Otto Hoffman, R. I. Reds.

80.—Geo. Lightizer, Wyandotts.

81.—Jos. Costello, Orpingtons.

82.—Wm. Neale, Leghorns.

83.—J. T. Beegan, Minorcas.

84.—E. Howett, R. I. Reds.

85.—Rev. M. Monaghan, Wyandotts.

86.—C. F. Ferguson, B. P. Rocks.

87.—Not awarded, Orpington.

88.—Beer & Weeks Rocking Chair for best Wyandott cock and hen, Geo. Lightizer.

89.—Gunn Langlois, Montreal, $3.00 for best pair dressed cockerels, A. Betts.

90.—Gunn Langlois, Montreal, $3.00 for best 1 doz. eggs, special, John Whitlock.

91.—Maritime Electric Co., Ltd., $1.00 for best 1 doz. eggs, specials, John Whitlock.

92.—Mayor Wright, $1.00 for best pair geese, Bremen or Emden, Earl Boswell.

93.—Mayor Wright, $1.00 for best pair dresed fowl, Ben Rodd.

94.—W. J. Pickard offers 1 setting of White Leghorn Eggs for the best cock, hen, cockerel and pullet, White Leghorns. And one setting for the best Breeding Pen of White Leghorns, John Whitlock.

95.—W. J. Pickard, $1.00 for the best pair Toulouse Geese, Earl Boswell.

96.—W. J. Pickard, $1.00 for best pair A. O. V. Ducks, Earl Boswell.

98.—W. J. Pickard, $2.00 for the largest and best display water fowl, Earl Boswell.

99.—Maritime Electric Co., Ltd., $1.00 for best cock, hen, cockerel and pullet, Game Bantams, A. F. Houston.

100.—Maritime Electric Co., $1.00, for best pair Cochin Bantams, A. F. Houston.

101.—Cyrus Poitier donates $2.50 for the best and largest display of Rhode Island Reds (Utility) and $2.50 for the best and largest display of Minorcas (Utility), E. Howatt.

102.—J. F. Beegan.

103.—Cup donated by Amos Acorn, for two Columbian Wyandotts, hatched, 1918, Amos Acorn.

104.—S. F. Hardy, 50 pair Buff Leghorns, young, Fred Blanchard.

105.—Colin McDonald, 1 Box Chocolates, for best Wyandott Cock and Hen, Geo. Lightizer.

106.—Art. Nelson, $1.00, for best Breeding Pen Wyandotts, John White.

107.—Som Craig, $1.00, best doz. Brown Shelled eggs, John Whitlock.

108.—E. G. Coombs, $2.00, best cock, and hen ,Partridge Wyandotts, Jos. Costello.

109.—E. G. Coombs, $1.00, cockerel and pullet, Partridge Wyandotts, Jos. Costello.

110.—E. G. Coombs, $2.00, best pair Houdans, H. Lapthorn.

National White Wyandott Challenge Cup awarded Geo. Lightizer.

Some of the Problems Which Co-operation Has Not Solved

Editor The Maritime Farmer:—

Co-operation has done much for the farmer. Wherever given a fair trial it has accomplished far greater results than the most sanguine supporter anticipated. It has brought our farmers together in a way that no other organization has ever done; it has obtained for them important government and municipal concessions, better transportation facilities, better prices for their farm products, opened up new markets and by its strength operating in so many fields of activity, called new attention to the importance and dignity of the farmer.

But though co-operation has accomplished such splendid results it has failed in some respects like all industrial movements to fulfill some of its early expectations. It has solved many of the farmer's problems, but there are others which thus far the movement has failed to solve.

Perhaps the first of these which ought to be mentioned is the problem of the middleman, which is so much in the limelight in these days.

Co-operation probably owes its rise very largely to the dissatisfaction which the producer has experienced, arising from the excessive profits from the handling of his potatoes, fruit or beef. Of the dollar which the consumer paid, the farmer actually received but thirty-five cents. This was felt to be a decided injustice and as a remedy he eagerly seized upon the co-operative movement as furnishing him with the only organization able to transfer to him the fixing of the prices of the products of the farmer. Furthermore he hoped not only to acquire the power of fixation of prices, but also to eliminate altogether the middleman, who seemed an altogether unnecessary link between him and the consumer.

Now as a matter of fact, co-operation has not been able to eliminate the middleman. He is still with us and in some respects doing a more thriving busines than ever. Some middlemen undoubtedly have been put out of business by the co-operative movement and these were the least desirable of the larger brotherhood of traders and dealers without capital with nothing to lose and everything to gain by their relations with the farmer. A large number of this class have undoubtedly been eliminated but the wholesaler, the jobber, the legitimate retailer, the city commission man and even the so-called speculator are still with us.

For one thing it was found to be beyond the financial resources of the co-operative movement to establish wholesale branches of their business at consuming centres; for another thing it was discovered that they lacked the men of the required business experience to conduct successfully those branches, and so the movement realized that it was the part of wisdom to confine its operations to making use of the ordinary channels of trade. To eliminate entirely the middleman was found to be an impossibility and so the movement has set itself to the task of cutting out the irresponsible middleman and limiting the profits of others to a legitimate scale.

Neither has co-operation been able yet to devise a scheme whereby the members may be able to receive full returns for their crops as soon as they are harvested.

This is one of the unattractive features of co-operation, and one of the chief reasons why the speculator prospers side by side with the movement capable of accomplishing so much for the farmer.

A large share of the farmer's yearly financial obligations then become due. They pour in upon him in a regular deluge. Fertilizer bills, feed bills, wages, taxes, bills for barrels, farm machinery, repairs, threshing, pasturage, etc., for all of which he must finance in some way. Of course, if he has been more than ordinarily successful these bills will not accumulate, but will have been liquidated promptly when they were contracted, but the average tiller of the soil is not so forehanded and his bills must wait until he can realize on his crops.

Now no co-operative association has sufficient paid up capital to enable it to advance its members money enough to cover the full value of their members' crops. They may be able to make them part payments to enable them to meet some of their more pressing obligations and further assist them by carrying on their own books still others of their obligations, but to pay them cash down the full value of their crops as soon as delivered to the warehouse as speculator is supposed to do, excepting perhaps, the single case of the Grain Growers of the West, and here the government has come to the assistance of the farmers with special legislation, the Co-operative Association has utterly failed.

The only method so far known by which the co-operation movement can return to its members the proceeds of their crops is to place them upon the markets of the world and to remit to them the returns as quickly after their receipt as possible. This of course often consumes a considreable time, but there is so far no other way known to co-operation.

Then, further, the co-operative movement has failed to cope successfully at all times with the human element in its constitution. This is a problem not peculiar to co-operation, presenting itsefl alike in all social and business organizations, being a disturber even of the peace of the church. Frequently a member receives an offer for his produce which he considers preferable to what he expects to receive from his Association and he sells, or he buys his supplies from a competing firm at a little better rate than his own company can sell them, or maybe he becomes dissatisfied with the management and withdraws for the time being from the Association. Such conduct, however justified it may appear to the member, weakens his company to that extent and if it were to become at all general would speedily disrupt the company.

(Continued on page 571)

Ferguson's Alacrity Tomato

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DATES OF ISSUE

March	4-18
April	1-22
May	6-27
June	10-24

FEBRUARY 18, 1919.

GIVE AND TAKE POLICY BINDS FATHER AND SON IN FARM OPERATION

When we think of the ungratefulness of humanity, it opens a field of vastness that our visions fail to encompass. Worthy sons feel deeply the obligations under which they are placed. No time can obliterate from the memory of the loyal, dutiful son the gratitude he owes his father. No statute of limitation bars the payment which can never be in full. Nothing swells the heart, dilates the blood channels and causes a glow of warmth to creep over the body of the hoary-headed father, than the exercise of genuine gratitude of the son for his very being.

The father sees the son grow from the tiny, helpless infant day by day to young manhood, with pride and thankfulness, often little thinking how much help the son will be to him in his declining years, when by the law of nature, man ripens and must lay down the tools of toil and seek rest in the old armchair. Now is when the son can show a gratitude that knows no bounds. How many do it? Many a father has gone to his grave feeling that he had an ungrateful son unwilling to aid him in his declining years and the son feeling that his father was unreasonable.

The reasons for this pulling apart of fathers and sons is lack of training on one side and ingratitude on the other. Sons must be taught to obey, work and manage. Fathers must be taught how to interest the sons in their work that they will step in and take the reins where the father drops them. When boys are well in their teens they desire to make money for themselves, to accumulate property and to have a voice in the management of affairs. Now is when the pulling begins. The father thinks that he has managed, clothed, fed, educated and reared the son and now when he is of the age to be of use to him he wishes pay for every turn he does. The son brands the father as an "old fogy," "backwoodsman," and not "up-to-date!" the son hikes out to a neighbor and the father hires the neighbor's son.

Some sons haven't as much reaspect and gratitude for their father as a horse and dog have for their master; and animals will have no respect for their master unless they are trained to obey him. A professor was once asked when it was best to begin training a child and he replied: "Three hundred years before he is born."

There is no occupation that would be greater blessed with good returns by the unity of father and son than that of farming. How much better it would be to pay his son wages than that of his neighbor? How much better for the son if he could remain on the farm and step in the footsteps of his father? Many farmers' sons go to the cities and join the throng of unskilled laborers and buy every morsel that goes between their teeth. The father must not be unreasonable; he must strive to hold the boys on the farm and as they grow older make them an equal partner with him. Be willing to make concessions, use tact and prove yourself to be a general. We read of diplomacy—but the father who holds his sons together and handles them to the best advantage, is the greatest diplomat of all.

The soft, mushy and fertile brain of the developing youth overflowing with egoism, conceit and self-esteem is a problem to handle; they think they know it all. That round sphere on top of their shoulders filled with a soft, undeveloped conglomeration of white and gray matter called cells, belches out many queer ideas through the aperture called the mouth. The father must be equal to the occasion. Now is the time to show his generalship. You have worried, fretted and labored over the youth in his infancy and with the aid of the loving and ever faithful mother you have remained by the bed of sickness night after night fearing each moment that the next would be all in vain. You may have thought this to be a great task, but lo, the task has just begun and it will be in proportion to the weakness of your generalship. If you have not taught that son the evils of intemperance, frugality, the value of a dollar and the price of wickedness he will be a thorn in your side to the day when your eyes are closed forever.

People cannot be driven to see their mistakes of evil ways; they must be led unconsciously into the paths of right and rectitude. Children are imitators, therefore how can you expect your sons to refrain from chewing, smoking, drinking, wickedness and squandering money if you do? Get right yourself; good examples are the best of instructors. You cannot drive the youth to see their folly; compulsion stirs up a reservoir of rebellion within the human body and as the poor decrepit liver is accused of everything, we suppose it is the store-house of contrariness. You may just as well attempt to drive a man to do a thing as to stop a cyclone with an umbrella.

There is another thing that is baneful in its effects and that is the teaching of others in getting young boys dissatisfied with their home surroundings. Many fathers would get along better with their sons if the boys were not coached to leave home by meddling people, and often these very meddlers are married men with sons of their own to see after. Shame on such fathers. Better attend to your own affairs and see that your sons are not worked too hard and that they have plenty of spending money and what not.

Fathers are largely responsible for many of the unpleasant turmoils occurring in the farm life; many feel they are king of the plantation and the big "it" and will not even permit a single suggestion from the sixteen-year-old son who thinks by this time that he is some "pumpkin" and should be seen and heard. The father cannot get the son interested in the work unless he gives the chap some consideration. These ties of consideration which bind father and son should be recognition and money. The father should recognize the son's say or voice in the farm affairs and give him spending money. 'Tis better to have the son raise some crop, a pig or calf and sell it which makes him feel he has earned the money and it gives him an air of independence or self support. Boys can often purchase their own clothes and needs in this way which makes the burden lighter on the parents. Boys sometimes become helpless men because they expect their parents to always help them, not even thinking that they must look out for themselves and cannot always remain on papa's knee.

We do not argue that every boy should remain on the old home farm. There must be some to drift out into the world and do its work, but we do say that there are too many that are turning a cold shoulder to farming, the most noble and hon orable of professions. We often read of some noted jurist, general or public man who has attained fame in some calling, men who have achieved to the highest round of the ladder and stamped their names on the undying tablet of memories, men whose names and good deeds are known to the whole civilized world, to remark with remorse: "Oh, had I only remained on the old home farm how much better 'twould have been." Who can explain this allurment of the old farm home?

May father and sons adopt the Golden Rule as their criterion, conduct their farms on a business-like basis, learn to give and take and there will be little trouble.

DEATH OF THE FARM MORTGAGE

Under circumstances which the German treaty-breakers, the disturbers of the peace, have thrust upon us, there is one thing designed to aid agriculturists to feed our armies and allies, which with the war over, will never be abated, writes James L. Hill in the American Review of Reviews. We raise our eyes and see an angel of benevolence coming down a common country road. It is in the form of an original system of rural credits. The Treasury Department of the United States has inaugurated a Federal Farm Loan Board, which has already loaned to the farmers of the nation more thn $117,000,000. Its outstanding feature is: If a borrower of a large amount pays his interest, he never hears of the debt. Interest at 6½ per cent not only takes care of that item, but it pays off, in less than a generation, all the money borrowed. A farmer at the start requires money for buildings, !machinery and herds. The aching heart of many a widow, bereft of her home by the foreclosure of a mortgage on her property, will see the deep significance in the sacrament that I am seeking to describe. The process is called amortization. The syllable mort, as in mortal, means death of the debt. From the first the mortgage is struck with death.

So happy for all concerned is this method (resembling in its operation a cooperative bank) of obtaning a greatly needed working capital that we may well rejoice with a large class of deserving people, who, for the first time, have the means of doing a larger, more profitable business, wtih the sting and hazard graciously removed. With what bitterness we have all heard the children of the poor recite the anguish that came into the home when the mortgage—like the naked sword, suspended by a single hair, over the head of Damocles—came to do its dreaded office! "But the children began to be sorely weary," says Bunyan, "and they cried out unto Him that loveth Pilgrims, to make the way more comfortable." We have come to see the Government make the way of the children, who inherit a mortgage, more comfortable. All's well! You have had no trouble with the interest. Only go on as you have been going. The farm, the home, are all yours. The mortgage is dead.

N. B. PROVINCIAL POULTRY SHOW

A Provincial Poultry Show held in Fredericton, New Brunswivk, on January 28, 29 and 30 under the auspices of the York County Poultry Association, was an unqualified success, especially in view of the difficulties experienced in staging the show in view of the recent ban on public gatherings, the short time in which the show had to be arranged, etc. The Provincial Show is a substitute for the two local shows held in previous years at Fredericton and Moncton, and its success speaks well for the union of these two exhibitions which has been arranged for an indefinite number of years.

It is extremely unforunate that more desirable conditions cannot be arranged for an exhibition of this size. The building used was most unsuitable in every respect being so small that it was necessary in many places to stage the exhibit three coops high. The lighting features were extremely inadequate and had to be improved as much as possible by artificial lighting which was not at all satisfactory in view of there being two or three tiers of coops. It was also necessary to place two, three and in some cases four, birds in a coop which is large enough for only one in order to show the birds to good advantage.

In spite of the foregoing the entries were greatly in excess of last year, totalling this year 893 birds as against 475 in January of 1918. The 1919 show had an exhibitors list of 57 names whereas at the 1918 show there were only 26 competitors. This year exhibits were received from widely separated points and from practically every section of the Province, quite in contrast with the more restricted districts from which entries were previously expected and received.

The most desirable feature of the exhibition is that the general utility varieties greatly predominated, especially Barred Plymouth Rocks, White Wyandottes and Rhode Island Reds which augers well for the development of the poultry industry in the Province from the commercial point of view. For purpose of contrast it might be mentioned that in 1918 there were 20 Barred Plymouth Rocks on exhibition while this year the total exhibits of the same variety was more than six times that number. The other varieties mentioned also show a substantial increase.

Recognizing the value of utility poultry in the development of the industry in New Brunswick the York County Poultry Association at the recent show put utility birds on practically the same basis as the exhibition ones, that is the same prize money was paid and the same entry fees charged though the classes were more limited only the more desirable varieties being given separate classes. This has resulted in a phenomenal increase in the interest paid to this class of stock which was reflected in the entries received ,there being in 1918 ten birds in all shown in the utility classes by two exhibitors, whereas during the recent show twenty exhibitors competed in the utility classes and showed a total of 150.

The show was featured also by an entirely new idea in the exhibiting of utility Barred Plymouth Rocks by members of Boys and Girls Poultry Clubs formed in various Counties of the Province during 1918 under the direction of the Poultry Division of the Department of Agriculture. These came from distant points and indicates that the youth of the Province is becoming interested in practical poultry culture. No doubt this addition to the regular exhibits will continue to be an increasingly important factor in poultry exhibitions.

The management was most fortunate in securing the services of Mr. Richard Oke, of London, Ont., one of America's most competent poultry judges. Mr. Oke gave perfect satisfaction and his work is most highly spoke nof by the various exhibitors, being an exprienced judge and one whose services are in great demand for all the largest shows he was particularly valuable in that the local exhibitors could learn a great deal regarding the preparation of birds for a Poultry show and the comparative value of their own birds and those of other places where the poultry industry is a more important one and developed to a much higher debree.

In view of the fact that the recent show was undertaken in spite of war time conditions we are justified in assuming that the poltrymen of New Brunswick are wide awake to the importance of their industry and are determined to make poultry raising as a much more important feature of agricultural activity.

Following is a list of the prize winners:

Exhibition B. P. Rocks: Watson Lutz, Moncton, 1st and 2nd cock, 1st hen, 1st 2nd, 3rd, 4th cockerel, 1st, 2nd pullet; Bertrand Goodspeed, Penniac, 3rd cock; John E. Page Fredericton, 2nd and 3rd hen, 3rd, 4th and 5th pullet; Hugh McMonagle, Fredericton, 5th and 6th cockerel; Gordon E. Kitchen, Fredericton, 6th pullet.

White P. Rocks: Henry Simmons, Fredericton, 1st hen; Watson Lutz, 1st cockerel, 1st pullet; Henry Currie, Fredericton, 2nd cockerel, 4th pullet; George F. Lockhart, Fredericton, 3rd pullet, 2nd cockerel; John Oldham, Fredericton, 3rd pullet.

Partridge P. Rocks: Henry Simmons, Fredericton, 1st cock, 1st and 2nd hen; R. P. Allen, Fredericton, 1st cockerel.

White Wyandottes: P. L. Morgan, North Devon, 1st cock, 1st, 2nd 3rd, 4th and 6th hen, 1s tcockerel, 1st, 3rd, 4th, 5th and 6th pullet; Hugh McMonagle, Fredericton, 2nd cock, 5th hen, 3rd cockerel, 2nd pullet; Lloyd B. Johnson, Nashwaaksis, 2nd cockerel.

Buff Wyandottes: W. S. Swetnam, Moncton, 1st cock, 1st, 2nd and 3rd hen, 1st, 2nd and 3rd cockerel, 1st and 2nd pullet; J. Scott, St. John, 2nd cock, 3rd pullet.

Partridge Wyanadottes: R. P. Allen Fredericton, 1st cock, 1st and 2nd hen, and 1st pullet; C. J. Toner, Fredericton, 2nd hen, 2nd cockerel.

Columbian Wyandottes : Cicle Church, Moncton, 1st cick, 1st hen, 1st and 2nd cockerel, 1st and 2nd pullet.

A. O. V Wyandottes: H. C. Jewett, 1st pullet.

S. C. Rhode Island Reds: W. S. Bailey, Fredericton, 1st cock, 1st and 2nd hen, 2nd, 3rd, 5th cockerel, 1st 2nd, 3rd and 6th pullet; Aubrey Stevenson, St. Stephen, 2nd cock, 4th and 5th cockerel; A. D. Gunter, Fredericton, 1st cockerel, 4th and 5th pullet.

A. O. V. Dominique: John P. Rain, St. John, 1st cock, 1st hen.

Buff Orpingtons: J. N. Ferguson, Fredericton, 1st cock, 1st hen, 1st and 2nd pullet; A. Vye Gibson, Moncton, 1st and 3rd cockerel.

Black Orpingtons: H. Gordon Dobson, Moncton, 1st cock, 1st, 2nd and 3rd hen, 1st cockerel, 1st, 2nd and 3rd pullet.

White Orpingtons: Henry Simmons, Fredericton, 1st hen, 1st, cockerel, 1st and 2nd pullet.

Blue Orpingtons: Watson Lutz, Moncton, 1st cock, 2nd hen, 1st cockerel, 2d pullet; Day Bros., Moncton, 1st hen and 1st pullet.

Indian Cornish: John P. Bain, St. John, 1st cock, 1st and 2nd hen, 1st cockerel, 1st pullet.

Indian White Cornish: John P. Bain, St. John, 1st hen.

A. V. Dorkings: Day Bros., Moncton, 1st cock, 2nd hen, 1st pullet; John J. Bain, 1st hen.

Red Caps: John P. Bain, 1st cock, 1st hen, 1st cockerel, 1st pullet.

Light Brahmas: Day Bros., 1st cock, 1st and 3rd hen, 2nd pullet; Charles H. Smythe, Moncton, 2nd and 3rd cock, 2nd hen, 2nd cockerel, 1st pullet; Joseph Ellick, Nashwaaksis, 1st cockerel and 3rd pullet.

Dark Brahmas: Day Bros., 1st and 2nd cock, 1st and 2nd hen, 1st cockerel.

Partridge Cochins: Day Bros., 1st and 2nd cock; 1st and 2nd hen, 1st pullet.

Black Langshans: Charles H. Smythe, Moncton, 1st and 2nd cock, 1st and 2nd hen, 1st and 2nd cockerel, 1st and 2nd pullet.

S. C. Brown Leghorns (light) Hugh McMonagle, Fredericton, 1st hen, 1st cockerel, 1st pullet.

S. C. Brown Leghorns (dark): Rudolph I. Wilson, Moncton, 1st cock; R. W. McKenzie, Moncton, 2nd cock, 2nd cockerel and 2nd pullet; Hugh McMonagle, 1st and 2nd hen, 1st and 3rd cockerel, 1st pullet.

R. C. Brown Leghorn (light): C. Roy Forbes, South Devon, 1st and 2nd hen; J. Scott, St. Pohn, 3rd hen, 2nd cockerel and 1st pullet; James W. Stickles, North Devon, 1st cockerel.

R. C. Brown Leghorn (dark): J. Scott, 1st cock and 1st cockerel; Arthur Anderson, Fredericton, 2nd cockerel.

S. C. White Leghorns: J. N. Ferguson, Fredericton, 2nd cock, 2nd hen, 2nd, 3rd and 4th cockerel, 2nd and 3rd pullet; Odbur James, Moncton, 1st hen, 1st cockerel, 1st pullet; O. L. McAllister, Moncton, 3rd hen; B. J. Griffiths, Fredericton, 4th pullet.

R. C. White Leghorns: J. Scott, 1st cock, 2nd hen, 1st cockerel, 1st pullet; Day Bros. 1st hen.

S. C. Buff Leghorns: Cicle Church, Moncton, 1st and 2nd hen; Day Bros., 1st cockerel, 1st pullet; John P. Bain, 2nd cockerel, 2nd pullet.

Black Leghorns: Day Bros., 1st cock, 1st and 2nd hen, 1st cockerel, 1st and 2nd pullet; John P. Bain, 2nd cock.

S. C. Black Minorcas: Alfred Mullins, Moncton, 1st cock, 1st hen, 1st cockerel, 1st pullet; Day Bros., 2nd cock, 2nd hen, 4th cockerel, 2nd pullet; H. C. Jewett, Fredericton, 3rd hen; John Oldham, Fredericton, 2nd cockerel, 3rd pullet; George Baxter, Fredericton, 3rd cockerel; George F. Lockhart, Fredericton, 4th pullet.

R. C. Black Minorcas: John P. Bain 1st cock, 1st hen, 1st and2nd cockerel, 1st and 2nd pullet.

White Minorcas: Roy Forbes, 1st and 2nd hen.

White Faced Black Spanish: John P. Bain, 1st cock, 1st hen.

Blue Andalusians: Chas. H. Smythe 1st cock and 1st hen; John P. Bain, 1st cockerel and 1st pullet.

S. C Mottled Anconas: Chas. H. Smythe, 1st and 2nd cock; 2nd and 3rd hen, 4th cockerel, 4th pullet; H. C. Jewett, 1st hen; J. W. Stickles, North Devon, 1st, 2nd and 3rd cockerel, 1st, 2nd, 3rd, 5th and 6th pullet.

Houdans: Day Bros., 1st cock, 1st and 2nd hen, 1st cockerel and 1st pullet.

Silver Spangled Hamburgs: George F. Lockhart, 1st hen.

Black Hamburgs: John P. Bain, 1st cock, 2nd hen, 1st cockerel; J. Scott, 1st hen, 2nd cockerel and 1st pullet.

Silver and Gold Campines: John P. Bain, 1st and 2nd hen.

Black Breasted Red Games: Stanley R. Seaman, Moncton, 1st cock, 1st and 2nd hen; J. Scott, 1st and 2nd cockerel, 1st pullet.

Pyle Game: J. Scott, 1st cock, 1st and 2nd hen and 1st and 2nd pullet.

A. O. V. Game: O. L. McAllister, 1st cock, 1st, 2nd and 3rd hen, 1st and 2nd cockerel, 1st, 2nd and 3rd pullet.

B. B. Red Game Bantams: J. N. Ferguson, 1st cock, 1st hen, 1st and 2nd cockerel.

A. O. V. Game Bantams: O. L. McAllister, 1st cock and 1st hen.

Black Cochin - Bantams: C. H. Smythe, 1st and 2nd cock, 1st hen, 2nd cockerel and 3rd pullet; W. S. Swetnam, 2nd and 3rd hen, 1st and 3rd cockerel, 1st and 2nd pullet.

Buff Cochin Bantams: W. S. Swetnam, 1st cock, 2nd hen, 2nd cockerel, 2nd pullet; C. H. Smythe, 1st hen, 1st cockerel, 1st pullet.

White Cochin Bantams: C. H. Smythe, 1st cock.

R. C. Black Bantams: W. S. Swetnam, 1st hen, 1st cockerel, 1st and 2nd pullet.

Golden Sebright Bantams: W. S. Swetnam, 1st hen, 1st cockerel and 1st pullet.

Silver Sebright Bantams: W. S. Swetnam, 1st cock, 1st pullet.

Bronze Turkeys: Bertrand Goodspeed, Penniac, 1st cock and 1st hen.

Toulouse Geese: Bertrand Goodspeed, 1st and 2nd gander, 2nd and 3rd goose; Odbur C. Stevenson, 3rd gander and 1st goose.

Toulouse Geese: Bertrand Goodspeed, 1st gander and 1st goose.

Embden Geese: Bertrand Goodspeed,, 1st gander, 1st goose.

White Embden Geese: Bertrand Goodspeed, 1st gander and 1st goose.

Grey African Geese: Bertrand Goodspeed, 1st goose.

Rouen Ducks: P. L. Morgan, 1st and 2nd drake, 1st and 2nd duck.

Indian Runner Ducks: Joseph Ellick, 1st drake, 1st duck.

A. O. V. Ducks: George F. Lockhart, 1st drake, 1st duck.

Utility Barred Plymouth Rocks: Watson Lutz, 1st cock, 2nd hen, 1st cockerel and 1st pullet; Hugh McMonagle, 1st and 2nd hen, 5th cockerel; W. E. B. Tait, Dorchester, 4th hen; Mrsfi Godfrey Burnham, Fredericton, 2nd cockerel and 5th pullet; R. P. Allen, 3rd cockerel and 2nd pullet; Joseph Ellick, 6th cockerel and 4th pullet; W. S Bailey, 3rd and 6th pullet; Bertrand Goodspeed, 4th cockerel.

Utility White Wyandottes: G. M. Lake, Newcastle, 1st cock, 1st and 2nd hen, 1st cockerel, 1st and 2nd pullet; P. L. Morgan, 3rd hen, 2nd and 3rd cockerel; Hugh McMonagle, 3rd pullet.

A. V. Rhode Island Reds, Utility: Bertrand Goodspeed, 1st and 2nd pullet.

A. O. V. Wyandottes, Utility: W. S. Swetnam, 1st and 2nd cockerel, 1st and 2nd pullet.

Boys' and Girls' Clubs, B. P. Rocks: Mary Neales, Hartland, 1st cockerel, 1st and 2nd pullet; Roland B. Shaw, New Maryland, 2nd cockerel and 3rd pullet.

Boys' and Girls' Clubs, B. P. Rocks: Eva Poirier, St. Louis, 1st cockerel, 1st and 2nd pullet.

B. P. Rock Breeding Pens: (cockerel mating): Watson Lutz, 1st and 2nd pen; W. H. Allen, Penniac, 3rd.

B. P. Rock Breeding pen (pullet mating): Watson Lutz, 1st.

White Wyandotte Breeding Pen: P. L. Morgan, 1st; Hugh McMonagle, 2nd.

A. O. V. Wyandotte Breeding Pen: W. H. Moore, 1st; W. S. Swetnam, 2nd.

S. C. Rhode Island Red Breeding Pen: A. D. Gunter, 1st; A. C. Stevenson, 2nd.

Buff Orpington Breeding Pen: A . Vye, Gibson, 1st.

White Orpington Breeding Pen: Henry Simmons, 1st.

White Leghorn Breeding Pen: J. N. Ferguson, 1st; A. D. Gunter, 2nd and 3rd.

Brown Leghorn (light) Breeding Pen: Hugh McMonagle, 1st; C. Roy Forbes, 2nd.

Brown Leghorn (Dark) Breeding Pen: Rudolph I. Wilson, 1st; Hugh McMonagle, 2nd; Mrs. George Jordan, 3rd.

A. V. Anconas Breeding Pen: Jas. Stickles, 1st; C. H. Smythe, 2nd.

A. V. Brahmas Breeding Pen: Day Bros., 1st.

Black Langshan Breeding Pen: C. H. Smythe, 1st and 2nd.

Barred P. Rock Utiltiy Breeding Pen: Gordon Kitchen, 1st; Roland B. Shaw, 2nd; Hugh McMonagle, 3rd.

White Wyandotte Utility Breeding Pen: P. L. Morgan 1st; Hugh McMonagle, 2nd.

A. O. V. Plymouth Rock Utility Breeding Pen: Henry SiSmmons, 1st.

B. P. Rock: W. S. Bailey, 1st cockerel, 1st pullet.

A. V. Rhode Island Reds: W. S. Bailey, 1st cockerel, 1st pullet.

Brown Eggs: A. Vye, Gibson, 1st; R. P. Allen, 2nd; P. L. Morgan, 3rd.

White Eggs: J. W. Stickles, 1st; George F. Lockhart. 2nd.

(Continued on page 592)

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HORTICULTURE.

WINTER INJURY IN THE ORCHARD

Last winter will long be remembered by fruit growers in the Provinces of Ontario and Quebec as one of the hardest on fruit trees of any that has been experienced.

While peach trees were killed back to some extent in Niagara Peninsula, it was among the apple trees and in the colder districts where the greatest losses occurred.

The forms the winter injury took were root killing, spliting of the bark at the base of the tree, sometimes known as "collar rot," bark splitting on the trunk, trunk killing, crotch injury and killing back of the top. The fruit and leaf buds on the trees were often killed also. While a large number of trees died during 1918, there were many more which went into this winter in a very weakened condition and may yet die. By the time pruning is begun it should be possible to tell any trees which are going to die this winter or which have additonal dead wood on them, and it will be possible to prune them intelligently. There will be many cases of crotch injury however, where almost all of the bark and cambium were killed around the base of large limbs and where the latter meet at the head of the tree. Trees injured in this way are very unsatisfactory as they may linger for years in a weakened condition and of little value and eventually will break down if they do not die before doing so. The orchard should be gone over carefully this winter and examined for such injury. When pruning the orchard, the dead bark should be removed from these patches and the wounds painted and kept painted with white lead paint. If much of the bark and cambium in the main crotches are dead, the future of the tree should be considered as very doubtful. If many of the trees in the orchard are affected in this way and the trees are wide enough apart to permit of planting a young tree half way between, without too much shading from the older trees it woudl be well to plan to do this next spring. Good crops may be obtained from these injured trees for some years, and, in the meantime, the young trees will be coming into bearing. Where land is available, however, the setting of an orchard elsewhere is desirable. Other trees may be planted successfully where trees were killed last winter, although it has been said that the young trees will not do well where an older tree has been. Sometimes they do not, but it is usually due to the fact that the older trees that were left overshadowed them. Where they have sufficient light they have succeeded.

When replanting where another tree has been, fill the hole with good surface soil from midway between the rows rather than use the same soil as was thrown out. A rapid way of removing old dead trees is by the use of dynamite.

WINTER INJURY.

Varieties of fruit differ much as to their degree of hardiness and by considering this factor at the time of selecting or ordering nursery stock, serious future losses can be avoided. Hardiness of a vareity can only be determined by experience in growing it through a period of years, and local experience should always be consulted as to this point, if a wise choice is to be made. Hardiness, as usually understood, refers to the branches and limbs of trees, shrubs, etc., and also to the flower buds. As some winters are more severe than others, it is these years that actually determine the hardiness of a variety for any section. Trees that are vigorous, healthy and with their wood well matured or ripened in the fall will winter much better than trees that are weak or diseased or with immature wood that has grown late. Protection from the prevailing winds as provided by hills, woods, windbreaks of trees or buildings, will considerably lessen winter injury, as compared to trees in fully erposed positions and is a point that should be fully considered in making a choice of a location, especially in those sections where there may be some doubt as to the hardiness of a fruit.

The flower buds of a tree or shrub may be injured or destroyed without the wood of the plant being injured. This may be due to extreme cold—or a gradually drying out of the buds. Sometimes in mild weather late in the fall, winter or early spring, the flower buds will develop too rapidly, thus increasing the likelihood of injury from later cold spells or dryness. This frequently occurs in the peach, sweet cherry and raspberry, as well as in some flowering shrubs.

Some varieties of fruits bloom much

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earlier than others and frequently there is as much as two weeks difference between the blooming dates of an early-blooming and late-blooming apple tree. The flower buds when fully opened are very susceptible to injury by frost and frost may considerably reduce or totally destroy a crop of fruit. In many places in the Western States, it has become necessary to practice orchard heating during the blossoming period in order to prevent or lessen the damage from late frosts which occur so frequently. In sections where late frosts are the rule, late-blooming varieties would be more likely to escape injury than early-blooming varieties.

Hardiness may also be considered from the standpoint of the roots of the plant. Injury here may be attributed to deep freezing, alternate freezing and thawing, wet soil and shallow soils, which do not allow the plants to root deeply. Precautions that would greatly lessen root injury would be planting on a deep, well-drained, carefully- prepared soil and by mulching or giving some protection to the ground. The mulch may consist of a cover crop sown for the purpose, or grass, or it may be a covering of straw or strawy manure or boughs from evergreen trees or leaves. Snow makes a good covering and keeps the frost out remarkably well, but it cannot be depended upon for thorough protection.

Hardiness is a matter of degree, some varieties being hardier than others and naturally better suited to colder sections. Local experience is most valuable in determining hardiness for any section and when possible, should be consulted before definitely deciding on the varieties that are to be planted.—T. G. B.

SPRAY FOR APHIDS OR LICE ON PLANTS

What remedy can I use for my plants that are covered with black flies, and there is also white worms in the soil? I have a shamrock plant that is also covered with white insects on underside of leaves. J. C.

Reply: These aphids are often call-plant lice. They do not bite off and chew their food, as some of the crop pests do, but suck juices from the tender growing plants. For this reason it is not possible to poison these pests with the ordinary solution, as there would be no way of getting the solution into the stomach. The way to kill plant lice is to spray with a contact solution such as kerosene emulsion, tobacco extracts, etc.

Kerosene emulsion is made up in stock solution according to the following formula:

Kerosene, 2 gallons; fish-oil or laundry soap, 1½ pounds; water, 1 gallon.

The name "fish-oil soap" is now used in place of "whale-oil soap," since most of the soap on the market is made of fish oil.

First the soap should be dissolved in a gallon of boiling water, and after the vessel is removed from the fire the coal oil should be added. Then the mixture should be agitated thoroughly for four or five minutes by pumping the liquid back nto itself until it becomes a creamy mass and the oil does not separate. The quantities of the ingredients may be increased when a larger quantity of spray is needed. This stock solution is used against aphids at the rate of one gallon to seven or eight of water.

For the worms, slake some quicklime in water and the lime to precipitate to the bottom then pour off the clear water on top and use in giving the plants. One or two doses, or more, at frequent intervals of a few days is necessary for a cure.

USE FOR SCALLION ONIONS

The thick-necked, or scallion onions, which are sometimes produced in large quantities, are not considered valuable by commercial growers, who usually leave them on the field to be plowed under. George Hough of Jefferson county, Pa., had an unusually large percentage of scallions, and tried a new method to use them.

Late in the fall, but before they were injured by freezing, they were pulled and set in deep trenches, much as celery is trenched, and left over winter. In the spring, when the stems started to grow, they were pulled for use as bunch onions, and were found to be very sweet and tender. They sold quickly at 5 cents a bunch, and Mr. Hough said he could have disposed of a carload if he only had them.

Massey-Harris

A Perfect Seed Bed

MASSEY-HARRIS CULTIVATORS and other Tillage Implements will put your land in the best possible shape for seeding and with a minimum expenditure of time and labor.

Much of the success of your crop depends on the condition of the land at seeding time, therefore it is well worth your while to see that the work of preparing the soil is done in the most thorough manner.

Be your farm large or small, we can supply you with the implements just suited to the requirements, from the smallest One-Horse Machines, to the large Tractor-drawn Implements and the Tractor to furnish the power.

Massey-Harris Co., Limited
Head Office—Toronto, Ont.
Branches at
Montreal, Moncton, Winnipeg, Regina, Saskatoon, Swift Current, Yorkton, Calgary, Edmonton.
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Agencies Everywhere

EWING'S SEEDS

will grow this year, just as they have grown for the past 45 years.

Ewing's Seeds bring success to the amateur gardener, and excellent profits to those who make their livings from their crops.

Write for our illustrated Catalogue — and if your dealer hasn't Ewing's Seeds, order from us direct.

THE WILLIAM EWING CO. Limited
Seed Merchants
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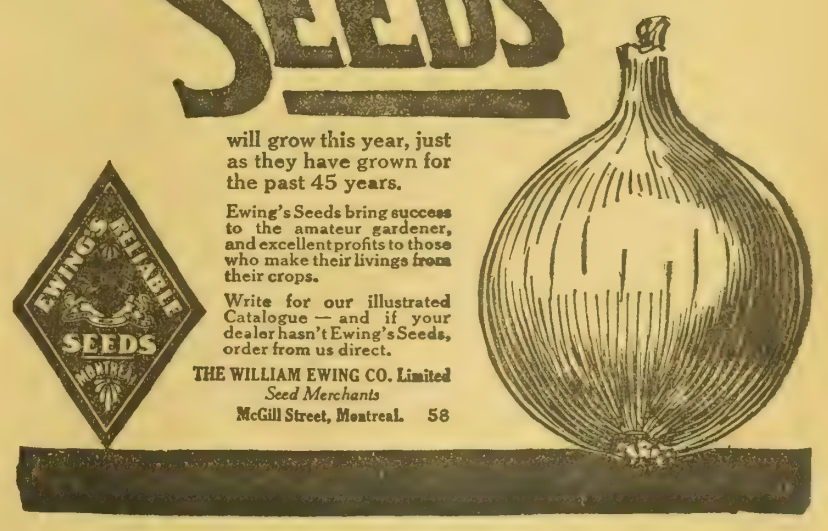

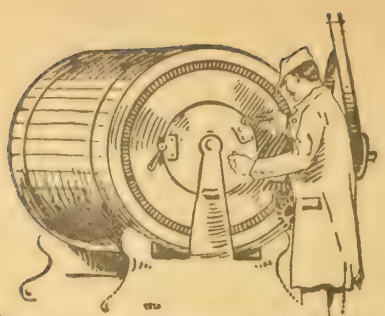
This is most important—Use
Windsor Dairy Salt
Made in Canada
THE CANADIAN SALT CO, LIMITED
253

DAIRYING.

HARVESTING ICE PAYS DIVIDENDS

Five dolars profit per cow annually, by providing ice for thorough cream cooling, can be realized by farmers in the natural ice section of the country. There usually is a period of leisure in the winter time when any farmer can arrange to take advantage of this paying investment. It is estimated that the provision of 1,000 pounds of ice per cow is sufficient to cool the cream during the year besides furnishing ice for other incidental purposes about the home.

A fifteen cow dairy would require about eight tons ice costing about one dollar per ton to harvest. The proper use of this ice in producing higher quality cream, for which the creamery will pay a premium, will add practically $85 to the annual income from fifteen average cows, or $5 net for each cow.

Ice HelpsQuality

The immediate cooling of cream to 50° F. or less will keep it sweet usually a day longer than cream not sufficiently cooled. If cold spring water be abundant very little ice will be required. Usually in the hotter part of the season the supply of spring water may become so diminished that its temperature rises to such a point that proper cooling can not be acccomplished without the aid of ice.

Quality is the watchword of the progressive creamery. So keenly do the creameries appreciate quality of their raw product that they are willing to pay from three to five cents per pound more for the butterfat in clean sweet cream than they will offer for sour cream fat. They will pay this difference because they are able to get more on the market for the product made from well cared for cream.

Good quality sweet cream makes a high scoring and fancy piece of butter. Butter is now sold according to its score. The higher the score the better is the price. The more the creamery can get for its butter the more it is able to return to the producer for his butterfat. It follows that if the creamery is to pay good prices, it is necessary for the patrons of that creamery to deliver the highest quality cream.

Ice Means Fewer Deliveries

Many farmers who do not have cold springs or ice on their farms are obliged to deliver their cream daily in warm weather in order to have their cream sweet and thus command the premium price. By proper cooling in clean, scalded utensils to at least 50° F. this same producer could keep his cream sweet long enough that only three, instead of six weekly deliveries would turn the trick. A little ice for thirough cooling in this way saves several hours of valuable time needlessly spent taking the cream to the creamery when the time can be more profitably spent about the farm in the busy growing and harvesting seasons.

High Prices Demand Quality

As prices advance the trade becomes more particular about the qpality of the goods. It therefore is the producer's problem to do his bit in maintaining high prices by supplying only the very best raw product which is the prime essential in the manufacture if a fancy article for which there is ever a good demand.

By observing absolute cleanliness about the dairy equipment and personne, by keeping profitable cows, and especiall by thoroughly cooling each batch of cream, is the producer really doing his duty in making possible the supply of the best dairy goods to an appreciateive demand.

A little ice house, some sawdust or hay, a few loads of nature's ice, and the progressive dairyman has made an investment that gives his community a reputation and his pocket book a paid tax receipt.—A. D. Lynch in Hoard's Dairyman.

MANURIAL VALUES OF DAIRY FEEDS

When feeding dairy cattle, and especially if purchasing high priced concentrates, it is well to consider the fertilizing value as well as the feeding value of feeds. Just as the value of a commercial fertilizer depends on the amount of available nitrogen, phosphoric acid, an dpotash it contains, so, to a large extent, does the value of manure depend upon the amounts of nitrogen, phosphoric acid, and potassium contained in the feed consumed by the animals. Those feeds which contain relatively large amounts of the three important plant foods make good manures and those which contain small amounts make poor manures.

The following tabulation shows the equivalents of nitrate of soda, 16 per cent .acid phosphate, and muriate of potash contained in some of the common dry feeds. The amounts of nitrogen, phosphoric acid, and potash contained in these feeds were taken from Henry & Morrison's "Feeds and Feeding," appendix, Table III. The nitrogen was then calculated as nitrate of soda, the phosphate, and the potassium as muriate of potash because these are the more common forms in which these constituents are found in commercial fertilizers.

One ton of cottonseed meal contains alent of 196 lbs. of nitrate of soda, 92 lbs. of 16 per cent. acid phosphate, and 12 lbs. of muriate of potash.

One ton of oats contains the equivalent of 240 pounds of nitrate of soda, 108 lbs. of 16 per cent. acid phosphate, and 18 lbs. of muriiate of potash.

One ton of bran contains the equivalent of 310 lbs. of nitrate of soda, 394 lbs. of 16 per cent. acid phosphate, and 52 lbs. of muriate of pitash.

One ton of oil meal contains the equivalent of 716 lbs. of nitrate of soda, 236 lbs. of 16 per cent, acid phosphate, and 40 lbs. of muriate of potash.

One to nof cottonseed meal contains the equivalent of 774 lbs. of nitrate of soda, 354 lbs. of 16 per cent. acid phosphate, and 56 lbs. of muriate of potash.

CARBONOL

A Blessing in the Home

IF there is one thing needed around the home or farm, it is Carbonol. Good in a hundred different ways. Helps house cleaning. A few drops in a pail of water makes a bucket of antiseptic, grease-killing liquid. In solution, it is wonderful for cuts on yourself or your live stock. Drives away flies, disinfects the sick room, makes barns, stables and henneries sanitary. You should not be without it. Get some now. In bottles.

There is a dealer in your neighborhood who sells these and other Barrett products. If you don't know him write us direct for prices and particulars.

THE BARRETT CO., Limited
(formerly the Carritte-Paterson Mfg. Co. Limited)
St. John, N.B. Halifax, N.S. Sydney, N.S. 13

The Greatest Hour of the Dairy Farmer

NOW that the war is over, the farmer's responsibility and opportunity are greater than ever—for the North American farmer and dairyman must literally feed the world. It means greater production and getting the *most* out of that production. Waste is as unpatriotic now as it was during the war.

But there is many a farmer who would not think of planting a hundred rows of corn and only harvesting 95 rows, who is now using a fixed feed separator and wasting a good part of his butterfat through turning under speed. Even tho the proper separating speed is marked on the handle, tests show that 95 per cent of *all* separators are turned below speed. If you turn a Sharples Suction-feed Separator below speed, you skim clean just the same—due to the patented suction feed. No other separator has this principle.

SHARPLES
SUCTION-FEED
CREAM SEPARATOR

"Skims Clean at Any Speed"

Sharples is the pioneer North American Separator—invented, perfected and preferred in North America. It is the product of the greatest factory of its kind in North America. Write for the interesting, profitable Sharples story and Sharples Book of Old Songs. It's free. Address nearest office, Dept. 79

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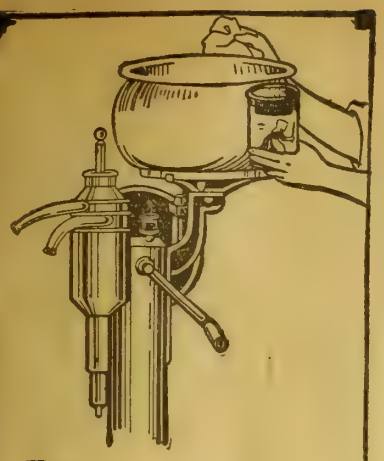
Distributors through all their Branches.



For
Dairy Utensils
use
Old
Dutch
Cleanser

It cleans quickly and thoroughly. It is better and more economical than soap or any other cleansing material. Use Old Dutch for cleaning everything throughout the house—it lightens labor.

One ton of clover hay contains the equivalent of 288 lbs. of nitrate of soda, 52 lbs. of 16 per cent acid phosphate, 52 lbs. of muriate of potash.

One ton ol alfalfa hay contains the equivalen tof .288 lbs. of nitrate of soda, 72 lbs. of 16 per cent. acid phosphate, 70 lbs. of muriate of potash.

Figuring the Manurial Value of Feeds

Calculating the manurial value of these feeds at the present high prices of fertlizers (nitrate of soda 5 cents a pound ,acid phosphate 1.2 cents a pound, and muriate of potash 25 cents a pound) corn would have a manurial value of $13.90 per ton; oat, $17.80 per ton; bran, $33.23 per ton; oil meal, $48.63 per ton; cottonseed meal, $56.95 per ton; clover hay, $26.02 per ton; and alfalfa hay, $32.76 per ton. Although one would not be justified in buying nitrogen and potash in commercial fertilizers at the present prices, the above figures show the comparative value of these feeds as fertilizers, and should be useful in determining the relative values of the different feeds. As a rule, however, it is not necessary to add nitrogen to the soil, if legumes are grown in rotation with other crops.

Manure Should Be Carefully Saved

One must remember that not all the fertilizing constituents in a feed are recovered in the manure. Averaging the results obtained at the Ohio Experiment Station and those reported in Henry & Morrison's "Feeds and Feeding," we find that approximately 75 per cent. of the nitrogen, 80 per cent. of the phosphoric acid, 80 per cent. of the potash in the feed consumed by a dairy cow are recovered in the manure. n aIddition to the constituents which are lost in the process of digestion, much may be lost fterward. Much of the waste manurial value through the loss of urine, by leaching and by fermentation, may be prevented by hauling the manure directly from th estables and spreading it on the fields. When this is not practicable the manure should be kept under cover and compacted by allowing the animals to run over it.—R. I. Grady, in, Ohio Experiment Station Monthly Bulletin.

THE S. O. S. OF DAIRYING

Silage and Soiling

Saves feed.
Indispensable. .. .. ..
Labor saving.
Always in season.
Good for all stock.
Enhances milk production.

Saves land.
Obviates unproductiveness.
Increases milk production.
Lowers cost of milk production.
Improves the flavor of product.
Not dependent on unlimited capital.
Gives variety to the ration.

Silage is essential, soiling advisable for dairying.

A. C. Mac CANDLISH,
Iowa College of Agriculture.

ABORTION

Please tell me how to rid my herd of contagious abortion.—G. H. M.

There is no specific remedy for contagious abortion disease, but it may disappear in time if you have each affected cow properly disinfected by a competent vetreinarian and then disinfect the vagina of each cow and heifer every other day for two or three weeks before breeding. Also have the stable cleansed, disinfected, and whitewashed under supervision of the veterinarian who also should supervise the disinfection of the cows and bull. He nod doubt has a favorite disinfecting solution, but it may be suggested that normal salt solution or a similar solution of hypochlorite of soda is useful for vaginal and uterine cleansing and a solution of permanganate of potash or Lobell's solution of iodine.

COW WITH STRINGY MILK

We have a good cow which gives apparently good milk, but when we separate this milk, there is left in the separator a little slimy sticky substance. Otherwise the cow appears in good health, is out on grass and getting good clean well water.—W. H. W.

Ans.—Your inquiry re cow giving milk, but after running same through separator you can detect a slimy, sticky substance, which may be caused by the cow being nearly due to calve, or, if not, she may be suffering with chronic mammitis, and would advise giving her the following: Half ounce formalin in 2 ounces raw linseed oil; to be followed by dram doses of formalin in same quantity of oil for 2 or 3 days.

OBSTRUCTED TEAT

I have a very valuable heifer which has developed a bunch in the end of one teat. It started with a small sore which seemed to spread and got to be about as big as a five-cent piece. It kept getting harder to milk; now I use a milking tube. The sore has healed up, but the bunch is there. It does not seem to be hard! the stoppage is about three-eihgts of an inch from tip. The sore was not right at end, but a little to one side. I have used iodine on it, but it still choked up. Will you tell me what to do.—F. W. T.

The milking tube has already introduced infective matter and its continued use will be likely to cause ruinous garget. Have the growth reamed out by a skilled surgeon, or he may prefer to slit down through it in four different directions by means of a teat bistoury. Treatment other than thi swill not be likely to succeed. Meanwhile immerse the teat for a minute or two twice daily in a hot saturate dsolution of boric acid.

Mare has habit of cribbing when standing in the stall. Is there any cure for it?

Reply.—Cribbing or wind sucking is a vice, not a disease, and cannot be cured by medicine. Applying a mixture of red pepper and soft soap, or better still, aloes, around the stall, will sometimes stop the hobit. It is largely hereditary and anmials with this tendency should not be bred.

Sooner or later you will buy a

DE LAVAL
CREAM SEPARATOR

If you have any use for a cream separator, it's only a question of time before you buy a De Laval.

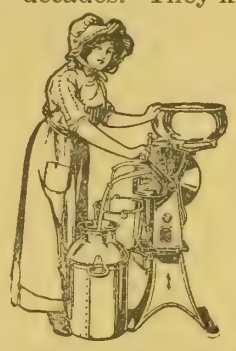
Many buy a De Laval to start with and so avoid a lot of "separator grief."

Others buy one, two or three different machines before they finally learn by experience that "the best is the cheapest" and get a De Laval.

That's why, in the older dairy sections where separators have been in general use for many years, you'll find most of the machines are De Lavals.

"Claims" don't mean much to such farmers. They've had lots of separator experience. "Performance" means a thousand times more to them than claims.

They've watched the De Laval "perform" for several decades. They know that it is reliable and they stick to it, just as does the creameryman who is also "separator wise."



Why not be guided by the experience of these men and buy your De Laval "Sooner" instead of "Later?"

Order your DeLaval now and let it begin saving cream for you right away. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below

THE DE LAVAL COMPANY, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butterworkers. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER

OVER 2,325,000 DE LAVALS IN DAILY USE

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Shingle Machines, Lath Machines,
General Lumbering Equipment,
Contractors' Supplies, Furnaces, Stoves, Implements

The Smith Foundry Company, Limited,

FREDERICTON, New Brunswick

LIVE STOCK.

"LADY JANE" DEAD

A NOTED AYRSHIRE COW.

Canada's most noted Ayrshire cow "Lady Jane"—30886, died from pneumonia a few days after freshening on November 28th, last, as a result both her owners, Messrs A. S. Turner & Son, Ryckman's Corner, Ont., and the Ayrshire breed have suffered a great lass. She had just freshened after her fourth R. O. P. test with 19,135 lbs. milk and 704 lbs. butter fat, made in 353 days. By this test she wins, for the second time, the Silver Cup given by the Ayrshire Association for the highest score in 1918, making 21285 points, being 4787 points, (of 29%) over her nearest competitor.

She also holds the highest Canadian Official Record with 19,405 lbs. milk and 786 lbs. fat.

Lady Jane was a wonderful cow and possessed the power of assimilating food to manufacture milk to a marvellous degree.

In a four year's cumulative test she gave 64,889 lbs. milk and 2506 lbs. butter fat. Ter total days in milk during this cumulative test were 1218, therefore she gave an average of 53 lbs. of milk and a little over 2 lbs. of butter fat per day, a cumulative record seldom equalled. While Lady Jane was making this cumulative record she was taken to four Dairy Tests and made the highest Ayrshire score at each of them.

At the Guelph Dairy Test in 1917 she produced 250 lbs. of milk and 8.64 lbs. butter fat in 72 hours, making a score of 282.7 points, winning over all registered cows. This is the highest score ever made by an Ayrshire in a public test.

Lady Jane contained the blood of several noted sires,—Kitchener, White Prince (Imp), Comrade of Garlaff, (Imp), a son of the great "Blood-for-ever of Wynholm" in Scotland. On the dam's side she traces to the celebrated Gurta family and to the noted bull "Hamilton Chief", which sire also influenced the Jean Armour family. Thus good blood tells in production as well as in type, a combination which made Lady Jane famous.

A PROGRESSIVE MOVEMENT

Editor the Maritime Farmer:

It is the purpose of the Department of Agriculture at Moncton to conduct a series of meetings (a copy of the programme of which I am enclosing) throughout the months of February, March and April, which will be of general interest to the farmers in the surrounding districts.

The addresses will be given on Saturday afternoon on the second floor of the Farmers' Co-Operative Creamery Co. Building at 2 O'CLOCK SHARP and will last one hour, after which a general discussion will take place on the subject taken up for that particular day. It is particularly requested that an endeavor be made to be in the lecture room on time, as much is missed through coming late—however, better late than not at all.

I can assure every one who attends with the desire to learn that he will not go away from a single meeting disappointed. Every endeavor will be made to get the best possible men available to deal with the various subjects to be discussed and if the farmers will co-operate with the Department and do their part by attending, encouraging others to come and manifesting interest in the addresses given, they can rest assured the Department will see to it that the best men available in the Province and elsewhere are engaged.

If the general attendance and interest displayed this year are good, this work will not only be continued another year, commencing earlier in the season, but in all probability a short course can be arranged for in Moncton next year.

It will be noticed in the programme that the name of the subject is not indicated in three places. The subjects for those days will be selected at the meeting held the previous week.

Every farmer and any interested member of his family are cordially invited to be present at as many meetings as it is possible to attend, and feeling as the Department does that no one will receive a greater benefit than the interested young man or boy on the farm a special invitation is extended to him to attend. A special invitation is extended as well, to the ladies to be in attendance to hear the address on "Poulry."

J. H. KING,
Agricultural Rep. for West'd.
Albert and Kent.

Programme of Meetings to be Conducted by the Department of Agriculture in the Farmers' Co-Operative Creamery Building at Moncton throughout the months of February, March and April.

Commercial Fertilizers, February 8.

What a fertilizer is.

Fertilizers necessary for different soils.

Fertilizers necessary for different crops.

How to purchase for best results.

Farmyard Manure and Lime, Feb. 15.

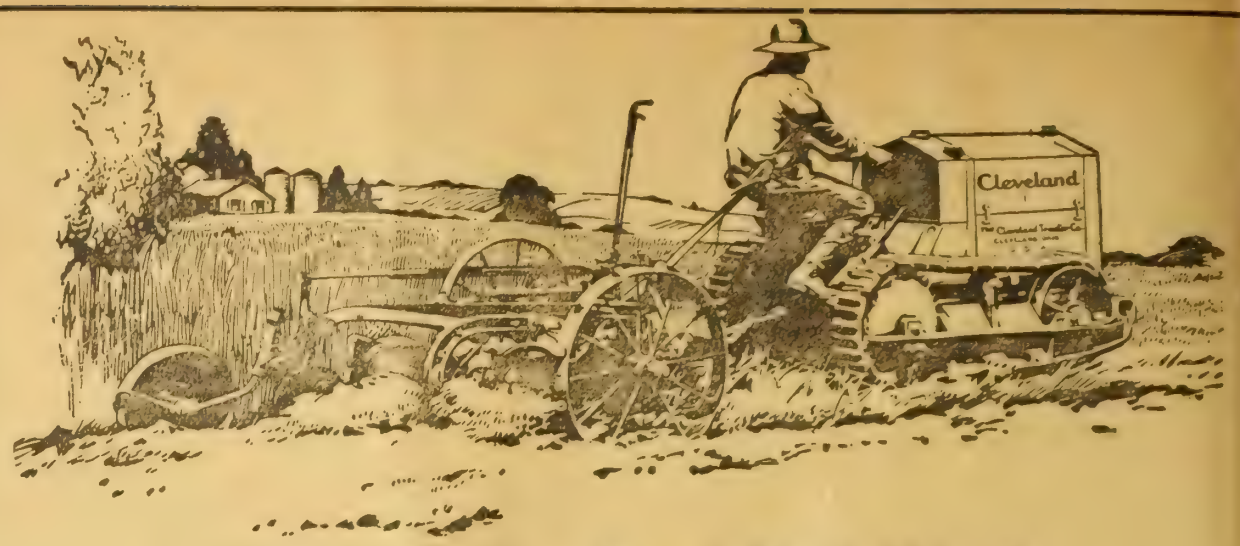
What farmyard manure consists of that is of value.

How to handle barnyard manure for best results.

The various forms of commercial lime.

Which to use for agricultural purposes and why.

What soils need lime. How to apply, etc.



Does *all* the Seed-Bed Work

In the important work of preparing the seed-bed, the Cleveland Tractor *does more than merely plow.*

Any tractor will plow.

But the Cleveland because of its track-laying construction travels *on top* of the soft plowed ground with harrow, seeder or other implements.

It does its work rapidly and economically *under conditions most difficult for the ordinary machine.*

The Cleveland, with its tremendous traction surface, *rides on top* of the ground like battle tanks--*without wallowing, sinking in or packing down the soil.*

The Cleveland uses its power *to pull the implement*—not to pull *itself* out of the ground. That is one reason why it operates on so little fuel.

The Cleveland will pull a roller over your young wheat *without injuring the crop.*

It does the hauling, the manure spreading, the ensilage cutting, the stationary engine work and the hundred and one *other* things that every farmer expects a tractor to do.

And it does the work *better,* as well as faster than before.

Orders for spring delivery should be placed *now.* Write for booklet and name of nearest Cleveland dealer

The Cleveland Tractor Co.

19129 Euclid Ave. Cleveland, Ohio

The largest producer of track-laying tractors in the world

Cleveland Tractor

CANADIAN OFFICE WINDSOR, ONT.

"The essential characteristic of Shorthorns is beef, but a beef breed that can show a herd with more than 40 cows with milk records ranging from 10,000 to 13,232 lbs. is worthy of careful consideration."—B. O. Cowan.

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Write for Literature for free distribution

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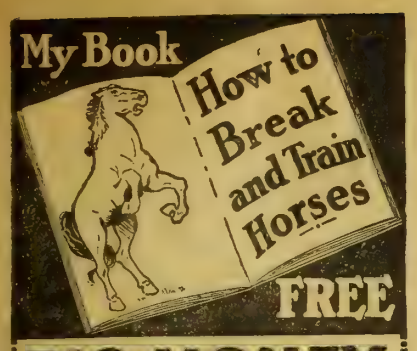
SHORTHORN CATTLE



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MY free book will amaze you. See the big money that is being made by those I taught my famous system of horse breaking and training! Wild colts and vicious, unmanageable horses can be picked up for a song. By my methods you can quickly transform them into gentle, willing workers and re-sell them at a big profit. You can also earn fat fees breaking colts and training horses for others.

Write! My book is free, postage prepaid. No obligation. A postcard brings it. *Write today.*

Prof. JESSE BEERY, 702 Main St., Pleasant Hill, Ohio

Feeding the Dairy Cow, February 22.

How to feed for best results.

Discussion of the following feeds for dairy cattle: clover hay, timothy hay, silage, roots, oats, wheat bran, middlings, shorts, oil cake, etc.

Some good rations for Dairy Cows

March 1.

Hog Raising, March 8.

Hog raising as a side line.

Bacon versus Fat hog type.

Which should New Brunswick farmers produce.

How to breed and feed hogs for best results.

Poultry, March 15.

Breeding, Feeding and general management of hens for the production of eggs and meat.

Co-Operative Wool Marketing, Mar. 22

General care of sheep for best production of wool.

How to care for and handle wool at time of shearing and afterward.

The advantages of selling wool co-operatively.

March 29.

Milk, April 5.

Composition of Milk.

Care of Milk and Cream on the farm.

The value of skimmilk.

The necessity of cleanliness.

Demonstration in Milk Testing.

Grain Production, April 12.

The best kinds of grain and the best varieties to sow.

When to sow and why.

Diseases to be contended with in grain production.

Demonstration in treating seed grain for smut.

Farm Drainage, April 19

What soils to drain.

Approximate cost of drainage.

The different between soils drained and the same soils undrained.

Methods of proceedure in underdrainage.

April 26.

Please Note: Meetings will begin at **2 o'clock sharp** and will be of one hour duration after which there will be a general discussion.

CUT OUT AND KEEP FOR FUTURE REFERENCE.

Stewart Sheep Shearing Machines
Hand and Power

Stewart Horse Clipping Machines

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Write for Prices.

Wholesale Retail

J. CLARK & SON, LTD.
SUSSEX, N. B.

WE SOLICIT INQUIRIES FOR

BANNER SEED OATS

We can also supply

IMPROVED and REGISTERED BANNER,

OLD ISLAND BLACK and

BLACK NORWAY SEED OATS,

TWO AND SIX ROWED

BARLEY, BUCKWHEAT and

ISLAND SEED WHEAT.

Samples and prices submitted upon request. Write or wire.

ESTATE JAMES KENNEDY,
KENSINGTON, P. E. I.

EUROPE WANTS MEAT

Canada now has the opportunity to make her export position permanent

The war stimulated the export trade in Canadian live stock products to a degree deemed well nigh impossible five years ago. Exports of beef increased 6795%. of bacon and pork products 571%. Total exports of live stock products in the fiscal year ending March 31st, 1918, were valued at $172,743,081 as compared to $53,349,118 in 1914.

Canada has the opportunity of holding this trade and increasing it, for our meat products won a splendid reputation in Europe during the war, and Canada is in the position of the favored nation.

The price of feed has been high, and the cost of producing live stock has been correspondingly high. But the market price of finished animals has also been high. The price may decline gradually, but the price of feed will decline also, and the percentage of profit to the farmer should thus remain about the same. Indeed if the cost of feed declines first, the profit to the farmer will be increased.

J. E. Brethour, of Burford, Ont., who won the first prize for export bacon hogs at the Winter Fair at Guelph, says that with the relative prices of feed and bacon then pertaining there was a good profit.

"With standard feed at $57 a ton and hogs at $16, live weight, I make a profit of over 20%," said Mr. Brethour. "It is profit that counts not the selling price, and profit depends upon the relations of the price of feed to the market price of the finished animal."

Mr. Herbert Hoover, Chief of the United States Food Administration, who is at present in Europe investigating conditions at first hand, cables as follows:

"Every pound of pork products we can export before next July Europe will need, and as soon as the initial chaos of the sudden economic change from war to armistice can be overcome there will be over-demands."

Authorities say that this demand in the case of beef, even more than that of pork, will be abnormal for many years owing to the fact that Europe is estimated to be short of over 115,000,000 head of live stock, of which 28,000,000 represent cattle irreplacable in less than five years.

25% MORE MILK with SILAGE

RIGHT NOW if you had a silo you would not only be getting 25% more milk, but you would be spending a great deal less for feed. With cream and milk at present prices, you must appreciate your need of a good silo more than ever, because there never was a time when good cows, properly fed, would return to their owner as great a profit as they do today.

RIGHT NOW is the time when an Ideal Green Feed Silo, filled with rich, juicy, milk-producing silage, would save your worrying about feeding so much high-priced grain and would be putting more milk in the pail every day.

RIGHT NOW is the time to prepare for bigger profits from your cows next winter. Our silo catalogue, which we will gladly send on request, contains a great deal of valuable information about silage and explains why the Ideal Green Feed Silo is the best to buy.

Write today for this catalogue.

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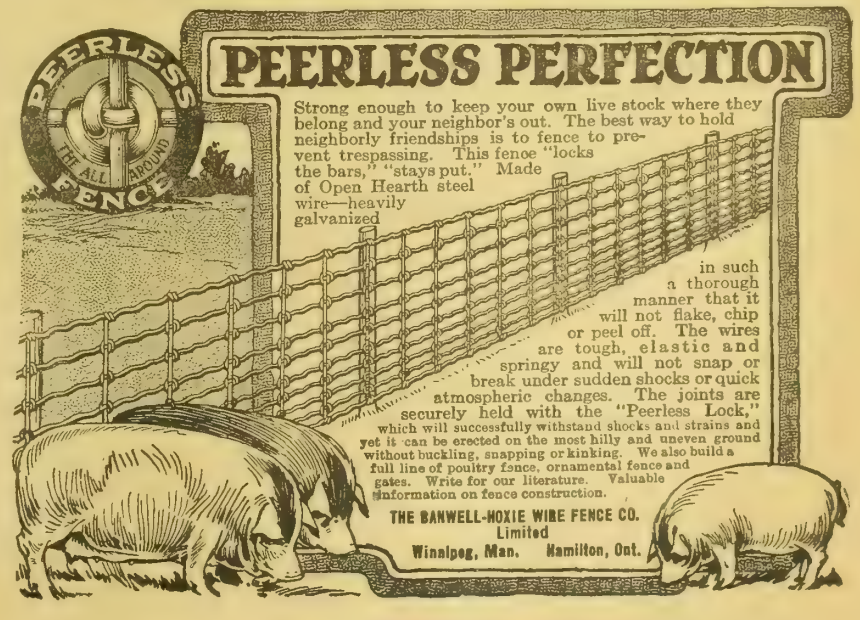
A reader gives a practical method of removing tusks from a boar, as follows:—"He prefers tying up by the upper jaw and putting a slip knot back of the upper tusks. The hog will pull back and keep the rope tight; one man stands astride the hog and puts a hardwood stick about one-fourth inches thick in the boar's mouth; takes hold of both ends, pulls it back as far as he can and holds it there. Another man should then put some straw on the ground, get down on his knees, and, with a three-corner-ed file, file a good notch in each corner of the tusk; then put the point of an iron wedge in one of the notches and tap it with a hammer, when the tusk will break squarely off. He would then, with a flat file, smooth the stump down to the jaw. He thinks if this procedure is folowed the hog will give thanks and say: 'You have done a good job and it did not hurt very much.' "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THE HORSE

MANY OF THE VICES SEEN IN HORSES ARE MAN-MADE WHILE TRAINING THE COLT

A horse without spirit, courage, and fearlessnss is practically no horse at all. These attributes in a hors are indispensable, and it is to promote those that the colt must be handled at an early age and handled in a manner that will best promote his cultivation in the growing organism. The work of selecting, breeding and feeding genrally covers the duties that lie to the hand of the suicessful man with the cattle, but not so that of the horse breder and caretaker. The horseman has a wider field to overtake.

The managemnt of horses require the caretaker to be a student of their natural temperaments and high spritedness. These characteristics in the horse have to be fed, nurtured and trained for future usefulness, and are as necessary to the value of the horse as his other qualities so often heralded as making up the great good horse, viz: that of substance, conformation, and quality. Only when these are found in unison with a fearless and courageous spirit will they amount to the full fruition of horse breeding and horse rearing management.

The Colts First Lesson

Now watch the little colt after he is a few days old. His natural abilities for speed are evident, it is given him by nature so that he can outdistance his dam in the general stampede from natural enemies in the wild state, and thus keep the mother between him and pursuing danger. In a box stall or field though the mother is not afraid of the human intruder, the little fellow will keep the mother between him and you. His first lesson in condence must be given right here. He must be coaxed to let you handle him quietly, but fooling with him even at this tender age will often lay the foundation of a vicious habit. Talk kindly, pat him or rub his nose or anything that will indicate to him kindness and sympathy, but do not teach him to be tricky or cheat him. Whatever you do, do it, and then leave him alone. He will gradually take to your visits and look for you return.

The first lesons given to the colt to encourage his confidence can be done without wasting valuable time from any other work. On most farms the dam wil lhave duties to perform and while giivng her the attention necessary to the fulfillment of her work the handling of the colt also becomes necessary and much depends on this early attention. Where the dam is not worked while nursing her colts the colt in this case should be left severely alone i nthe early stages. It is the colt whose mother has to take her place in the team that the teamster has to watch how he behaves towards it, for the majority of vices in horses are generated at this early stage. and with the colt whose mother had to work, being spoiled in the early management. There are only two ways, either leave them severely alone till weaning or handle them with sense while nursing, and it is the colt with the working mother that too often gets the fool handling.

Haltering at an Early Age

Longe before the colt is weaned he should be haltered. The haltering should be done without roughness; but when you get a hold keep a hold. Do it beside his mother; have a leather halter the size, one that is well oiled and can be adjusted to the size when once it is fixed on his head. There are two very tender spots in all horses, old and young, and in the little sensitive cout they are doubly tender. They are the top of the head and fetlock joint. Just press on the top of the skull between the ears of any horse, or touch the fetlock joint with the toe of your boot, and you will soon find this verified.

Besides being otherwise afraid, these are the two spots in his anatomy that the young colt knows as his tender ones, and he readily defends them. If he is hurt in these the haltering becomes an ordeal that he never will forget. Often in the scramble the feet of the man strikes the fetlock of the colt while the hand has caught or is near the top of the head, and haltering bcomes impossible. It is advisable to do the operation alone, but if you lack experience get one to help you and while you catch him under the neck with one arm and around the buttock with another get the help, who has slung the halter on his left arm, to catch the nose and draw the halter from the arm over his head and fix it. When let free do not try to hold him till he becomes accustomed to your handling. Leave his mother in the box stall while you take him out; treat him well and give him some toothsome tit bit while you are alone with him. Follow his inclinations at the start, run with him when he wants to and stand with him when he so inclines. Do not try to teach him anything until he begins to show signs of docility and attention.

At this stage it is wise to leave the halter on his head, if it is a close fit and does not hurt or is not loose so that it will catch in anything. You will require to examine it very often for the head of the colt grows very rapidly at this stage, and will overgrow the size of the halter with serious results.

Instilling Vices in the Colt

Do not make the mistake of trying to teach the colt too much at one time; he should understand each lesson thoroughly before a second is attempted. Be gentle and firm at all times and go through with whatever is attempted.

When properly handled the colt will take a delight in his lessons and readily to the exercise as a break in the many lonely hours he has to spend alone in the box stall away from his mother. If you have proven yourself a favorite with the colt he will come to you when in the field with his mother, and at any time you do not feel inclined, or have not the time, do not "shoo" him away or seek to frighten him by throwing something at him. That, to the colt is another lesson, and he may never again seek your company He also has become aware of a new way of escape, and when next you want to get him he will use the same means of escape and run away from you. Many a horse has been spoiled for life by this mistake.

Never use a rope at the halter in which there is danger that it will break, or the idea of getting away will be further intensified in the colt.

It is wise also never to try the strength of a rope. Abetter policy is to follow the colt quite a bit in the early stages. It is not necessary to drag a colt by the halter in order to suggest to him that his business is to follow. You may not get him to follow by this means, and then another lesson has been taught him, viz., the power of resistance. There is also

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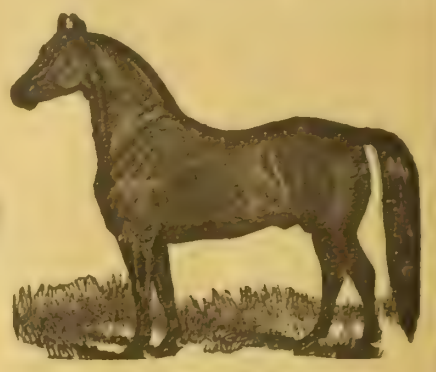

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danger of his rearing and falling, affecting the back; string-halts, stifles, weak back are the results, acompanied with sullen dispositions. The colt will also discover where you are weak and he is strong; he will know how to shoulder the rope, adjust his nose or mouth to the halter or bit—and can pull you all over the place. There should really be no breaking of a colt; the whole process is a gradual education largely balanced by a sympathetic feeling for the young animal. No amount of breaking will cure a horse that has been spoiled, either by neglect or by puerile attempts at training, and they are the horses that have to be closely watched while in harness. Many of the vices that deteriorate so much to the value of the horse, are man-made, and it is during the early training that these vices are generated.

Pat. in U.S. Dec. 1, 1914.
Pat. in Can. Apr. 9, 1915.
(1)
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STALLION OUT OF SORTS

Editor.—I have a stallion, weight about 2,000 lbs., that had influenza last summer, and seems to stock up in the hind legs ever since. Sems constipated unless fed on soft feed all the time. Am feeding 4 lb. oat chop, 2 lbs. bran, handful oil meal with a little Glouber salts twice a day, with all the hay that he will eat, yet it does not physic him, although in addition he gets reasonable exercise each day.

1. Is saltpetre injurious to a stallion in breeding season?

2. Should this horse have a tonic or blood purifier? He is thin, but seems to feel good.—Stallion owner.

Reply.—The after effect of influenza, especially on a stallion, seems to be always of long duration. Would advise to feed the horse warm bran mashes for 24 hours (no hay and very little water), and give as a drench, on an empty stomach, 1½ pint sof raw linseed oil with ½ ounce of spirits of turpentine, (not oil of turpentine). Repeat th edose about 12 hours after first. Then, after second dose, start giving him a little hay, and increase every meal, until he gets his regular portion of hay. From the time you give first dose of oil, he should have luke warm water to drink. After a few days would suggest to feed boiled oats with some bran, starting light and increase every day. In portion of boiled oats, would give a teaspoon of liquor arsenicales twice a day. Two hours of slow, out-door exercise would be O. K.

2. Saltpetre is not advisable to give a stalloin in breeding season.

3. Yes, a tonic, prepared according to thecondition of your horse would be fine.

LEUCORRHOEA

Will you kindly publish in your next issue a remedy for the followin?

Last summer a four-year-old mare foaled a week too soon; found her in the pasture with the foal sticking half out of her, dead. Since then she had a bad discharge, as though something was torn in her; was advised by a stallion owner to inject alum water into her, which I did, and which seemed to help her for a time, but now she is much worse again. Mare is also run down and in poor spirits, though not as poorly as one might imagine.—G. H. M.

Reply.—This is a case of leucorrhoea (whites), in most cases caused by retained afterbirth. Wash out the womb with a 2% solution of creolin, once a day for a week, then twice a week for a few weeks, and again give a tonic as follows: arsenic trionide, 1 dram; powdered nux vomica, 3 drams; powdered ferri sulph., 4 ounces; powdered gentain, 3 ounces. Give tablespoonful twice daily in feed.

NECROBACILLOSIS

Will you please advise me through your Veterinary Department what I should do with a mare that has a very bad foot rot? I have been washing and poulticing, using bluestone on same with little results. It broke out last fall.—Subscriber.

Reply.—If ycur mare is suffering with necrobacillosis, or foot rot, which is due to a filth germ called Bacillus Necrophorus, we would recommend cleansing parts thoroughly with an antiseptic solution of creolin, then remove all diseased tissues and causterize the wounds with an application of pure carbolic acid; repeat twice a week until the wounds are healthy. Do not poultice. If the infection extends to the inside of the hoof, would then suggest for you to call a veterinary.

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REMEDIES FOR WORMS IN HORSE

Could you let me know of some cure for worms in my horse? They are about one-sixth of an inch thick.—J. S.

Reply.—Mix together two parts of common salt and one part each of sulphur and dried sulphate of iron (copperas), and of this mix one tablespoonful in a dampened night and morning for a week, then stop for 10 days, and then give the powders for another week. The medicine kills the worms nad they are digested in the intestines so do not look for them in the feces. As pinworms inhabit the rectum and are not destroyed by internal remedies it would be well to give rectal injections on three successive evenings. Use two or three quarts soapy, warm water containing tobacco stems or leaves in boiling water, allowing to stanad covered for twelve hours and straining before use. A decoction of four ounces of quassia chips to the gallon of boiling water also is excellent for this purpose.

DOES THE HORSE LIE DOWN?

One occasionally sees the statement that horses seldom, if ever, lie down. That there are horses whose caretkers have never seen them resting in that way we do not question, because we have heard it from stablemen who have carefully observed them. But no one who knows anything about horses and who has seen them stretched out at full length in pastuses and in their stalls, and who has noticed unmistakable evidences on the horses themselves in the morning of having lain down, will credit the asertion. Many a horse is doubtless too sensible to lie down on a rough, filthy, unbedded floor, but give him a comfortable, well-bedded stall, and not only will he lie down but repay his owner with better service and more years of usfulness because of the more perfect rest thus obtained.

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POULTRY.

FEEDING FOR WINTER EGG PRODUCTION

High winter egg production is dependent to a large extent upon the methods of feeding the birds and the foods fed. It is usless to feed heavily on a grain ration if the other essentials of a suitable diet are not provided, and this is probably the most serious error our farmers and poultry raisers make in their winter feeding of their laying stock. There is, however, little danger of over-feeding if a variety of foods of the proper kind are given and the birds are compelled to take sufficietn exercise.

The short working day is in large part responsible for the usual low winter production because of the inability of the bird to eat a sufficient amount of feed to produce the maximum number of eggs of which she is otherwise capable. It therefore behooves the poultryman to overcome the difficulty as much as possible by feeding as early in the morning as light will permit, feeding liberally during the day and making sure the birds crop is full at roosting time. Many poultry experiment statons have demonstrated that poultry houses for several hours in the morning and again in the evennig may be lighted artificially and the birds make to pay the costs and give a good profit in addition. The increased egg production is not directly due to any magic effect of artificial light, but to increased food consumption made possible through its use. The idea is in general use among large poultry raisers in many places and even farmers and other small raisers are utilizing the discovery. An ordinary lantern will answer the purpose in a small pen.

Grains

Poultry can use to advantage a variety of grains. Wheat is probably the most useful and satisfactory all round grain food, but a mixture of wheat with at least one or two other grains is more satisfactory. For winter use cracked corn is excellent and buckwheat may be used when the birds become accustomed to its appearance and eat it readily. Oats ar one of the best of grain foods if they are of good quality. Oat hulls have about the same feeding value for poultry as wheat straw or sawdust.

Green Food

During the winter spring conditions in the poultry house should be duplicated as nearly as possible. Green food should always be provided. It tends to keep the birds digestive organs in good condition and to keep her sewage system open which in turn result in better health, more complete utilization of food material and increased production. Cabbages, beets, mangles, turnips, sprouted grains, etc. are satisfactory.

Animal Foods.

Animal foods replace the grasshoppers, earthworms, etc., the birds catch during the growing season. They are absolutely essential to profitable winter egg production. Buttermilk or skim milk is probably the best substitute for insect life. Dried beef scraps (obtainable from poultry supply or feed dealers) are perhaps the next most suitable and widely used. Green bones with adhering meat and muscle, beef heads, lungs, livers, etc. from butcher shops, may be used to advantage where they are obtainable. Practically all such foods are expensive, but this must under no condition prohibit their use. They supply in a concentrated form the necessary constituents of the albumen or white of the egg.

Mineral Foods

Birds should always have access to plenty of sharp gravel, ground rock, etc. In the gizzard this material, though in itself possessing no food value, assists in the digestion of grain and other hard portions of the birds ration. Birds running at large in summer always have considerable amounts of grit in their gizzards.

Lime in some form is as necessary as grain. A bird which produces two hundred eggs in a year must produce two and one half pounds of egg shell which is practically all lime. If a bird is fed on a prison diet of corn and water, and unfortunately some are, the amount of grain consumed to obtain the necessary lime for two hundred egg shells becomes a question of tons instead of pounds. Ground oyster shells, clam shells, dry egg shells, etc., will fill the bill.

Water

Water is indispensible. It has no food value but assists in making foods more readily assimilable. Experimental data shows the omission of water to reduce the egg production about 50 per cent.

Feeding Method

As early in the morning as possible the birds should have a feed of whole or cracked grain which must be fed in deep litter, preferably dry wheat straw. There is little danger of losing any of the grain unless it is the finer parts too small for the bird to pick up. Eight or ten inches of straw will answer the purpose. One quart of grain to twenty-five birds is an average feed.

The evening feed should be of whole grain and fed as late in the afternoon as possible. If fed in the litter the birds should be given about an hour to scratch for it before darkness hinders them. Many give the last feed in a trough to avoid possibility of any birds not obtaining as much as they desire. Feel their crops after they go to roost. They should be full.

In addition to the whole grain a mash should be fed as birds cannot digest enough whole grain to lay the most eggs possible. If a dry mash is used it may be put in a hopper against the wall and the birds allowed access to it at all times. The amount of mash a bird eats depends largely upon its palatability, and as a rule they do not overeat. If they do, and show signs of becoming too fat, prevent their access to the mash each day until their appetite is largely satisfied with the whole or cracked grain.

If a moist mash is fed it should be given late in the forenoon or about noon. Give only what the birds will eat readily in a few minutes.

Mashes vary greatly in composition. One containing two or three articles is usually as satisfactory as more complicated ones. Equal parts by weight of bran, wheat middlings and cornmeal will work very satisfactorily. If one of these is not available it may be substituted with ground buckwheat finely ground oats, or various other foods obtainable. Wet mashes should be mixed with milk if possible and should be just moist enough to hold together when squeezed in the hand. If milk is not available water should be used.

Milk should be before the birds all the time. Being about 90 per cent water it will largely if not entirely replace water as well as supply the animal food. If beef scrap is fed it should be available in a hopper at all times. If birds have not been accustomed to milk or beef scrap feed them sparingly for a few days. Oyster shell or some substitute, grit, and charcoal should be fed from a hopper.

Green food should be constantly before the birds or at least given daily. Cabbages, mangles, etc., may be stuck to a nail in the wall about eighteen inches from the floor. Frozen or decayed vegetables must never be used. They disarrange the birds digestive system, often with serious results.

Sudden changes of any consequence in a birds ration must be avoided. The birds system becomes adapted to a certain system of feeding and is not readily altered. Sudden changes frequently result in temporary reduced production.

A. C. McCULLOUGH,
N. B. Poultry Supt.

SELECTING BREEDERS

By R. R. Hannas
in Country Gentleman

Late fall or early winter finds the poultry keeper mating up his pens for the season's breeding. He has been, or should have been, selecting his

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birds all along, sizing up their good qualities and their bad, keeping the ones which showed good possibilities and discarding the ones which gave no promise whatever of being good breeding stock.

No matter whether the poultryman is selecting his breeders for show-room stock or for utility stock, the prime considerations are vigor and vitality. A bird may have a wonderful ancestry with wonderful records back of it, yet of what use is it to breed from this bird if t is not healthy and vigorous? What is wanted is a bird that will produce fertile eggs, which in turn will produce healthy, vigorous chicks; but these results will not be obtained from birds with low vitality.

Evidences of vigor and vitality in the male may be seen in a well-proportioned and well-set body, good carriage, bright eyes, bright and erect comb and well-shaped head. Good-sized legs with a wide distance between them are also evidences of high vitality and vigor. A scrawny-looking male, one that is narrow-breasted, has a crow-shaped head and a drooping tail will not produce many healthy chicks. The male birds is half the flock and should therefore receive a great deal of attention when the pens are being mated.

By experimentation it has been found that the egg-producing ability is transmitted to the progeny through the male bird. It is, therefore, advantageous when selecting the breeders to choose the male birds whose mothers were good producers. This does not mean that a high-producing flock may be obtained by mating poor hens to males whose mothers have been high producers. What should be done is to mate high-producing females to males whose mothers have been high producers and obtain as progeny females that will be good producers and males that will be useful as breeders to other flocks.

When no pedigree records are available the external characteristics mentioned above will have to be relied upon.

Choose Hens With Perfect Health Records

A very good plan to follow in selecting the breeding males, when the equipment and circumstances permit, is to set up a few exhibition coops and place the males in them. By having all his birds before him the poultryman can compare one with another. After selecting, say, twenty of the best—the number, of course, depending upon the number of breeders desired—he may put these in coops by themselves and select the best from this number; and so on, by the process of elimination, until the required number of male birds has been obtained for the pens.

Just as the male bird must have a healthy and vigorous appearance and must be purely masculine, so must the female be healthy and vigorous and present a purely feminine appearance. She must have a neat trim body, showing capacity for production—that is, wide in the pelvic region and between the pin bones, with a long keel bone and a wide pelvic arch. She must not be awkward nor rangy in appearance. Above all, she must be healthy—it does not pay to breed from a bird that has ever been sick, for the weakness is apt to be transmitted to the offspring, and unhealthy chicks will be the result. A hen with a bright eye and a bright flexible comb shows vitality and can be relied upon, if possessing the other points mentioned above, to be a good choice for the breeding pen.

In choosing the female breeders do not select pullets. The pullet year is the year of maximum production, in which the birds are given the feed that will produce the largest number of eggs. Obviously, the proper nourishment for the developing germ cannot be put into the egg while forcing feeds are being fed. This is one cause of the poor-looking chicks obtained from pullets.

There are several different systems of mating birds, one of whirh is known as the large-flock system of mating. In this system a certain number of males is placed with a large flock of females, the number of male birds depending upon the size of the flock.

There is also the small-flock mating, which consists of placing one male in a small pen of females. A disadvantage of this system is that often the male bird will practice selection, mating wih only certain birds and thereby causing eggs from other birds in the flock to be infertile.

Again, there is a system known as stud mating, in which the male bird is kept confined and the hens are brought to him one at a time. The traveling-male system is just the opposite of this, the hen being confined to a run by herself and the male bird carried from pen to pen.

Large-Flock System Requires Least Care

A system which is popular among some breeders is the system of alternating males: Two males are used for one small flock, one being in the pen one week and the other the next week, and so on. This eliminates to some extent the possibility of selection by the male bird.

Of all these systems the large flock, the small flock and the system of alternating males are the most commonly used. The large-flock system requires, perhaps, the least care of any and gives as good results as any. This is really the only system to use where buildings and yards are limited—provided, of course, that all the birds come up to the standard set by the poultryman. In other words, if a hundred breeders are to be kept, and they all give evidence of being good producers and are in good condition, there would be nothing gained by placing ten hens in a yard and making ten pens of them, when as good results could be obtained from having them all in one yard.

Generally one male bird is placed in the pen for every ten hens. There is more chance of obtaining fertile eggs from a large pen of this sort, as it is not likely that the same hens would be neglected by all the cockerels. This proportion of females to males is generally used for Leghorns. For Plymouth Rocks, Wyandottes, Rhode Island Reds and other heavy breeds the proportion is one male to about eight females.

The home is the best place to teach children the most valuable of all lessons—that unless they serve others they cannot be expected to be served by others.

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N. B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

The sense of humor is the oil of life's engine. Without it the machinery creaks and groans. No lot is so hard, no aspect of things so grim, but it relaxes before a hearty laugh.—G. S. Merriam.

THE ENGAGEMENT RING

(By Belle Maniates)

"Philip," observed Mrs. Carmen on her first visit to her son-in-law. "I am so glad to see you and Greta so happy and so comfortablly settled. I am glad to see that she still wears her wedding ring."

Philip Kendrick looked up in questioning surprise.

"She would never wear her engagement ring," explained Mrs. Carmen, "and such a beautiful solitaire as you gave her! The girls were all envious of her when they saw it. We teased her a great deal about wearing it so seldom. We pretended she had pawned it. But there is Greta waiting for me to drive with her."

After his mother-in-law had left the room, Philip stared motionless at the book he held. His face was never very expressive in repose, but its quiet strength when lighted by the flashing keenness of his gray eyes and the hidden sweetness in his smile had proved irresistible to Greta. Now, reflecting on his mother-in-law's speech, his face was stern and troubled. He had not given Greta an engagement ring. It had not occurred to him to do so. He knew little about the customs of such affairs. Greta had been his first and only love. She was his ideal of everything charming and noble in women, and he could not conceive of her stooping to deceive her mother or anyone. There was some mistake about ot, of course Greta would explain when he asked her. She was so shyly and sweetly frank with him.

He grew impatient, however, in waiting for his confident forecast to be verified. The little imperceptible germ of distrust was working against inaction. He went up to his wife's dresing room. On her table was a little tray of ornaments, but no rings were among them. The drawer to the table was open and he saw a jewel cabinet within. A tiny key lay beside it.

Philip turned in self-disgust from his longing to investigate the contents of the cabinet, and he left the room, feeling for the first time in his life like a culprit. In the hall he met Greta radiant from her drive.

"I am having such a lovely time, Philip, showing mother about."

He decided to defer the discussion of unpleasant subjects until after the termination of her mother's visit.

"We met one of Greta's former suitors," laughed Mrs. Carmen, "Jack King. When Greta's engagement to you was anounced he went moping about and finally left for the West. He has just returned."

"If he felt any regret," said Greta, "it must have been only a pasing one, for he looks hale and hearty now."

She spoke lightly, but Philip's searching eyes noted the bright flush that overspread her face. It deepened as she spoke again.

"Jack invited us all to his rooms tonght . He is going to have a few in for bridge. Would you like to go Phil?"

"It will be impossible," he replied. "I have a very important business engagement, but you and your mother must go, and I will call for you."

Hhe thought he detected a look of relief in Greta's fair face.

"All right! Mother is so fond of bridge."

"And of Jack, too," asserted Mrs. Carmen. "I must confess, Philip, that before we had come to know you, our choice of a son-in-law lay in Jack."

"Probably," mused Greta aloud, though speaking to herself, "if I had not come to know Philip well, I should have married Jack, for everyone, mother, Lena and all my young friends connived and contrived to throw us to gether, and propinquity often wins."

She met Philip's queer searching glance as she finished this remark, and she shrank from his continued scrutiny. The little germ flourished throughout the day, although Philip conscientiously and relentlessly did his best to destroy it. That evening his business engagement terminated much sooner than he had anticipated it would, and he telephoned Greta asking her if he should come for them with the touring car and take her mother for a moonlight ride.

"It would be pleasanter for you than bridge," he suggested.

Greta's soft laugh came back over the 'phone.

"It would;; but don't feel sorry for me, dear. Two of Jack's friends disappointed him, so Jack and I are not playing. Oh Philip, Jack wants to see that locket brother Tom gave me for a wedding present. It is in my jewel cabinet in the drawer to my dressing table. The key is there somewhere."

He went up to her room. Greta was not very orderly. The drawer was open, as was also the jewel cabinet. He found the locket, a most beautiful one, set with pearls. Someway, he had never associated Greta with jewels. His presents to her had been books, pictures and curios. After all, it was natural for every woman to like jewels. He ought to have asked her what she wanted.

Suddenl yit struck him as rather odd that she would want to show Jack this locket. He opened it. Within was a tiny soft curl. He remembered that when Greta had showed him this locket she had said that some day he should see what was inside. That it was something of hers that Tom had put in there. He had pleaded to see it, but she had denied him, saying he woould think it silly. Silly! As if every hair of her head were not dear to him!

In vain he looked for the ring. Back in a corner of the drawer he espied a tiny box. He opened it. A ring with a huge diamond lay within. So this was her engagement ring! Maybe it had been. He walked with uncertain steps to the open window, and gave himself up to the maelstrom of forcing doubts that grew to convictoins. Jack and Greta had been engaged. In a lover's quarrel they had broken the engagement, but he had made her keep the ring, and she had accounted for her possession by attributing the donation to him. Now Jack had reappeared and her old feeling for him had returned. He had returned at an opportune time. The honyemoon was over, and Greta doubtless found everyone's prophesy true; she had discovered that her husband was posy and old fashioned. How enlivened she had been by the diversion of her mother's visit. He finally gathered himself together and went out to the car which he drove himself.

Jack's apartments were in the Strathmore. He rang the bell and ran the automatic elevator up to the seventh oor. Jack admitted him, but instead of taking him into his library, he opened the door that led into a cosy where Greta was comfortably ensconsed among some pillows.

"It wasn't much sport looking on at bridge," she explained, "so Jack and I have been talking over old days and—other things. Did you bring the locket, Philip?"

He took it from his pocket and handed it to her. She passed it on to Jack who was enthusiastic over the shape, size, setting of the pearls and so forth.

"May I open it?" he asked.

She looked hesitatingly at Philip.

"No-o, not now!"

Mrs. Carmen appeared in the doorway. "I thought I heard your voice, Philip. Will you take my hand? I want to look at Jack's old china.'

He played the cards mechanically. After the game, the little party broke up. Greta asked the Gardners to ride with them, and they sat in the tonneau with Mrs. Carmen. Greta took the seat beside him. Presently she broke the silence.

"Philip, I see you are getting the speed habit! I am glad; still I told mother you were such a careful driver.

He slowed up.

"I did not notice," he said.

His voice sounded oddly.

"Philip, you seem rathef harassed tonight. Is there anything in your business that is worrying you?"

"No," he answered brusquely.

"What is it then?"

"Don't talk, please, when I am driving."

She relapsed into silence, and he was glad when they reached home. Early the next morning Mrs. Carmen received a telegram from her daughter Lena saying that her baby had the measles. No grandmother could miss the opportunity to display her superior wisdom and experience at such an epoch so she took her departure by the first train, to Greta's regret and Philip's satisfaction. He felt that a crisi was developing and it was much better that they should be alone.

After dinner that night he came into the library where Greta was sitting.

"Where is your locket?" he asked abruptly.

She looked up, starteld.

"Why, Philip, didn't you bring it home?"

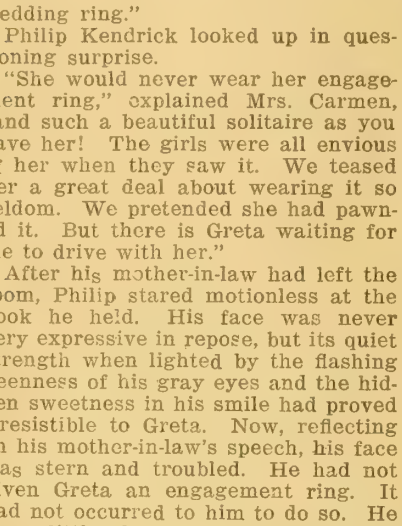
"No; I didn't see it again after I handed it to you and—Jack."

"I forgot al labout it. It must be at Jack's, though I should have thought he would have sent it to me. I'll telephone now."

"Why did you wish to show it to him?" he asked as she was looking up the telephone number.

"I was going to tell ou yon the way home, but you said not to talk to you," she said a little resentfully. "Halloa Central, 117 Main, please. Why you see Philip, Jack wants—Haloa, Jack! You know my voice? Well you should—"

It seemed to Philip that she talked for an hour a string of nonsense over



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the telephone. In reality, it was a few seconds over four minutes.

"Jack says mother picked it up and put it in her bag," she said finally as she hung up the receiver and turned around.

"Write to her for it," he said curtly.

"Why, Philip, she will send it, of course," her tone of voice showed hurt surprise. "She forgot she had it, likely, and she left in such haste and excitement."

Further conversation was prevented by the entrance of one of Philip's friends, and when he left Philip went with him for a stroll and smoke—he said. When he returned an hour later Greta was asleep.

At luncheon the next day she informed him that her mother had returned the locket with a long lecture on carelessness. The lecture evidently did not make much impression, for when Philip came home to dinner, he saw the locket on the library table. An uncontrolalble impulse moved him to gaze again upon the little curl. He opened the locket.

It was empty.

He went up to his wife's room, his face pale, his eyes gleaming.

"Greta," he said abruptly. "I want to know the truth about your diamond engagement ring!"

"Oh!" she gasped, her face stamped with guilt and confusion. "I—who told you—Philip?"

"Your mother told me."

"She didn't know. She thinks you gave it to me. You see, Philip——"

But he had gone. He went to his deserted offices. He was choking not so much with jealousy as with a wild longing for his old faith and trust in her. He felt that he must go away—anywhere. All the figments of his jealous fancy passed in quickly moving pictures. Her being alone in the den with Jack, talking over old days, the curl from her locket, the locket that would have remained with Jack had he not asked about it. The explanation about her mother's taking it was a falsehood of course. Her confession and confusion about the ring showed there was something guilty behind it all.

Married only three months and his heart and home wrecked! And he loved her! He always should love her. In all his wild accusing thoughts he felt a tenderness for her. Her girlishness, her very guilelessness and failure at deceit appealed to his protection. She should have it, now more than ever. He braced himself to quick thinking and to action. He wrote her a letter, the thoughts coming faster tha nhe could write them. He told her that he knew all about her engagement to Jack and that she still kept his ring; that she felt a return of her love for him, and that she had left the locket in his rooms that he might take the lock of hair.

"I cannot bear to keep you from happiness," he wrote, "but be patient, Greta, until I can arrange for your freedom in a quiet and legal way. Then you and Jack can marry, but until then, for your own sake you must not seet him. I see now that I was wrong to come into your young life."

He went home. It was only ten o'clock, but the house was dark. He slipped the letter under her door. Then he went down to the library trying to quiet his agitation of heart and mind. After a long time he heard a soft footfall, a gentle rustle in the adjoining room.

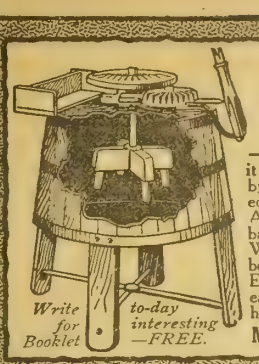
"Philip!"

He looked up quickly. Her face was pale and her eyes wet, but they held the sweet look he loved, and there was a half smil in the tender curve of her lips.

The woman he loved stood beside him and laid her hand on his shoulder. There was a little quiver of laughter in her voice.

"I can't marry Jack, dear, even if you give me my freedom. He is going to be married to a girl he met out West."

He looked at her unbelievin,



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"We were never ngaged, I think Jack thought at one time that he cared for me, but when I knew that I loved you, even before you had told me—I let him understand that I could never care for him. Mother was not in earnest about him moping for me. The night of his party he took me into the den to rave about his girl. He wanted to give her for a wedding present locket like the one Tom gave me. And that lock of hair was my baby curl. Tom stole it from mother's treasure box. She didn't know it until she opened the locket when she was at Lena's. She took it out and said it belonged to her as long as she lived, and then she would bequeath it to you. I love you, Philip, and——"

But she found herself clasped in his arms, and felt his penitent kisses upon her face, and her heart sang and cried

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You may win a cash prize by doing so. Many have done this as will be shown by the names and addresses which we will send you. If you find the faces mark each one with an X, cut out the picture and send it to us, together with a slip of paper on which you have written the words "I have found all the faces and marked them." Write these nine words plainly and neatly, as in case of ties, both writing and neatness are considered factors in this contest.

This may take up a little of your time but as TWO HUNDRED DOLLARS in cash and many merchandise prizes are given away, it is worth your time to take a little trouble over this matter. Remember all you have to do is to mark the faces, cut out the picture and write on a separate piece of paper the words, "I have found all the faces and marked them."

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Send your answer at once; we will reply by Return Mail telling you whether your answer is correct or not, and we will send you a complete Prize List, together with the names and addresses of persons who have recently received over Four Thousand Five Hundred Dollars in Cash Prizes from us, and full particulars of a simple condition that must be fulfilled. (This condition does not involve the spending of any of your money.)

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This Competition will be judged by two well known business men of undoubted integrity, who have no connection with this Company, whose decisions must be accepted as final.

Upon receipt of your reply we will send a complete list of the names and addresses of persons who have won $4,500.00 in Cash Prizes in recent contests held by the publishers of this advertisement. Although these persons are entirely unknown to us, they are our references. An enquiry from any one of them will bring the information that our contests are carried out with the utmost fairness and integrity. Your opportunity to win a good round sum is equally as good as that of anyone else, as all previous winners of cash prizes are debarred from entering this contest.

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with his.

Later, when, his arm about her, they were going up the stairs, she laughed softly.

"Oh, the ring! I've not told you."

"I a m ashamed to ask, dear," he admitted.

"I am not conventional, and I didn't mind that you omitted the engagement ring," she said, "but mother, Lena and the girls were all ready to criticize, as people always are at such times, and I didn't want them to find an opening wedge for flaw, so I just bought the biggest, brightest paste jewel I could find, and only occasionally flashed it before their ignorant eyes. It was only too effectual, I see now. I wanted to tell you; it was such a good joke on them, but I was afraid you would think I was criticizing for not giving me a ring."

"I am thickheaded, Greta, but tomorrow I shall buy the brightest diamond I can find, and you must wear it."

"All right, Philp, we will be engaged all over again."

NUT BREAD

1½ cups barley flour.
½ cup buckwheat.
1¾ teaspoons salt.
¾ teaspoon soda.
2½ teaspoons baking powder.
¾ cup molasses.
1 cup sour milk.
¾ cup choped walnut meats.
Raisins.

Mix and sift dry ingredients and add liquids. Let stand twenty minutes before baking. Bake slowly fifty or sixty minutes in greased pans in a moderate oven.

Makes two small loaves.

POTATO STUFFED WITH SAUSAGE

Wash thoroughly medium-sized potatoes and peel. With an apple corer push down through the middle to the bottom and remove the core thus made. Fill the cavity remaining with well-seasoned sausages, which have been slightly browned, and pour over the drippings. Bake until potatoes are done. They should be an appetizing brown.

ORANGE SPONGE

3 oranges, juice and pulp.
¼ cup white sugar.
¾ lemon, juice and pulp.
2½ pints of cold water.

Strain. Mix three tablespoons cornstarch in a litle cold water; stir into the liquid and let boil ten or fifteen minutes. Set aside to cool. Beat whites of three eggs, and whip into the sponge with a Dover egg beater, when it is ready to serve.

CRUMB BREAD

2 quarts hot water.
1 cup molasses.
4 teaspoons salt.
1½ quarts bread-crumbs.
1 yeast cake dissolved in 2 tablespoons lukewarm water.
4 tablespoons shortening.
1 quart graham flour.
White flour to knead.

Dry and grind bread in the meat-chopper before measuring. Add molasses and salt to water, pour over crumbs and when lukewarm stir in yeast. Add graham flour and white flour to knead. Brush with melted fat, let rise overnight. In morning sape into loaves. Brush with fat. Let rise until double in bulk.

THRIFT FRITTERS

2 cups cold mashed potatoes.
½ cup of left-over corn.
1 onion, minced fine.
1 beaten egg.
Salt and pepper.

Mix well and saute in a frying pan in which is a teaspoon of cooking oil. Brown well on one side, then carefully turn and brown on the other side. Peas or salmon can be substituted for the corn with equal results.

When ironing if the clothes become scorched from too hot an iron, the scorch can be removed with peroxide of hydrogen. If scorched quite badly several applications may be necessary. If desired, the warm iron can be pased over the spot after applying the peroxide, as that tends to remove it a little sooner.

Keep a box of rubber bands handy in the kitchen. When salmon, gravy, or sauces which can be used again are put away in small jars or cups, use pieces of tissue-paper for cover and hold them firm with the rubb bands. In this way the food is pr tected from dust and no odor escape

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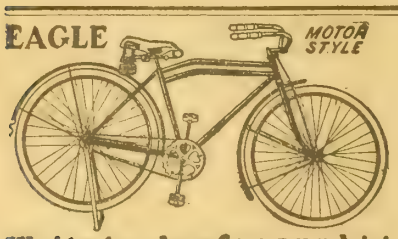

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2A

MOTHERS AND YESTERDAYS

(By Calvin D. .Wilson.)

A woman who is famous for her beauty and who is now fifty-five years of age and wonderfully well-preserved, has recently been giving the public the benefit of her experience in saving health and good looks. In her care of herself, she declares one of the elements is that she "has no yesterdays." She must mean, of course, that as far as possible she strives to forget all the disagreeable and painful things of her past.

While mothers, as a rule, are not concentrated upon rivalling professional beauties, yet there is wholesome good sense in what this particular woman advises, from other points of view. The counsel about having no yesterdays is, after all, essentially apostolic, for Paul, in regard to the heavenly race, declares he forgot the things which were behind and pressed forward to those that are before. A prominent statesman recently asserted that he is not nearly so much interested in what a man has done as what he is going to do.

For the mother who is training children, the present and the future are in reality the fit subjects of earnest and hopeful thought, and not the past. She should bravely let the mistakes pass, correct what can be remedied, and go on. To us the best advice we ever received was from Dr. Talmage, who said; "Sing fourteen verses daily to the tune of the Long Meter Doxology. The words are 'Go on, go on, go on,' "

Forget the disagreeable things of the past. One of the brightest moments of Christian, in "Pilgrim's Progress," was when the load on his back was loosened and fell away. Lyman Beeeher dcclared he was never really happy until it occurred to him one day that he did not have the responsibility of managing the universe, that God would do that, that all he had to attend to was his own particular duty.

There is no class of individuals who have more need of getting rid of yesterdays than mothers, who have enough responsibility to carry with the present and the future. Let them glean the essence of their experiences in the form or wisdom and cast the rest away, for their own hearts' lightness, for the joy of their children, and for equipment for the present houd.

EAT POTATOES FOR ENERGY

A medium-sized potato, weighing about 3½ ounces, supplies about as much starch as two small slices of wheat bread one-half inch thick. In other respects, also, the potato measures up well with wheat bread and even has the advantage over it in supplying certain salts which the body needs to counteract the acidity resulting from the use of such foods as cereals, meat and eggs.

Good food material is lost if potatoes are pared before they are cooked. Besides a loss with the paring itself, even when carefully done, food substance is dissolved out of potatoes when they are pared and then soaked or cooked in water, especially if they are put on to cook in cold water. Steaming and baking cause the least loss of food value. If cooked in water, (1) the yshould not be pared until after they are cooked; (2) they should be put on to cook in boiling salted water.

POTATO SOUP

2 cupfuls of hot riced or mashed potatoes.
1 quart of milk.
2 slices of onion.
3 tablespoonfuls of butter.
2 tablespoonfuls of flour.
1½ teaspoonfuls of salt.
Celery salt.
Pepper.
Cayenne.
1 teaspoonful of chopped parsley.

Scald the milk with the onion; remove the onion; add the milk slowly to the potatoes. Melt the butter; add to it the dry ingredients; stir the mixture until it was well blended. Add this to the liquid mixture, stirring it constantly, and boil the soup for one minute. Strain it, if necessary, add the parsley and serve it.

POTATO SALAD

6 cold boiled potatoes.
4 tablespoonfuls of salad oil or melted butter.
2 tablespoonfuls of vinegar.
½ tablespoonful of salt.
Cayenne Pepper.
2 Tablespoonfuls of chopped parsley
Few drops of onion juice.

Cut the potatoes into half-inch cubes. Make a dressing by mixing thoroughly the other ingredients. Pour this dressing over the potatoes, and allow them to stand for fifteen minutes. Drain off any dressing that may not have been absorbed by the potatoes. Garnish the salad wtih sprigs of parsley, and serve it with boiled dressing. One cupful of chopped celery or two hard-cooked eggs, chopped or sliced, may be added.

W-S S

Holding War-Time Markets for the Canadian Farmer

Canada is called upon to help to feed Europe during the period of Reconstruction.

This is good business for the Canadian farmer as it means he may be assured the same markets as he had while the fighting was on

BUT— these prospective customers are little better prepared to pay cash for their purchases than they were during the War. To hold these markets for you, and make it possible for you to get the cash, the Dominion of Canada must extend credits.

Must Supply Credits

How is Canada to supply the necessary credits and finance this international trade? From the invested savings of her people.

The plan has been most carefully worked out. If the Canadian people co-operate to the utmost of their ability, the markets are assured, the people profit by their investment, their money is available when needed, and since Canada will, in due course, receive back the money advanced to the buying nations, not a dollar is added to the permanent indebtedness of the country.

$5.00 for $4.01

The Dominion of Canada is raising the necessary money by the sale of War-Savings Stamps.

In your own interest, buy War-Savings Stamps. Get every man, woman and child you can talk to, to buy War-Savings Stamps. The price this month is $4.01.

Each stamp will be redeemed on Jan. 1st, 1924, by the Dominion of Canada, for $5.00.

As an aid to the purchase of a War-Savings Stamp, you can buy Thrift Stamps at 25 cents each. Sixteen Thrift Stamps on a Thrift Card represent $4.00 on the purchase of a W-S.S.

W-S.S. and Thrift Stamps may be purchased at Money-Order Post Offices, Banks, and other places displaying the sign at the top of this announcement.

50

Fruit Packages

We Manufacture Strawberry Boxes and Crates for same, 6 qt. Baskets, Apple Boxes, Box Shooks, Apple Graders, Wheelbarrows. Now is the time to lay in a supply of Fruit Packages for the coming season. We have a good stock on hand, order early and ensure prompt shipment. Price on application to

Hantsport Fruit Basket Co., Ltd.
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TWO MONTHS OLD BABY HAD BAD COLD.

DR. WOOD'S NORWAY PINE SYRUP SAVED HIS LIFE.

It takes the life out of a mother to see the child—the idol of her heart—slipping away, succumbing to the cruel cough that all the remedies she has tried won't cure.

There is nothing so good for children's coughs, or colds, croup, whooping cough, or bronchitis as Dr. Wood's Norway Pine Syrup.

It is pleasant to take, and it cures so quickly and thoroughly that the heart of the mother is delighted.

Mrs. Angus McKinnon, Richmond, P.E.I., writes:—"Last winter my baby was just two months old, when he took a bad cold. He could not keep anything on his stomach with the cough. I tried doctor's medicine, but it gave no relief. I told my husband I would try Dr. Wood's Norway Pine Syrup, and I must say it saved his life. I just used four bottles and now he is perfectly cured, and I can't help but express my thanks to you for curing my baby.

Two years ago I used it for one of my girls. She had a cold and cough, but the doctor's medicine was no good for her. I got six bottles of Dr. Wood's Norway Pine Syrup, and it gave her a perfect cure. I can not praise it half enough."

The genuine Dr. Wood's Norway Pine Syrup has been on the market for the past 30 years. Don't accept a substitute and perhaps endanger your child's life.

Price 25c. and 50c. Put up only by The T. Milburn Co., Limited, Toronto, Ont.

WINTER VEGETABLES AND ATTRACTIVE WAYS OF SERVING THEM

In winter a cook's attention is specially directed to vegetables. In the other seasons vegetables are so much with us that we use them naturally. In winter we forget how valuable they are. Lack of them in the diet was what uesd to make sulphur and molasses a national habit. We tried to cure, by heroic methods, the sluggish condition which months of unwise diet had got us into. Nowadays, we eat plenty of fruit and vegetables and throw old-fashioned pill-boxes and spring tonics into the rubbish heap.

As regulators of the digestive system, vegetables are most important. The woody fibre they contain makes them laxative, and some of the juices, that of onion especially, are better than drugs in their wholesome action.

All vegetables contain some mineral salts which are necessary to build up and keep sound the bony structure of the body. Leaf vegetables, like cabcage, contain in addition a substance now proved to be absolutely necessary to healthy growth. Finally vegetables furnish the variety which is especially a virtue in winter menus.

If the canning season found us valantly at work, there are few vegetables not available to us the year round. For those we buy in the market we need tests, so that our money shall go as far as possible. When you buy potatoes in bushel lots, select one at random before purchasing and cut it open. If there are brown streaks they indicate fungus disease, and bring the whole lot under suspicion. Squeeze the pieces of potato to see whether drops of water form and run off. If they do the potatoes will be soggy. A decided yellow tinge means that they are not likely to cook well. If green, they have been exposed to the sunlight and rendered unfit for usee. Potatoes should have smooth skins, and be of moderate and uniform size in order to be usable to the best advantage.

Cabbages should be vivid in color, the leavs crisp when broken, with a head which feels hard and firm in the hand. Root vegetables, like carrots and parsnips, should be hard also, not flabby or shiveled.

General Direction for Cooking

In preparing vegetables for cooking, it is wise to remember that the portion just under the skin contains the best food value. Scrape the skin off when possible, otherwise pare very thin.

Three methods are possible in cooking—baking, boiling and steaming. The third method is best, because by it the greatest amount of both flavor and nutrition are conserved. A colander over a kettle with a tightly fitting cover will answer the purpose unless we have a special steamer. The type of steamer which is built in three or four stories is a saving for those who use gas stoves, becauase in it a number of things can be cooked at once over one burner.

Solid vegetables, like squash, beets, and onions, are delicious baked. Put them into a shallow pan with a little water in the bottom. The oven should be moderately hot. Neither a slow oven, nor a very quick oven is economical in baking potatoes or any other vegetable.

When vegetables are boiled, the water into which much of the mineral matter has dissolved should be saved for making soups and gravies. Use just enough water to prevent the vegetables from burning on. Whatever the method of cooking, vegetables should not be cooked after they are tender. Beyond this point they lose flavor and appetizing appearance. If we boil vegetables the water should be jumping when they are put in. Cook "above ground" vegetables, such as aspargaus, spinach, etc., in covered kettles to preserve the color. Strongly flavored vegetables, like cabbage, onions, and turnips, ought to be cooked in uncovered containers, and the water changed at least once during the process. Boiling water only must be used to replace that thrown away. A pinch of soda in the first water for onions improves them.

Salt is always added to vegetables, and the time to do it is important. Allow one level teaspoon of salt to each quart of water. Fresh, juicy vegetabls should have the salt added to the water at the beginning. Old, tough vegetables do not take salt until after they are cookd near tender. Peas and beans must be cooked in unsalted water. Many also prefer potatoes cooked in this way with salt sprinkled over them after they are drained.

The time for cooking vegetables varies from ten minutes to over an hour. No time-table of any value can be given, because the time depends upon such variable factors as size and age. The smaller the prices the less the time. This is a useful rule in an emergency, but we have to remember that every time we cut a vegetable to be boiled, we lose some of its food value, unless we save the water in which it was boiled.

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PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
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GIVE NATURE A CHANCE
Gin Pills Instead of Medicine

ALL scientists agree that pure blood is the basis of good health. It will build up, restore health, fortify against disease. The work of purifying the blood falls to the kidneys. If the kidneys fail to perform their function, impurities and poisons are carried in the blood stream to all the organs and joints, resulting first in backache, pains across the groins, down the sides, dizziness and urinary derangements. If neglected Rheumatism, Sciatica, Gravel and Inflammation follow.

The chemist who worked out the formula for Gin Pills to restore normal Kidney action thus placed in the reach of every man and woman, a great preventive remedy that gives Nature her chance to cure the evils due to poison in the blood. That is a simple scientific fact. Gin Pills can be obtained almost everywhere at 50c. a box, or a free sample can be obtained by writing The National Drug & Chemical Company of Canada, Limited, Toronto, Ont.—U.S. residents should address Na-Dru-Co., Inc., 202 Main St., Buffalo, N.Y. 309

For plain seasoning this is a good general rule. Modifications may be made to suit individual tastes: To each quart of cooked vegetables add four tablespoons of butter, one teaspoon of salt, and one-eighth teaspoon of pepper.

Good tools are as necessary to the cook as they are to any artist or craftsman. Here are a few which we need. A wire—not a wood—potato masher, a potato ricer, and a French cup-knife for making potato balls for garnisr. A pastry-bag, with one or two tubs, is also a convenience. None of these utensils is an extravagance. The initial cost is not large, they last practically a life time, and they add much to the attractiveness of many a meal.

DO NOT NEGLECT BRONCHITIS IN THE BABIES

The frequency with which bronchitis in the infant develops into broncho-pneumonia is appreciated by very few mothers. One of the main causes of broncho-pneumonia in babies is extension of the inflammation from the bronchial tubes and, hence, to the lung itself. The danger of broncho- pneumonia is probably, well understood, but how many mothers consider that a neglected attack of bronchitis frequently leads to this dangerous disease? In adults, extension of this inflammation is a comparatively rare thing, but not so in childrn, and particularly not so in those under two years of age. Among those classes of people where bronchitis is treated early, the number of cases of broncho-pneumonia from this cause is very low.

During the late winter and early spring, bronchitis is most common. Any mother who has watched her baby will agree when we say that a baby from a slight sickness may become very, very ill, will appear prostrated, and all of a sudden will take a turn for the better and seem to be itself in a few days. This goes to show how quickly the infant seems to change its condition. On the other hand, the disease seemingly of little significance to an adult may be just the type which will cauase death in the infant. The baby will not seem to rally, but rather go down, and, as in the case of regaining health quickly, wil just as quickly slip beyond all human aid. All bronchitis cases need immediate attention.

Causes and Symptoms

High winds and dust seem to contribute to the spread of bronchitis. It is a condition of inflammation of the bronchial tubes with the production

MINARD'S "KING OF PAIN" LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
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—Mr. S. Kaulbach.

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—Mrs. S. Masters

Manufactured by the
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Yarmouth, N.S.

of mucus or phlegm. This causs the patient to cough in order to get rid of it. The cough may be "tight" or "loose" according as to whether this mucus is sticky and hard to remove ro more fluid and more easily expiled. Accompanying the cough there is usually a slight fever, and more or less irritability, loss of appetite and diarrhoea. There is frequently an inflammation of the nose, or the so-called "cold in the head." Bronchitis is not in itself dangerous, but the complications which are likely to follow are the most dangerous and the most fatal with which doctors must have to deal.

Care of the Patient

The child with bronchitis needs air, but not bad air, nor yet cold air, nor the damp, foggy air of the outside. If the room is small where the baby or children lie ill, a little stove on which can be placed a kettle of water (kept boiling) is of great benefit to the sufferer. The temperature of the room should be kept as nearly as possible at 65 degrees F. In the early stages of bronchitis, this kettle of boiling water seems to give much relief. One of the good old remedies used years ago was 1 fluid ounce turpentine in 1 pint of boiling water and inhaled. One ounce contains eight teaspoonsful.) In the case of an infant, this would have to be placed as close to the face as possible to allow the vapor to be breathed by the child. With older children, a pint of water, to which the turpentine has been added, in a bowl, over which a piece of cotton fitting around the edges has been placed is useful. Allow the child then to place its face over the other end of the cotton and inhale the vapor as it passs up thrugh the bag. Any clean cotton bag, with a tape or string run through the end, can be made to fit over a bowl or dish of some kind.

Poultices, in children, arranged so that the whole chest is encircled, are good. Th eidea of any poultice is to keep the heat in one place, so htat circulation will become improved, and good circulation means plenty of blood to counteract the poisonous effects of the toxines present.

Poultices and Plasters

In the case of children, if a mustard poultice is to be used; two teaspoons of flour anad one-half teaspoon of good strong mustard are sufficient. Always before applying the mustard poultice, rub oil over the part on which the poultice is to be placed, and no blisters will form. The oil may be in the form of vaseline, castor oil, lard, goose oil, camphorated oil, but do not forget the oil first. Mix the poultice with cold water. Warm water dissolves the oil of mustard from which the heating properties come. If you want to heat the plaster before applying, hold it over heat for a second or so, but not longer, because the heat is too drying.

How to Give a Mustard Bath in Emergencies

A mustard bath is also an excellent stimulant, and the body of the child becomes reddened as a result of the stimulation. The little patient is made comfortable. A tablespoonful of mustard is added to a gallon of water at 100 degrees to 105 degrees. The infant should be undressed. Cut the clothes off if necessary, but do not immerse with clothes on for the heat does not have the desired ffect, and there is a great probability of chills afterwards. Be sure to see that the whole of the body is covered by the water, for, if not, the child will be chilled by the exposure rather than stimulated by warmth. After remaining four minutes in the bath, the child should be quickly dried with a warm towel, wrapped in a hot bdanket and hot water bottles should be placed outside the blanket. The child should be kept very warm, but given plenty of air. Never cover the head.

BROWN BREAD

Mix together 1 cup corn-meal, 1 cup rolled oats, ground fine in food-grinder, and 1 of barley flour. Add 1 teaspoon salt, 1¾ cups milk, ¾ cup of molasses, and 1 teaspoon soda dissolved in 1 tablespoon water. Add raisins if desired. Mix well and steam 2½ hours. This quantity will make one smal loaf. Steam three and one-half hours.

CHEESE AND POTATO CAKES

Boil and mash eight or ten large potatoes. Rub the potatoes through a sieve and add two teaspoons of fat, a cup of sifted flour, a teaspoon of baking-powder, four tablespoons of grated cheese and salt and pepped to taste. Form into a light dough with two table spoons of milk and the yolks of two eggs. Shape in cakes, brush with white of egg, and bake in a quick oven until nicely browned.

BAKED TONGUE

Wash a medium sized beef tongue and boil in a large kettle of water, season with two teaspoons salt, one teaspoon pepper When the tongue is quite tender remove to a baking dish and cover with one can tomato soup, place in a hot oven and bake for fifteen minutes. Serve in the dish in which it was baked.

QUICK RAISIN BREAD

2 1/3 cups entire wheat flour.
½ cup fine corne meal.
2 tablespoons baking powder.
1½ teasponos salt.
¼ cup brown sugar.
1 egg, well beaten.
1¼ cups milk.
1 cup seeded raisins, cut in halves.

Mix and sift dry ingredients, add eggs and milk. Mix well and then add raisins. Put into a greased breadpan, cover and let stand twenty minptes. Bake in a moderate oven fifty to sixty minutes. Make one loaf.

A Stitch in Time

THERE is a homely old proverb which tells us that "a stitch in time saves nine."

If the man who said it first had been thinking of health, he would probably have said that a stitch in time saves nine hundred and ninety-nine, so important is it to repair those first tissues that become impaired by ill-health.

This is no new doctrine. It is as old as man. Unfortunately (to paraphrase another proverb), we too frequently put off until to-morrow what we ought to do to-day.

Failing to repair the first tissues that need repair, allowing the malady to continue unchecked, other tissues become impaired, for all parts of the body are sympathetic.

The trouble spreads. And—then comes the rent. Nervous disorders may show themselves in various ways, such as sleeplessness, headaches, neuralgic pains, nervous prostration and exhaustion, while later developments take the form of paralysis, locomotor ataxia, or some form of helplessness.

Strangely enough—all these symptoms are preventable, if that stitch had been taken in time. It is here that Dr. Chase's Nerve Food becomes important. We do not say that it is the only means of preventing the rent, but we do say that many years of experience have **proved** its value as a repairer of wasted nerve tissues that have become weakened by overwork, anxiety, or other causes.

When we say that the value of Dr. Chase's Nerve Food has been **proved** we are speaking by the book. We might, at considerable length, tell you why Dr. Chase's Nerve Food will make that stitch if taken in time and prevent the rent, but we have always proceeded upon the idea that people are more interested in knowing **what has been done** in cases similar to their own.

Mrs. W. T. Abbott, 536 Paterson street, Peterboro', Ont., writes: "My system was in a rundown condition, and I was troubled with nervousness and sleeplessness. For some time also I had been bothered with neuralgia, and although I tried many remedies, it was without success. Upon the advice of a friend I commenced using Dr. Chase's Nerve Food, and soon found that my neuralgia was cured, and I have not been troubled in this way since. I also find that now I can eat and sleep well, and I give full credit for this great benefit to Dr. Chase's Nerve Food. I might also mention that I had lost considerable in weight, but after using the Nerve Food I gained back the flesh I had lost."

You can obtain Dr. Chase's Nerve Food from any dealer at 50 cents a box, six for $2.75, or from Edmanson, Bates & Co., Ltd., Toronto.

MARKETS.

MONTREAL

THE CATTLE MARKET

Montreal, Fb. 15.—At the Canadian Pacific Liv Stock Market the offerings today amounted to 250 cattle, 200 sheep and lambs, 275 hogs and 175 calves. A feature of the trade at this market has been the continued demand from American buyers for supplies, notwithstanding the recent sharp advance in prices, and shipments of two carloads of lambs were made to New York and three carloads of cattle to Philadelphia. There was no further change in prices today for cattle, but the feeling was very firm owing to the limited supply offered and the scarcity of the top grades. The demand was steady from butchers for small lots to meet their requirements for the balance of the week and sale sof fairly good steers were made at $12.50 to $12.75, medium at $11.50 to $12 and the lower grades at from $8.50 to $10.50, while a few choice light cows sold at $10 to $10.25, and the commoner lots at from $7 to $9. The few butchers' bulls on the market brought from $6.50 to $8.50 per 100 lbs., but there were no choice lots. Canning bulls met with a steady demand at $5.50 to $6, and cows at $4.50 to $5 per 100 lbs.

A fair trade was done in small meats and prices generally were firmly maintained. Ontario lambs sold at $14 to $14.50 and Quebec stock at $13 to $13.50, while sheep brought from $6.50 to $10 per 100 lbs., as to quality. The supply of milk-fed calves was small, for which the competition between buyers was rather keen at from $10 to $16, and stall-fed stock sold at $6 to $8 per 100 lbs., as to size and qualitq. The market for hogs was exceedingly firm in sympathy with the further rise in prices at other Canadian centres and the continued small receipts here. The demand from packers was good and sales of selected lots were made at $17.25 to $17.50, and lots weighing less than 140 lbs. each at $15.25 to $15.50 per 100 lbs., weighed off cars. The bulk of the trading was done at the outside figures.

THE PROVISION MARKET

Montreal, Feb. 15.—In sympathy with the further advance in prices for live hogs in the Toronto market yesterday of 25c to 50c per 100 lbs. to $17.50 weighed off cars, and to $17 fed and watered, and the rise in the Winnipeg market of 50c per 100 lbs. for selected lots of $16.25 weighed off cars a very firm feeling prevailed in the local market today, but prices showed no actual change. The offerings were small, for which the demand from packers was good, and sales of selected lots were made at $17.25 to $17.50, and olts weighing less than 140 each at $15.25 to $15.50 per 100 lbs, weighed off cars. Owing to the above the market for dressed hogs was also firm with an increased demand for supplies, and a fairly active trade was done in a jobbing way in country dressed medium and light weights at $21 to $23, and in city abattoir freshkilled stock at $24 per 100 lbs.

MILLFEED AND ROLLED OATS

Montreal, Feb. 15.—The condition of the market for millfeed was unchanged, prices for all lines being maintained with a steady business passing in mixed car lots for local and outside account and sales of pure grain moullie were made at $64, pure oat moullie at $60 to $62, pure barley feed at $50 to $52, mixed grain moullie at $47, and dairy feed at $43 per ton, including bags, delivered to the trade, and small lots of bran sold at $38.75, and shorts at $43.75 per ton ex-warehouse, including cartage, with car lots of bran quoted at $37.25, and shorts at $42.25 per ton, ex-track, all less 25c per ton for spot cash. The markee for rolled oats continues quiet with an unsettled feeling and prices for standard grades are nominally quoted for broken lots at $3.90 to $4.10 per bag of 90 lbs., and Golden cornmeal is selling at $4.75 to $5 per bag delivered to the trade.

ORIENTAL EGGS FOR MONTREAL MARKET

February 15th.

The Canadian egg markets during the week have been governed almost exclusively by the trend of the situation in the United States. There has not been anything like the wide break in prces that there was in the States during the earlier part of the week, because it required a big drop there before importations could be made on a profitable basis. This came a week ago Saturday, when several lots were bought by Canadian dealers at Detroit and Chicago, which it was figured would cost about 50½c to 51c delivered at Toronto, all charges paid. Monday further weakness developed at Chicago, and a number of cars were purchased, which it was estimated would cost about 42½c if brought by freight and 45½c by express. Since then a much firmer feeling ahs developed in that market. Very little grading is being done now. The arrivals being practically all new-laids, and are sold straight with the exception of a few from specialized poultry farms and egg circles.

No severe fluctuations have occurred in Western Canada. There has been a general decline in sympathy with the United States markets, but the amount of stock already purchased at previous prices tended to keep the situation firm. The cold wave last week checked receipts somewhat on the principal markets. The bulk of the imported eggs continue to arrive by express. So far the small

SHERWIN-WILLIAMS INSECTICIDES

M-S

COVER THE EARTH

Make A Good Job of Your Spraying!

SHERWIN-WILLIAMS Insecticides are absolutely dependable in *every* instance. You cannot get better—there are none better made. And in your spraying, be *thorough.* Use all the materials required—and use them as directed on the packages—*SHERWIN-WILLIAMS* Insecticides are certain death to the bugs, and you cannot afford to take chances. Here is a list of them,—

S-W Dry Powdered Arsenate of Lead

Can be kept from year to year. Will not freeze or evaporate. 1-lb. does the work of 2-lbs. of paste.

S-W New Process Arsenate of Lead (in paste)

Neutral—will not burn or hurt even the tenderest foliage.

Berger's Pure Paris Green

Sure death to potato bugs. The Standard Paris Green for years—up to Government standard in every way.

S-W Calpoiso-Arsenate of Lime

A Dry Powder. The best to mix with Lime Sulphur or Bordeaux Mixture.

S-W Dry Lime Sulfur

A Powder to be mixed with water. Lasts for years. No freight to pay on water as is the case with solutions.

S-W Insecto

Arsenate of Lead combined with Bordeaux Mixture to spray garden and orchard.

S-W Tuber-Tonic

Kills bugs and fungus on potatoes. In dry form.

Write us for our spraying guide. Also for any further information regarding the above material.

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Paint, Color and Varnish makers. Linseed Oil Crushers.

A Right Quality Product for Every Purpose. 36

Eureka Potato Planter

Pays for Itself in Labor and Time Saved

One man and team with an Eureka Potato Planter needs no hired help to plant the whole crop. Whether you plant 4 acres or 400, the Eureka Planter will pay for itself many times over. Better than hand planting. Increases yield. Does 5 operations at once, automatically—accurately.

Opens furrow, drops seed any distance and depth, drops fertilizer (if desired), covers up and marks next row. **Furrow opens and seed drops in plain sight**—an equal distance apart, at uniform depth, with **absolutely no injury to seed.** Easy to operate in any soil, made of steel and malleable iron—assuring long life, light weight and few or no repairs.

Write for **free** catalog on this great line of potato planters—the largest line made. Sizes for 1 or 2 rows, with or without fertilizer attachment. **In Stock Near You.** A success for over 20 years. Whether you are a large or small grower—**write today.**

Send for Catalog

EUREKA MOWER CO., Box 745 Utica, N.Y.

FROST & WOOD CO., LTD ST. JOHN, N. B.

antities of Chinese arriving have en absorbed with no apparent affect on the market. No destination has en given for some seven cars of inese eggs at present rolling East; ese are said to be billed in bond Montreal, but under diversion ord- s. A further shipment of eight cars s billed to start for Montreal Mon- y. The receipts of Oriental eggs in ncouver during the past week have en the heaviest for two or three ars.

According to advices by wire from ints in Ontario today a stronger eling has developed in the Canadian g situation, and shippers are ask- g 4c to 5c per dozen more for fresh- thered stock than they were bought last week, 50c being asked today .b. London, Ont. There was an in- eased enquiry today between whole- le houses for cold storage eggs, and les of several fair-sized lots were ade, which indicates that stocks on ot are about exhausted of such. here was no change in jobbing pric- , but the tone of the market was m, with a steady trade passing in all lots. The receipts today were 8 cases, as compared with 1,020 for e same day last week, and 103 for e corresponding date a year ago.

We quote wholesale jobbing prices follows:

rictly new laid.....55c
ld storage selects.....50c
ld storage No. 1.....47c

USTRALIAN WHEAT GROWERS

A recent estimate made by the Aus- alian Wheat Board anticipated that e surplus from the 1918-19 wheat op, added to the carry-over from pre- ous seasons, would aggregate 165,- 6,000 bushels, or approximately 4,- 7,000 tons of wheat (to a limited tent milled into flour) and flour be- g available for export. It is announc- that many steamers have been re- ased to load the purchases made by British Government, which, how- er, did not buy any of the 1917-18 op upon which the Commonwealth overnment advances now total over 11,000,000.

Independent of the earlier guaran- es made by several State Govern- ents (owing to the Federal Govern- ents not having come to a decision the matter) the Prime Minister an- unced on December 19 that the mmonwealth Government had de- ded to make an immediate advance 4s (97 cents) per bushel to the rmers on the 1918-19 wheat crop of cognized quality. This guarantee mediately relieved the State Gov- nment from any liability in making vances to farmers.

The advance will involve a payment about £13,000,000 in addition to ilway freight and all expenses in ndling. This expenditure will grant ompt relief to wheat growers who, rough an unfavorable season, will ve a much restricted production.

WINNIPEG GRAIN MARKET

February 15.—Oats closed 7/8c high- for May and 5/8c higher for July. arley closed 1 1/8c higher for May and higher for July. Flax closed 1/4c gher for May.

Fluctuations in grain today were:

	Open.	High.	Low.	Close.
Oats—				
ay	66½	67¼	66⅜	67¼
Barley—				
ay	84⅜	85⅜	84⅜	85⅜

Cash prices closed:

Oats—No. 2 C.W., 68¼c; No. 3 C.W., ¼c; extra No. 1 feed, 63¼c; No 1 ed, 59¾c; No. 2 feed, 55¾c.

Barley—No. 3 C.W., 81⅝c; No. 4 W., 76⅝; rejected and feed, 69⅜c.

ax—No. 1 N.W.C., $3.04½; No 2 W., $3.01½c; No. 3 C.W., $2.81½.

DAIRY PRODUCE TRADE

February 15.—The receipts of but- r today were 94 packages, as com- ared with 86 for the same day last eek, and 46 for the corresponding date a year ago. There were no new developmnts of any importance in the market to note. The trade in a whole- sale way was reported quiet, there be- ing only a small demand at present for round lots, but the movement in a jobbing way continues fair and pric- es are fully maintained.

We quote wholesale jobbing prices as follows:

Finest creamery, solids.51½c to 52c
Finest creamery, blocks 52½c to 53c
Fine creamery, solids...51c to 51½c
Finest dairy.....43c to 44c
Fine dairy.....42c to 42½c

The receipts of cheese today were 8 boxes, as against 9 for the same day last week, and 45 for the correspond- ing date a year ago. There was a lit- tle more enquiry today from local buy- ers for Quebec twins and sales of sev- eral fair-sized lots were made at 26½c to 27c per lb.

The following prices are being paid by the Commission:

No. 1 cheese.....25c
No. 2 cheese.....25½c
No. 3 cheese.....24c

THE BALED HAY MARKET

Montreal, Feb. 15.—The market for baled hay was rather quiet today, ow- ing to the fact that buyers in most cases seem to have ample supplies on hand for the present and in conse- quence the demand was somewhat lim- ited, but the tone was steady and prices were unchanged with car lots of No. 1 timothy hay quoted at $25, No. 1 light clover mixed hay at $24, No. 2 timothy hay at $24, No. 2 clover mixed hay at $23, and No. 3 timothy hay at $22 per ton ex-track.

Efficient management in the farm home is quite as essential to the suc- cess of the farm as is the systematic management of the farm itself.

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BOOKS FREE

Louden Architectural Service

The most important feature of your barn is the plans you make before you start building. Lay your plans properly and you will have taken the most important step towards having a barn exactly suited to your needs.

Get the Louden Plan Book, 112 pages, crammed with the latest and best possible information on barn planning and construction. Whether you are remodelling, or building, the Louden Plan Book will guide you to correct arrangement, construction and ventilation.

But the best planned barn can give you satisfaction only if furnished with fittings that reduce labor, save time and lessen expense, thus tending to increase your profits, satisfy your hired help and keep the boys on the farm.

Time, Labor and Money Saving Equipment

The new Louden Catalogues shown above are full of just the information you need in order to intelligently determine just what kind of equipment you should have.

No better written, or nicer printed and illustrated catalogue of real money, time and labor-saving devices, has ever been printed in Canada; 135 pages of the most practical, commonsense information. Don't fail to fill in the coupon and get these catalogues free by return mail.

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Head Office and Factory: 418 Crimea St., Guelph, Ont.

Branch at:
Martin Ave., Winnipeg, Man. Vancouver, B.C. St. John, N.B.

Alberta Enquirers write: Alberta Dairy Supplies Limited, Edmonton, Alta.

Tear off this coupon now and mail us to-day.

LOUDEN MACHINERY CO. OF CANADA, LIMITED,
418 Crimea St., Guelph, Ontario.

Please send me free, postpaid, your large illustrated books checked below.

☐ Barn Plan Book. ☐ Feed & Litter Carriers. ☐ Horse Stable Fittings.
☐ Hay Tools. ☐ Stalls & Stanchions. ☐ Barn & Garage Door Hangers.

I expect to build new barns about .....I expect to equip present barns about .....
I keep ..... cows, ... horses, ... pigs. .....
I prefer to deal through ..... at .....
My Name ..... P. O. ..... Pro. .....

41

Purity Pulverized Lime Rock

Acknowledged the best **FERTILIZER** by experts.

We are now booking orders for Spring Delivery.

Order early to avoid disappointment later, as the capacity of our Mill is limited.

Writ for Booklet.

GANDY & ALLISON

LIME MANUFACTURERS. ST. JOHN, N. B.

Try a carload of our Builders LUMP LIME, over 98½% Pure.

FARMERS FRIEND FENCING
FROM FACTORY to FARM

We Pay the Freight

Only one price. That's net to you, delivered at your nearest railway station. No question about freight rates—we pay them, you save for yourself all intermediate profits—only two profits left—one—a big one—for you—a small one for us. The right way to buy Fencing, is to tell us just the kind and the amount you need, and our price will cover it without any extras whatsoever. That is the safest and best way to buy. The

SARNIA

Fencing is explained in our "Fence Facts" giving fence information on construction or building the right way, also a lot of other things helpful to farmers — real Fence information of great value. Our purpose is to help you to save money. Ship the day the fence is made and your order received. Only a Post Card, that's all it costs to ascertain why in dealing with us you have every advantage. "Fence Facts" tells you all about it—saves posts too. You get a heavy open hearth wire, strong and serviceable, heavily galvanized, lasts longer and costs less.

The Sarnia Fence Co., Ltd.

Winnipeg Manitoba — Sarnia Ontario

FARMERS FRIEND FENCING
FROM FACTORY to FARM

FEEDING CATTLE IN NOVA SCOTIA

(Continued from page 569)

will not need much, or any grain if they are given an abundance of green feed, either from soiling crops, or from a good pasture. Cows giving over 30 lbs. daily will need some grain in order to keep the milk flow up to the maximum.

Another advantage gained from grain when the pastures are rather short is the better condition in which the cow goes into the barn in the fall. This enables her to do better work during the winter and even during the whole of the next period of lactation. A cow that is allowed to get very thin and freshens in that condition, will never give as much milk as if she had freshened in good condition.

In the College barn the cows are not fed in the morning until after they are milked, then they are given half the grain and turnips allowed in the ration for the day. When this is eaten up they are given all the hay they will eat up clean. If they are getting silage instead of turnips it is given first after milking with the grain scattered on top. After this morning feed they are not fed again until after they are milked in the afternoon. Milking begins about 4.30 p. m., and they have all their feed before them by 6 o'clock. Cows that are milked 3 times daily are given grain 3 times. By this method of feeding, the cows get all they can eat twice daily and are left in quietness the rest of the time.

Especial care should be given the cows at calving time. They should have at least six week's rest from the time of drying off until freshening again. The grain ration should not be stopped at this time. They need about the same amount (say 6 to 8 lbs.) and about the same mixture as they would receive if they were giving 25 lbs. of milk. This gets them in shape for the work of the next lactation period and is feed wisely used.

About ten days before freshening they should be given succulent food as far as possible. The only grain that it is wise to feed at this time is wheat bran. This can be fed in liberal amounts right up to calving time. The bran is loosening and cooling in its effects upon the system, and prepares the cow for the dropping of her calf. Furthermore, wheat bran contains a large amount of ash, and other material that is good for the developing calf.

At calving time the cow should be placed in a comfortable well bedded box stall. As soon as the calf is born the cow should be given all the warm water she will drink. This will help to keep her from having a chill, and make it much more likely that the afterbirth will be properly expelled. The box stall should be furnished with plenty of fresh dry bedding after the calf has arrived and the cow and calf not left in wet cold quarters.

The cow should be fed wheat bran for the first few days after calving and not much heavy grain given until the swelling, or cakeing is pretty well out of the udder. A large amount of cakeing is not harmful if the cow is not overfed until it subsides. In fact a much swollen udder indicates a good milker and is a welcome sight to the observant dairyman. The swelling may extend along the underside of the belly without indicating anything wrong.

In feeding the Dairy Calf the first food given should consist of the mother's milk. If the cow is a heavy milker the calf may easily get too much if allowed to suck all it wants. Light feeding for the first week or two should be the invariable rule. It may be allowed to suck for a day or two, or until the milk is good for use, at the end of four or five days. After that it should be fed from the pail preferably three times daily until it is two weeks old. A small amount at each feed is the rule, not more than a quart at a time fo rthe first ten days. After that, part skim milk may be substituted for whole milk, and by the time it is three weeks old all skim milk may be given.

At this time some fine hay and grain should be given in addition to the skim milk. A little fine mixed hay should be put in a rack fresh every day, where the calf can reach it easily. A grain mixture should be made up of equal parts of bran, middlings, ground oats and one quarter part of oil meal. A small handful of this mixture may be given daily until the calf learns to eat it with relish. The meal should be put in a box dry after the calf has had its milk, as it will be masticated better and be more useful to the calf if it is fed dry. Great care should be taken to keep the feed box clean and fresh, also all pails used in feeding should be cleaned thoroughly every day. The amount of grain fed may be increased gradually until by the time the calf is three months old it is getting some two pounds or more of the mixture per day. The skim milk may be increased to eight quarts per day given in two feeds.

The importance of feeding calves liberally the first year cannot be too strongly emphasized. If the calf is not fed enough to make it grow well the first year it will always be under sized. It is a better practise to feed some grain the first year and none the second than to feed none the first year and attempt to make it up by feeding heavily the second year. More returns in growth will be obtained by feeding grain to th animal when it is young than at any other time.

PROVINCIAL POULTRY SHOW AWARRDS

(Continued from page 573)

Dresed Poultry: Bertrand Goodspeed, 1st.

Special Prizes

Cup donated by Mr. A. C. McCullock, poultry superintendent, for largest and best display of Utility B. P. Rocks: Won by Hugh McMonagle.

Silver, cup donated by Mr. James S. Neill, honorary vice-president of the York County Poultry Association, for the largest and best display of exhibition Plymouth Rocks, Wyandottes or Rhode Island Reds: Won by P. L. Morgan, North Devon.

Gent's Club Bag, donated by C. H. Thomas & Co., for the best cockerel in the Mediterranean classes: Won by Odbur James, Moncton.

Pair of Hartt Shoes, donated by the Hartt Boot & Shoe Co., Fredericton, for the best male bird: Won by P. L. Morgan.

Pair of Palmer's Oil Tanned Shoepacks, donated by the John Palmer Co. Ltd., for the best female bird: Won by P. L. Morgan.

Bron e medal, donated by the Canadian Poultry Review, Toronto, Ont., for the best pen of birds at the show: Won by P. L. Morgan, North Devon.

Setting of Ancona eggs, donated by J. W. Stickles for the best display of Anconas: Won by J. W. Stickles.

Twenty-five pounds of bone meal, donated by Morgan & Co., for the best pen of Anconas: Won by J. W. Stickles.

White Leghorn cockerel, donated by J. N. Ferguson for the best White Leghorn cockerel failing to win a prize: Won by A. D. Gunter.

Setting of Owen Farm Rhode Island Reds for the best male S. C. Rhode Island Red shown by a new exhibitor: Won by F. D. Dibb, Fredericton.

Setting of exhibition Plymouth Rocks, donated by John E. Page, for the best display of exhibition B. P. Rocks by an amateur breeder: Won by W. H. Allen.

Packages of Pratt's Poultry Remedies, donated by the Pratt Food C., Toronto, were won by the following: J. N. Ferguson, W. S. Bailey, Fredericton; James W. Stickles, North Devon; Watson Lutz, Moncton; Mary Stickles.

$1000 MAPLE SYRUP PRIZE CONTEST

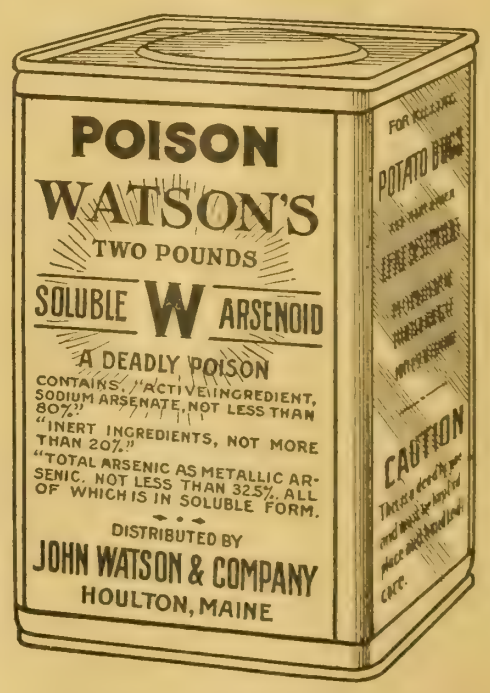
FOR MAPLE SYRUP AND SUGAR

Every maker of Maple goods in Eastern Canada should be interested in this remarkable contest. It will help all makers of Sugars and Syrup on the Grimm Champion Evaporator to have an expert opinion of their goods, whether they win a prize or not. The GRIMM CHAMPION OUTFIT is built with one idea—the best syrup and Sugar at the least cost. Start wtih good, clean sap and the Grimm Champion does the rest. Put a Champion in your grove as early as possible. We can give you the right size at the right price. Write

GRIMM CHAMPION OUTFIT

THE GRIMM MANUFACTURING CO., LIMITED
45 Wellington Street, Montreal, Que.

WATSON'S SOLUBLE ARSENOID


POISON
WATSON'S
TWO POUNDS
SOLUBLE W ARSENOID
A DEADLY POISON
CONTAINS: "ACTIVE INGREDIENT, SODIUM ARSENATE, NOT LESS THAN 80%"
"INERT INGREDIENTS, NOT MORE THAN 20%"
"TOTAL ARSENIC AS METALLIC ARSENIC, NOT LESS THAN 32.5%. ALL OF WHICH IS IN SOLUBLE FORM."
DISTRIBUTED BY
JOHN WATSON & COMPANY
HOULTON, MAINE
FOR POTATO BUGS
CAUTION

One pound does the work of two of Paris Green, and does it better. It's first cost is far less than Paris Green. WATSON'S SOLUBLE ARSENOID is now recognized to be far the most efficient insecticide for killing potato bugs and other leaf eating insects.

It must be used with bordeaux mixture, and not otherwise. It is very adhesive and does not wash off easily.

FREE OF DUTY except the war tax.

On July 22, 1918, the Canadian Customs at Ottawa issued an order removing the duty on WATSON'S SOLUBLE ARSENOID except the war tax, and this order applies only to WATSON'S SOLUBLE ARSENOID, manufactured by John Watson and Company, Houlton, Maine. This endorsement speaks for itself.

WATSON'S SOLUBLE ARSENOID has been on the market for a number of years and is used almost exclusively in Aroostook County. If your dealer cannot supply you, write us direct, and give us the name of your dealer.

JOHN WATSON AND COMPANY,
HOULTON, MAINE, U. S. A.

Neales, Hartland; Evo Poiried, St. Louis.

Four ribbons offered by the White Wyandotte Club for the best cock, hen, cockerel and pullet were won by P. L. Morgan.

Four ribbons offered by the Buff Wyandotte Club were won by W. S. Swetnam, Moncton.

Gold Medals for Brown Legohrns, donated by the American S. C. Brown Leghorn Club, were won by Hugh McMonagle (2) and Rudolph I. Wilson.

Five one-pound packages of Red Rose Tea, donated by T.H. Estabrooks Ltd., of St. John, were won by J. N. Ferguson.

Silver cups, open for competition to members of the Westmorland Poultry and Pet Stock Association were won as follows

Riley silver cup for best cock, hen, cockerel and pullet, any variety Leghor, except S. C. White: Won by Hugh McMonagle for the second time.

Dominion Poultry Guide Silver Cup for the best cock, hen cockerel and pullet, S. C. Rhode Island Red: Won by W. S. Bailey, Fredericton, for the second time.

The Maritime Poultry Supply Co.'s silver cup for best pair of Cochin bantams: Won by C. H. Smythe, of Moncton, for the third time.

Reed & Co.'s silver cup for the best cock, hen, cockerel and pullet, S. C. White Leghorns: Won by J. N. Ferguson, Fredericton, for the second time.

National White Wyandotte cup for best cock, hen, cockerel and pullet: Won by P. L. Morgan, North Devon.

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HOLDING THE ROAD

It is often said that a car "holds the road well," but the meaning of this phrase seems never to have been exactly defined, so that it does not convey the same ideas to everyone. Probably it usually means that the wheels of the car remain in constant contact with the road surface, that is, that they do not bounce, but sometimes it means that they remain in constant contact with the road in the direction of travel, that is, that they neither bounce nor slip. Perhaps the chief cause of the wheels boucing away from road contact is the inertia of the wheels, axles and other unsprung parts of the cas which is a matter of their weight. A weightless running gear would follow road irregularities perfectly. For this reason, the lighter double-chain driven rear end has been preferred by race drivers rather than the heavier gear-driven system. Another cause of bouncing is the failure of the tires to flatten and absorb the smaller road irregularities and this accounts for the fact that a car with hard tires doesn't hold the road well. The action of the springs so far as it interferes with the wheels following road irregularities, conduces to boucing. Extreme reduction of the load, below that which it is designed to carry, aggravates the bouncing tendency and reduces a car's ability to hold the road well. A very low hung car, one posessing a very loy center of gravity, is supposed to hold the road especially well, but it is not plain why this should be the case although such a car is obviously more free from body sway an dthe liability of overturning.

One Clutch Acts Violently

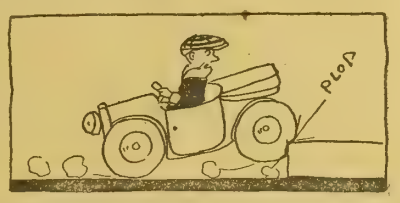
D. W. Asks: What makes the clutch of my car work jerkily, although I release he pedal as gently as I can? This is a cone clutch and until lately it would start the car gently, but of late its action has been growing worse.

Answer: Many con clutches have springs acting between the clutch member and the lining to force the latter outwardly, and ithese are not acting properly, the clutch is likely to engage fully with the lightest contact and "grab" violently. If the lining is of asbestos material and has become roughened up, the same effect may be produced. If it is of leather, it may have become hard and unpliiable, in which case it will give trouble. A dressing of neatsfoot oil will sometimes improve a leather lining unless it has been worn too th in or is badly burned.

Should This Tire Be Repaired?

C. R. D. writes: I backed my car at quite a speed, into a stone curb on a dark night recently. Fortunately the only damage was the bursting of one of the rear tires. Will it pay to have this tire repaired or is it ruined?

Answer: If this tire was practicly a new one, as to length of service and was in good condition up to the time of the accident, with a reasonable expectation of its delivering a

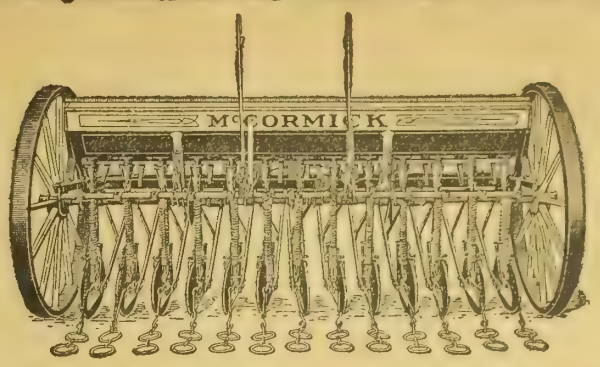


substantial mileage, we should advise you to have it repaired by vulcanizing in a new section to take the place of the damaged part. If, on the contrary, it was an old one and had delivered a large parts of its expected service, we should advise your discarding it. You should credit it with having saved its wheel from destruction. Any fair-minded tire repairman can tell you what to do with this tire better than we can.

Starting Fluids

C. J. H. writes: I have considerable trouble starting my engine on cold mornings. Can you tell me anything as to the merits of the "starting flids," which have been placed upon the market?

Answer: We imagine that they are all right as it is a very easy matter to put up high test gasoline or sell the product under this name.



Buy a McCormick Drill

BECAUSE drill-planted seed gets an earlier, more even start — because drill planting saves seed and produces a better grade of grain — because drill planting saves time and work — and because the **McCormick** drill is one from which you get all these advantages, buy a **McCormick** drill.

The **McCormick** comes in single disk and hoe styles, 11 and 13 marker sizes. All have the famous double-run feed which handles accurately both large grain and small, from peas and beans down to flax, planting any desired quantity per acre, planting it evenly, and covering it to just the right depth. Your crop could not get a better start than the one given to it by a **McCormick** drill.

See the **McCormick** local dealer when you are ready to buy. He will show you all the details of construction that put the **McCormick** drill at the head of its class. Or, if you write the nearest branch house below, we will send you full information.

International Harvester Company of Canada, Limited

BRANCH HOUSES

WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

Started With $500 Now Has $35,000

It is related that a Massachusetts man starting in 1903 with only $500, has by systematic saving and compounding interest and dividends, built up an investment of $35,000. Wherein does this man differ from the ordinary individual? What do you think is the underlynig secret of his success? And do you think he is gifted with more than the average brains?

Is not the success which has smiled on him due almost, if not entirely, to that one feature: Systematic Saving?

That is the kind of saving that counts.

That is the kind of saving that gives power.

That is the kind of saving that brings independence.

But such saving requires a plan, a definite, capable plan.

Such a plan as we can offer you (a post card will bring it) at any time.

Real Systematic Investment provided it is in good bonds and stocks is our specialty.

Write us your requirements and we will send you the plan which will set you on the high road to financial independence.

J. M. ROBINSON & SONS

Established 1889

Montreal, P. Q. St. John, N. B.

Members Montreal Stock Exchange.

SOME OF THE PROBLEMS WHICH CO-OPERATION HAS NOT SOLVED

(Continued from page 591)

Some companies enact stringent by-laws against disloyalty, carrying with them heavy penalties, but as a rule these penalities are never imposed, the company depending upon self-interest and moral ties to keep its members together.

Co-operation has been thus far no more successful than other organizations in dealing with the human element.

Such are sme of the problems which has shown co-operation its limitations. Such limitation are, of course, no argument aganist co-operaton, nor are they yet a probability of its downfall, but recognized they serve a useful purpose in calling attention to the sphere within which the varied activities of the movement may most profitably be conducted.

DAIRY SHOW AND ORGANIZATION MEETING

The attention of New Brunswick Dairymen is called to a meeting which will be held in the Agricultural Build-in, Sussex, on March 7th.

Delegates representing the cheese factory patrons, creamery patrons, chese factory and creamery owners, cheese makers, butter makers, milk and cream shippers and wholesalers are expected to be present and an effort will be made to effect such an organization of the various branches of the Dairy industry as will be thoroughly represetnative.

The exhibit of cheese representing the August and September makes from 20 different factories will be a feature of the gathering. These will be scored by Mr. Geo. H. Barr of the Dairy Division, Ottawa, and the prize money provided by the local department divided pro rata first and second grade cheese. In addition several prizes have been made available through the kindness of several cheese dealers and other individuals.

Questions of importance to the trade will be discussed and action taken thereon. Among these may be mentioned: Co-operative purchase of supplies, improvement in methods of selling, new standards for grading cheese, representation on National Dairy Council and Dairy Herd Competitions.

A cordial invitation is extended to all interested who possibly can do so, to attend, whether delegates or not. The morning session will open at 10 o'clock when the result of the cheese scores will be announced. Afternoon will be given over to discussion of various topics and organization.

THANKS THE C. N. R. OPERATING STAFF

Chairman of Imperial Munitions Board Appreciates Good Work in Connection with Special Traffic Movements

Writing to Mr. F. P. Brady, General Manager of the Canadian National Railways, Eastern Lines, Sir Joseph Flavelle, Chairman of the Imperial Munitions Board at Ottawa, expressed himself as follows:—

"The work of the Imperial Munitions Board at Ottawa is complete. With the exception of a few officers of the Records Department who will remain here, the members of the staff necessary for the completion of the liquidation of our assets, will move to Toronto.

Before leaving Ottawa, I desire to express my great appreciation of the assistance given the Board by the entire operating staff of the Intercolonial Railway. You will readily understand that many times during the last three years we have asked officers of the Company to give special consideration to the movement of traffic, and in all cases we have met with generous response."

This is an acknowledgement from Mr. Flavelle of the excellent work done by the Canadian Government Railways in the matter of traffic movements during the most trying periods of war time, when special attention was given to overseas munition shipments.

Potato Spraying

Changed from a Big Job to a Small One

PROPER spraying may save you the cost of acres of potatoes this year. Our sprayers cut down both work and time, leaving you not a reason in the world for taking a chance on bugs and blight. It turns this big job into a little one and leaves you extra time for other things and for spraying oftener. You can have time to spray *to prevent* bugs and early and late blight.

O-K SPRA

Here is without a doubt the surest, most convenient and most durable hand sprayer ever invented. It is equipped with the "Efficiency" non-clog nozzle, which has a thimble-shaped strainer, and will keep in action longer without attention than any other type. Its shape prevents clogging.

Take a look at the curved lance. (See picture.) It saves many a backache! It lets you get the nozzle under the leaves without bending your back.

The non-clog nozzle and curved lance enable you to use the O-K Spra for trees, shrubs, vines, bushes, or for disinfecting barns and hen coops, or for applying oils and washes to stock. Certainly no farmer could be persuaded to give up its use once he has had this all around handy and effective sprayer in use.

O-K Canadian 2-row Sprayer

For small acreages it certainly is a surprising time saver. It does the work as fast as you could run a wheelbarrow over your crop. It is used like a wheelbarrow and is just as easy to operate between rows. If need be a horse can be used for heavy ground. It sprays two rows at a time and there is no stopping for adjustments once it is set for width of rows. It throws out a fine plentiful mist that reaches every fold or surface on the plants, two rows at once. The discharge pipe can be detached for spraying trees, etc. and may be adjusted instantly for both height and width of rows. Tank holds 10 gallons. Write for full particulars.

O-K Canadian 2-row Sprayer

O-K Canadian 4-row Sprayer

Think of spraying an acre of potatoes in twenty minutes! It works like a charm even on heaviest land, spraying efficiently four rows at a time. One horse pulls it easily and the driver can watch every operation. There is easy access to all controls. Write for booklet.

Time is Precious

If you leave off buying until your busy time you might put it off again—and lose far more than the cost of the machine. Write us for free literature with full descriptions and valuable information about bug poisons, fungicides, etc. Let us tell you how you can do your spraying in quick time and how to mix spraying materials.

Canadian Potato Machinery Co., Ltd., Galt, Ont.

MAKERS OF THE FAMOUS O-K POTATO PLANTERS AND DIGGERS

Street No.

A BOOK ON BARN BUILDING

If you are thinking of building a new barn or remodelling your present one, you cannot do better than write Beatty Bros. Limited, for a copy of their 352 page "Barn Book". It will not only help you now, but act as a book of reference for your future problems.

How to lay out your stable; how to ventilate and light it; how to lay cement floors and the amount of material required; how to frame the barn; the comparative advantages of plank frame and solid timber; the best designs for cow stables, horse stables, and hog pens; silos and how to build them; these, and practically any other points which may be perplexing you, are covered in this well illustrated, carefully written book. It would pay any farmer well, to write to Beatty Bros. Limited, for a copy. It is free to any farmer intending to build or remodel.

CHEAP HOUSING AND LABOR SAVING IN THE WINTER FATTENING OF SWINE

(Experimental Farms Note)

One of the most common losses in conection with winter swine management is due to crippling or rheumatism. That this malady easy to contract and difficult to overcome, may be practical eliminater, or rather, prevented, in breeding stock, wintered out-of-doors with open shelters, has been demonstrated without doubt. No ill effect has croped up to offset this advantage. With several individuals in a small, well-bedded cabin, there is no apparent discomfort to the inmates even during the most rigorous months of the Canadian winter.

The fattening hog, heavily fed, required to make maximum gains in minimum time, would seem to require warm quarters. The energy required to offset cold would thereby be utilized for growth and fat production. Less feed would be required. While the latter premise proves true, the fact of the matter is that the swine feeder is confronted with the choice of two apparent evils,—a com-

paratively cold house, that because of its nature, is practically like out-doors and there foredry, or a more expensive, tightly-built, warmer structure, that, even if ventilated, usually proves more or les damp. Cripplings in hogs will appear to a greater or lesser degree under bod or good management. Damp quarters undoubtedly predispose to it. Add to this, heavy feeding, with occasional over-feeding, and the result is frequently that of several more or less cripled pigs, the whole or partial losses from which will seriously affect the winter's profits. On the other hand it has now been pretty well proven at several points in the Experimental Farm System that such losses from outdoor-fattened hogs are practically negligible and that the evidence of thrift and quality resultant, very greatly over balances the extra cost of outdoor feeding. Cold air in itself should have no virtue. Nevertheless, the open-air hog is more vigorous and healthy than the one fed in warm, dry quarters. Constantly pure air and a certain amount of exercise would seem to be responsible.

Very little capital need, then, be tied up in winter swine feeding quarters. A low sleeping berth made of old boards and covered with straw within or near a shed for feeding purposes, is necessary. While a straw stack is frequently used for shelter, the above arrangement is better. Access to a pile of horse manure in the shed will provide a certain amount of food and exercise and a very considerable amount of recreation for the hogs. Such an arrangement, as discussed, provides a dry, comfortable bed, a difficult acquisition in the fairly expensive building.

The use of the self-feeder during winter has also proven a success. The feeder or feeders must be protected by a shed, as suggested. There is no trouble from frozen troughs and the general inconvenience and waste of slop-feeding in winter. Much disagreeable labor in cold is avoided; in fact, the man who has used the self-feeder for winter work finds it even more of a convenience than it proves in summer. As to grains and cost-to-produce, tests have proven it usually superior to the hand-feeding method. Whole, cracked, or ground corn, ground barley or barley and oats may be fed. Shorts, bran, recleaned screenings, etc., may be mixed with the above, or following the American plan, fed separately in compartments. Where corn enters heavily into the ration, tankage should be fed in a compartment by itself. Charcoal, woodashes, slaked lime, salt, etc., or a mixture of these should be available. If nothing better, supply plenty of ashes, both coal and wood. Where dairy by-products are not available, water, preferably slightly warmed, must be supplied. Some form of watering device including a tank heater, home-made, or purchased, will prove useful where many hogs are kept. A rough rack along one side of the shed near the trough or feeder should be kept filled with well-cured clover or alfalfa hay. Enough of it will be eaten to help balance the meal ration, supply necessary and palatable roughage and materialy reduce costs.

CLEAN UP FARM TOOLS WHEN NOT IN USE

During the rush of fall work it frequently becomes necessary temporarily to lay aside tools used in connection with field work, awaiting a slack time to properly shed them for winter. I know how great the tendency is to let them stand out in the fields or in the barnyard well onto winter, and even if they are under shelter they are not fit condition for winter storing.

The disk harrow is covered with dirt and mud. If left in this condition it will colect a deal of rust and hours of work in the spring will be required before the disks will scour properly. Two hours of time spent in scraping and oiling the disks will be amply repaid in time saved in the spring. Have you had the disks on your harrow sharpened recently? It is but a short task to remove them and costs but little to have them sharpened. Do it yourself if you have an emery wheel. This not only makes the harrow more efficient, but very materially reduces wear and tear on bearings and frame. Don't neglect this important little thing.

THE GARDEN SEEDS

It is none too soon to begin to think of guying garden seeds. Last year there was a shortage of a good many kinds of seeds. Wo do not know how the supply is this year but it is always safe to order them early to insure getting what is wanted. Send to all the seed dealers and get their catalogues and study them this winter weather. Plan the garden now and try to have a better one than ever before. It is important to have good seeds and to get them aarly.

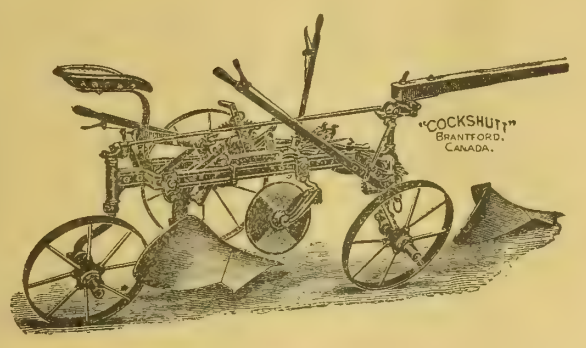
Don't mistake habit for character. Men with the most character have the fewest habits.

SEED CATALOGUES

February and March are the months when definite garden work begins. The garden plans may be gone over carefully and seed purchased for the summer's use. One of the best helps in this work are the seed catalogs. These vary in size and make-up. Nearly all contain good cultural information as well as a description of varieties. It is a good plan to send for a number of the better catalogs and study them carefully during the winter evenings.

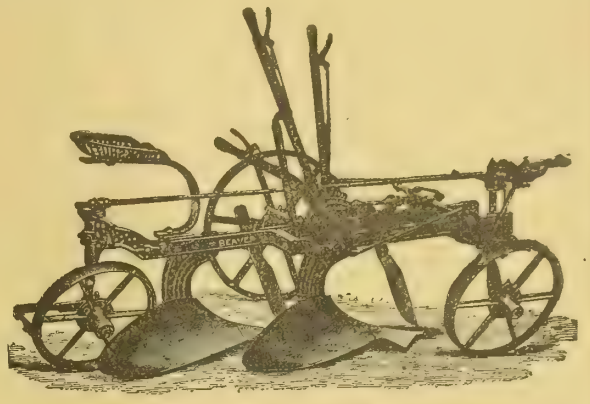
GOOD FARMING STARTS WITH GOOD PLOWING

The farmer who wants to get his plowing done quicker, easier and generally better than with the Walking Plow will find exactly what he needs in one of these two very popular Cockshutt Plows. They are famous for light draft, experienced design and high grade materials.



"FOOTLIFT" SULKY PLOW

No need to "favor" this Plow—put it at your toughest field and see how even an inexperienced worker will turn up nice, even furrows all day long. The Footlift feature is very convenient, raising or lowering the bottom by simple foot presure only. Immensely strong yet light in draft through high grade bearings and sensible design.



"BEAVER" GANG PLOW

Many years of splendid satisfaction is the report from hundreds of owners of this famous Plow. Very convenient levers control all its workings and when once set and started it's a real pleasure to watch the smooth uniform furrows it makes. Very valuable for thorough plowing in rough uneven ground. Strong, rigid, won't pull out of shape, yet very light in draft.

Write our nearest Branch for Catalogue and talk over any Implement requirement with the nearest Frost & Wood Agent. His Knowledge and suggestions will be valuable to you.

The Frost & Wood Company, Limited

TRURO ST. JOHN, N. B. CHARLOTTETOWN

Every Up-to-Date Farmer Uses

GROUND LIMESTONE

☞See Prof. Blair's Article in Maritime Farmer of February 4th showing results obtained from GROUND LIMESTONE made from our famous Shell Limestone.

Write us for further particulars.

EASTERN LIME COMPANY,

WINDSOR, Nova Scotia

FERTILIZERS FOR 1919

We Supply Fertilizers for Every Crop and for Every Soil

Making two blades grow where only one grew before. By using Shur-Gain Fertilizers, you can increase your yields without additional land, labor, or seed.

For information and prices

Gunns LIMITED. ST. JOHN, N.B.

We would suggest the importance of an early order—it will give you the benefit of present prices and insure delivery.

Potato growers have denomstrated that commercial fertilizers scientifically used will yield a splendid profit.

We have just the grade that you require for your soil and can give you much valuable information.

We specialize on potato fertilizers and can fill your wants at prices that are worth investigating.

GUNNS LIMITED, 676 Main St., St. John, N. B.

Short Course for Farmers, Their Wives, Sons and Daughters

—AT THE—

College of Agriculture, Truro, March 5--13

Instruction for men in all branches of Agriculture, Horticulture, Veterinary Science, and also Gas Engines, Farm Tractors, etc., and for women in Household Science, Gardening, Dairying, Poultry, etc.

ADDITIONAL FEATURES

Colchester County Seed Fair to be held at College March 11th.

Nova Scotia Farmers' Association to meet at Truro, March 12--14.

Tuition free to students from all Maritime Provinces.

For further particulars write

M. CUMMING,
Principal, Truro.

NOTE.---Buy Regular Return Tickets. Railways will not grant special rates.

OUR AUTOMOBILE DEPARTMENT

supplies Maritime Farmer Subscribers at prices which will save you many dollars.

¶It costs one dollar to become a yearly subscriber to the Maritime Farmer.

¶On one Non-skid Tire, 3 1-2x30, we save you four dollars. We sell for $19.00 F.O.B. Sussex.

¶Smooth Tires can be had for $16.25 F.O.B. Sussex.

¶All Tires are guaranteed for 3500 miles. They are particularly well made by a firm of repute.

THE MARITIME FARMER SUSSEX, N. B.

SPARK PLUGS AT A BIG DISCOUNT

Trade Price	$1.25,	Our Price	$	.90
" "	1.35,	" "		.95
" "	1.50,	" "		1.00

¶Every Spark Plug handled by us comes from a firm of repute. We can supply any make of car.

AUTO NOVELTIES

¶MIRACLE OIL—Mix one ounce with every five gallons of gasoline. Prevents carbohizing and gives you greater mileage per gallon. It is a Miracle Oil. One quart $2.50.

¶Tire Patches—become part of your tubes.

Large	size, 100	patches	$1.75
Medium	" 75	"	1.25
Small	" 50	"	.60

Complete Painting Outfits

☞Read our Auto columns. They are edited by an expert, who will advise you FREE, just what you should do in case of trouble.

Even if you have been lucky and have had no troubles, you can learn much of interest which may save you time and money when trouble does come.

The Maritime Farmer is $1.00 per year

Address AUTO DEPT. MARITIME FARMER, SUSSEX, N. B.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

FOR SALE—A pure bred Shorthorn Bull, two years old. Apply FRANK EDWARDS, Lower Millstream, N. B.

FOR SALE—Pure abundance oats grown from Steele-Briggs seed, heavy bright sample, $1.10 per bushel. Bags free, F. O. B. Sussex.—PERCY LIVELY, Sussex, R. R. 1, N. B.

LADIES WANTED to do plain and light sewing at home, whole or spare time, good pay, work sent any distance, charges paid. Send stamp for particulars. NATIONAL MANUFACTURING, COMPANY, Montreal.

FOR SALE—One pure-bred Holstein Bull Calf, five months old. Two more two weeks old from good producing stock. W. G. CAMPBELL, Salisbury, N. B.

WANTED TO PURCHASE—Few cows from good milking strain (Holstein preferred) to freshen coming fall. Give full particulars and lowest cash price.—D. SMITH REID, 75 Charlotte Street, St. John, N. B.

FOR SALE—Jersey bull fit for service, suitable for societies. Second prize winner at Sherbrooke in class of fourteen. Dams record 653 lbs., also a prize winner. Sire second prize bull Ottawa, 1918, defeating prizewinners at National Ohio. SICCAWEI JERSEY FARM, North Hatley, Que.

Springbrook Farm Ayrshires !

PRESENT OFFERINGS: Four nice young Ayrshire bulls ranging in age from 12 to 18 months. These animals are exceptionally fine and in fact the best we have had to offer for some time.

McINTYRE BROS.
SUSSEX CORNER, - - N. B.

QUALITY BRAND
Rabbitry and Poultry Yards
Amherst, Nova Scotia
E. I. PEEL & SON, Proprietors

Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

Black Siberian Hares, the most profitable fur bearing animal living, price per pair..$25.00
Silver Siberians, price per pair..... 5.00
Belgians, price per pair 3 00
The above prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each. D. W. Young's stock, as good as money can buy.
White Leghorn 260 egg strain for hatching.....$2.00 per 15
White Leghorn, No. 1 exhibition stock for hatching.....$4.00 per 15

We Guarantee Safe Delivery. Terms Cash with Order

Farms Wanted !

The Department of Agriculture wishes to publish a more complete list of farms for sale during the coming winter. All persons having improved farms for sale are requested to communicate with

The Superintendent of Immigration
168 Prince William St., St. John, N. B.

FIRSHADE FARM
DUAL PURPOSE SHORTHORNS
Present Offering:—Two Bull Calves

No. 1.—Son of Daisy Lodge, R. O. P. 11,638 lbs. milk, 480 lbs. fat. This cow led the four-year-old class in the Canadian Record of Performance.

No. 2.—Son of Queen Charlotte. She as a two-year-old has a R. O. P. of 7224 lbs. milk, 316 lbs. fat. This cow stands eighth in milk and sixth in fat production in the two-year old class.

The sire of these calves is Nivelle, whose dam as a two-year-old has a R. O. P. of 5496 lbs. of milk, 240 lbs. fat in 295 days.

P. R. L. FAIRWEATHER, Rothesay, N.B

DAIRY COW SUPREME

Two facts stand out prominently as reasons for the increased production and use of milk. The first is that milk as purchased on the market usually supplies food material together with the growth-producing elements more economically than either meat or eggs. The second reason is that the dairy cow is the most economical producer of animtl food. One great law of food conservation is to turn inedible feeds into edible foods in the cheapest possible. The dairy cow will utilize the coarse materials inedible to humans —such as grass, corn stalks, hay, etc. —and will turn them into milk. Other farm animals also are converters of coarse roughage into edible foods, but are not so efficient as the dairy cow.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.
Barry P. Hill, Great Village, N. S.
T D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.
F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co.. N. B

Ayrshire Cattle
E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co,, N. S.
C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE PIGS
E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.
Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.
Craig Bros., Amherst, N. S.

Holsteins Hold All Championships

World's Record Price for Cattle—
Carnation King Sylvia....$106,000.00
World's Record for Butter, One Year—
Duchess Skylark Ormsby 1506.35 lbs.
World's Record for Milk, One Year—
Lutscke Vale Cornucopia 31246.9 lbs.
World's Record for Butter, Seven Days
Segis Fayne Johanna.....50.68 lbs.
World's Record for Milk, Seven Days—
May Echo Sylvia.....1005.8 lbs.
Canadian Record for Butter, One Year
Lady Pietje Canary's Jewel
1173.66 lbs.
Canadian Record for Milk, One Year—
Zarilda Clothilde 3rd DeKol
30467.0 lbs.

IF YOU CAN'T BUY A HERD, BUY A HEIFER.

Information from the Holstein-Friesian Association.

President, Dr. S. F. Tolmie, Victoria, B. C.
Secretary, W. A. Clemons, St. George, Ont.

BERKSHIRES FOR SALE

We have a choice lot of big lengthy sows bred for spring litters. Get in your orders now. First orders get the choice. We can spare a few bred sows, GOOD ONES.

J. R. SEMPLE & SON,
Valley View Farm, Truro, N. S.

THE KEYSTONE DEHORNER

The Department of Agriculture has found that dehorning cows adds to their milking value. The KEYSTONE DEHORNER is mentioned in the 1915 report (page 131) as the most effective instrument for the purpose. Write for booklet.
R. H. McKenna, 219 Robert St., Toronto.

FOR SALE !

Ayrshire bull calves, nine to twelve months. R. O. P. ancestors and best of breeding.

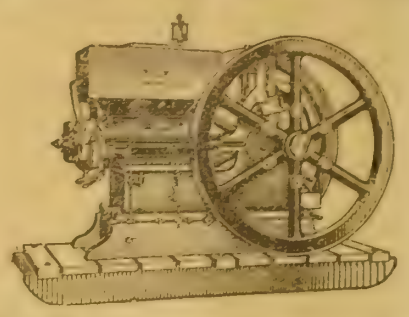
A A. H. MARGISON
EAST CENTREVILLE - - N. B.

Brantford Gasoline and Kerosene Engines

Stationary or Mounted

An Engine for Every Need

Kerosene Traction Engines



We Manufacture Complete lines of
Wind Mills, Grain Grinders, Wood Sawing Outfits, Pumps, Tanks, Water Boxes, Concrete Mixers, Power Spraying Outfits, etc.

Agents Wanted in Unrepresented Territory

GOOLD, SHAPELY & MUIR CO., LTD., BRANTFORD, ONT.
A. McCAUSLAND, Victoria Hotel, St. John, N. B., Maritime Representative

HALT! READ! THINK! WRITE!

If you didn't get satisfied at Fredericton cale with Ayrshires I can supply the following: Two Bulls, 15 months old. dam and granddam on both sides official tested for milk and butter fat. Females—a pair of three year old heifers, due to freshen before the end of the year. Something good. I will sell right, see if I won't; it only takes a stamp.

THOMAS J. HAWKINS
LONE PINE FARM STEWIACKE, COL. CO., N. S.

FOR SALE !

SHORTHORN CATTLE AND BERKSHIRE SWINE—Males and females, different ages. Several young cows freshening in early spring, also for sale. In Berkshires a litter just farrowed. Remember our Berkshires have length, size and quality. Intending purchasers please get in touch with us.

L. M. ANDERSON, Sackville, N. B.

Milking Shorthorns for Sale

We are offering some choice young Shorthorn bulls of the milking strain, ages 3 months to 15 months.

Also a limited supply of heifers, one and two years of age.

For particulars apply to

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett
Upper Sackville, - - - N. B.

BARRED PLYMOUTH ROCKS
WHITE WYANDOTTES
S. C. BROWN LEGHORNS
$3.00 Utility Cockerels $3.00

H. M. McMONAGLE
Box 652 - - Fredericton, N. B.

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,
AMHERST, - - - N. S.

SHORTHORNS

BULLS and HEIFERS FROM the CHAMPION HERD of QUE.

I have a choice lot of young bulls and aged bulls for sale. All show animals. Bred from Oak Buff Monarch No. 102905. The Champion of this province. This bull is for sale at $1600. I can spare a few heifers. Come or write your wants.

GEO. REG. MOONEY, Inverness, Que.

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

- A. N. GRIFFIN,
New Mines - - - N. S.

Advertise in the Farmer

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 24. SUSSEX, NEW BRUNSWICK, MARCH 18, 1919. Number 12.

Co-Operative Bull Associations

Joel G. Winkjer, in Hoard's Dairyman

"DeWitt is my name. My neighbors, when they get chummy, call me Do-it. I came over this morning for some information on a problem I have in running my farm. I have seen that much information is given out by the government, and when I came here and asked for information regarding the purchase of a pure-bred bull for my dairy herd, I was directed to you."

"Glad to meet you, Mr. Dewitt. Do-it is my middle name; therefore I have no doubt we shall get along nicely. Have a chair. How much of a farm have you, Mr. Dewitt, and what is your line of farming?"

"Well, now, let me tell you my story. I lived in the city, but quit my job, sold the house I owned, and bought a hundred-acre farm near the same place Tom Moore is from. You know Tom Moore, don't you?"

"Yes, know him well."

"I have gone into farming, and from my reading I came to the conclusion that in order to do general farming successfully it was necessary to include dairying. I started with two cows, and now have six. It is my plan to have ten or a dozen. I am now considering the purchase of a pure-bred bull and have come for advice. You see, up to this time I have used my neighbor's bulls. The first two years I went over to Bellew's Creek District for one. Almost five miles over there, and at that it was only a scrub bull. The next year I went across the hill to Dick George's Guernsey bull. He was nearer, and Dick had been told it was a thoroughbred. Dick could not use him any longer because he did not want to inbreed, and besides the bull showed signs of being ugly; and he was not going to get another one."

"Now, lately, a neighbor about two miles off has let me use his grade Holstein. This bull also showed signs of getting ugly and he sold him to the butcher. My cows are all grade cows. I would like to know if it would pay me to buy a pure-berd bull, and what can I buy one for?"

"These are puzzling questions, Mr. Dewitt. I know pure-bred bulls to have been given away, and there is also record of one being sold for $106,000. It is not uncommon to hear of bulls selling for $10,000."

"Ten thousand dollars! Why, my whole farm is not worth that much. If I bought one for that price I would have to sell my farm to raise the money, and I would have no farm to keep my bull on. I have no doubt I could raise such a bull, and also use the money that it sells for, but just now I havs only about $175 or $200 that I might put into a pure-bred bull if it is good business to do so."

"You say you have $200 to invest in a pure-bred bull. Now let us see what that means in your case. In addition to your first investment comes the cost of keep. What will it cost you to properly feed and care for a bull a year?"

"According to prevailing prices I could not do that for any less than $75 a year."

"You can keep your bull two years, then you have to dispose of him and buy another bull. That means that the cost of the bull and care for two years amounts to $350. The money you get for your bull when you sell him at the end of two years must be substracted from this. The question is, what will your bull sell for at the end of two years? If you have kept yearly production records of your cows you will be in a position to tell, when you get a similar record of the daughters, if your bull is any good. But here is the rub, it will take two years more before you can know the daughters' yearly production. It costs you $75 a year to keep a bull, so it is out of the question for you to keep him more than two years. You will have to sell him and the one who buys the bull doesn't know any more about him than you do, so the chances are you sell him for beef prices. He may be worth more than a thousand dollars but no one knows, and so it happens over and over again that you hear some dairy farmer refer to the good bull he once had, but when he tried to get him back he found the bull had been butcheerd. We are, therefore, up against the proposition of selling the bull for beef prices. What do you think he will sell for, Mr. Dewitt?"

"About $125."

"It has already cost you $350 to provide bull service. You get $125 out of this investment so your net outlay for two years' pure-bred bull service is $225, $112.50 per year, or $18.75 for each cow. It looks now as if neighbor Dick had some other reason than that bulls became ugly for not keeping another one. Yes, Mr. Dewitt, the farmer with a small herd has quite a big handicap placed on him. It would be quite different if you had sixty cows. The cost would then be only one-tenth, or $1.87 for each cow."

"Yes, but I do not have sixty cows, and, what is more, have no possible chance of getting that many."

"From what you say there are some neighbors of yours that have cows, possibly as many as sixty cows could be found among your neighbors. If those neighbors would agree to use one bull, pay their share in the purchase, and later the keep, you would then be about on the same basis as if you had sixty cows of your own."

"That is what you call a co-operative bull association, is it? I have heard of that kind of an organization."

"No, Mr. Dewitt, that is not a co-operative bull association. It is only a part of one. It requires at least two other such blocks. You see, we call each of those parts of an association a 'block.' Before you get a co-operative bull association with its benefits, you must have three of these blocks and it is better if you have five or six blocks."

"I do not suppose we can form such an association in our county but I would like to know more about them. I have found that I cannot ask too many questions regarding farming, even if it does not seem at first to be of any use to me. In order for us to form an association we would have to get Bellew's Creek neighborhood to buy a bull and a neighborhood in some other place to buy another, and then we would have a co-operative bull association, is that the idea?"

"Yes, and no; in a general way you have the idea but there must be built an organization according to plans that have been used in the most successful associations. Unless you make it right in all respects you may get in the same fix as a man who has all four wheels on his wagon but no burrs to hold on the wheels; when he starts to drive, the wheels go each in different directions, according to the rut they get into, and then there is trouble. Unless the organization is built right the chances are that something will go wrong.

"Experience has shown that trouble arises if each block buys its own bull. To avoid this trouble the association is first organized, a director is selected from each block, and these directors together transact the business of the association. One of their first duties is to buy bulls for all the blocks of the association. You can readily see the reason for this when I tell you that the bulls are kept in a block two years and then each moved into the next block where they are again kept two years. This is repeated as many times as there are blocks in the association until all blocks have, at some time, used all of the bulls. It is, therefore, necessary that these bulls be of the same line of breeding and as nearly as possible equal in value."

"You said that the bulls are changed from one block to another every two years. Does that mean that I get the use of another bull after two years without additional cost?"

"Yes, that is exactly what it means."

"Then is it also right that if we have four bulls—four blocks—I will have the use of a good, pure-bred bull for eight years without paying any more than the first payment and the keep of the bull after that?"

"Yes, your part of the keep of the bull."

"Then the following figures are right. Sixty cows in a block and a $200 bull for that block means that $3.33 1/3 per cow has to be paid. I have six cows and $2.00 would be my share.

"Yes, if you have sixty cows in a block. If you have less than sixty cows, of course the amount per cow would be higher. The average number of cows per block in all the associations in the United States is forty-eight. You would have to add to this the cost of keep of the bull. How much do you think that would be, Mr. Dewitt?"

"Why not charge the same as we did in the first place, $75 per year?"

"That is fair, $1.25 per cow for the sixty cows in your block. The cost of keep of the bull per cow for eight years will then be $10. The first cost when buying the bulls is $3.33 per cow, or a total of $13.33 per cow for eight years. That makes the total cost per cow each year, $1.66. Compare that with $18.75, the cost for the same service when you buy a bull alone."

"I am interested. Again I see it pays to stop, look, and listen. But it seems too good to be true. Is there not something about this organization that is not so desirable?"

"This organization is like a new machine that is to do things for you that you have been doing with your bare hands. There will surely be some difficulties with the machine that you did not have before. There are now forty-four associations in the United States that are glad to have the troubles of an association that they may have its benefits. It pays to go to a little trouble for a $10 value when you can buy it for $1.00.

"Great as this advantage is, there is at least one other advantage that is greater, and that is the opportunity to try out and discover the exceptional bulls, and when they are found, to use them to the greatest advantage. To the individual this is nearly always lost. This is shown in the case of Aggie Cornucopia Count 13th that Mr. John Puls of Wisconsin used. When he found out what he was worth he went out to buy him back and found that the butcher had bought him for $50 when in reality he was worth $5,000. This is like selling $100 for $1.00. Similar instances are more numerous than you would imagine.

"There are other advantages too, as for instance, the greater number of animals of one breed in a community, which is always an attraction to buyers. You do not use as much money in providing bulls in an association as for yourself. This leaves you with more money with which to buy a pure-bred cow. If a pure-bred cow is bought at the time you organize an association it will not be many years before you have a pure-bred herd. With the association in your neighborhood you can depend on the use of a pure-bred bull all the time. It is possible for a man with one cow in the neighborhood of this association to raise a pure-bred calf each year, and what is more the man with one cow will find, at attractive prices, a ready sale in his own locality for the pure-bred heifer calves he raises."

(Continued on page 690)

The Nova Scotia Farmers' Association

The twenty-third Annual Convention of the ova Scotia Farmer's Association held their opening meeting Wednesday at 7.30 p. m., in the Court House, Truro, N. S., which was large ly attended, the President, Samuel Freeman of Amherst occupying the chair.

Meeting opened with prayer offered by Prof. Trueman, invoking the blessing of Divine Providence on all the deliberations of the Convention while in session.

This was followed by a splendidly prepared address by the President. It was moved and seconded that this address be accepted and published in full

Gentlemen:—

The honor you conferred upon me last year in electing me your President, makes it my pleasant duty to welcome you here tonight, at the opening session of the 23rd Annual Convention of our Nova Scotia Farmers Association, in this the progressive town of Truro, the educational and Railway centre of the Province.

Since my first conenctions with the Association when Col. Spurr was president, some of the best men of the Province have passed through the chair. So I ask you to kindly overlook wherein I do not measure up to the standard set by former Presidents, and to aid in the careful despatch of the business that shall come before you, that this may be a harmonious and profitable session.

The year of 1918 was the most eventful one since that year from which our years date. Nations have been in the melting pot. We should give thanks to a Gracious God for the plentiful harvest of our own land and his protecting care of our people and their allies. The arm that extended to the world the mailed fist instead of the helping hand he has palsied. The enemy beat out his own life on our elastic battle front, until the hour struck and our line with sinues stiffened to a front of resistless steel moved forward to its objective triumphantly.

At this point I wish to quote a tribute to the mother country from a report of one of our financial institutions, it says "Unprepared—except as to that navy which by blockading Germany really won the war—she raised a vast army which, like none of the other armies, fought in all the widely separated areas of the conflict. For two years which we awaited the entry of the United States, she bore the heavy part of the whole war, lending money, supplying munitions, coal, food, sympathy and advice to her allies. In resourcefulness, invention, daring and unyielding courage, whether in the trenches, at sea, or especially in the air, she astonished her own children and she amazed that part of the world which has never understood her, unless it be now that the war is won. When the war began she had a debt of three and a half billions of dollars. If we deduct what she has lent to her allies, and certain other recoverable items, she will probably owe twenty-one billions of dollars at a rough estimate."

It is no small thing that in the greatest war of the ages that Canadian Troops were the spear head of the British Army in many a hard fought fight, and in it all our Nova Scotia boys have done their part bravely and well. We glory in their achievements, and sympathize with those whose loved ones have left an aching void and instead of a glad home coming with their comrades, have won the wooden cross on Flanders field or on some other battle front.

The resourcefulness of our people has been shown in the fact that before August 1914, no Canadian manufacturer had ever made a shell or a cartridge case or a fuse, but in the second half of 1917 we were producing 55% of the shrapnel shell, 42% of the 4.5 shells, 27% of the 6 inch, 15% of the 8 inch and 16% of the 9.2 inch shells used in the British armies. During the war we built 90 steamships, manufactured 81,000,000. pounds of Powder, 75,000,000. pounds of High explosives and 700 tons of Carbide was shipped monthly.

The war is practically over. The Peace Conference has the greatest questions to grapple with that ever confronted a humane tribunal. The Farmers are left in common with others with big problems to take care of, if we are to measure up to what we should.

During the four and a half years of stress and strain the Farmers of Nova Scotia (applause) bore their part of the nation's burden faithfully in the front lines of the battle, in the reserve lines of home production and in contributing to the call for funds. Now we must turn to the duties of Reconstruction that come to us after the war problems. The last year had its perplexities. Help has been scarce, fertilizer high and may I say poor. The Province has been overrun by a disease that has left many homes desolate. While our boys about whom we have been anxious, have been in the danger zone winning glory for themselves and honor for their country.

The season of 1918 was an unusual one. The winter cold and snow deep, from Dec. 2 to the last of March. Spring cold and dry, until nearly the middle of June. Seeding was late. Rain continued until August. Hay was an exceptionally light crop. Very little was cut until the second week in August. Haying and early harvest weather was fine but cool.

October was moist and mild, frost occurred with disastrous effects June 21, August 23-24, and September 12th. The season was favorable for the growth of turnips, potatoes and hardy grains, but not for such plants as corn, beans and buckwheat. Amature bean growers were generally disappointed.

With the exception of Potatoes which are becoming more expensive to raise owing to the pests and numerous ills that beset them, the price of farm produce was high, but not correspondingly high compared with what a farmer has to buy.

Owing to the light hay crop much beef has been put on the market during the winter immature and unfinished, for which the producer received small prices, and the growing stock of the country was reduced.

The apple crop was light, the quality was good and has been selling for record prices, as you may judge from the smile on the faces of our friends from the Valley.

No Provincial Exhibition was held at Halifax. No Winter Fair or Horse Show at Amherst in 1918. Most of the County Exhibitions and smaller Fairs were held, with a creditable showing for the exhibitors and much valuable information was dispensed, and inspiration enthused as neighbors met in the show ring in friendly emulation. The Sydney Exhibition has assumed large proportions. The Yarmouth, Shubenacadie and Bridgewater Fairs have come to be looked upon as assured successes, as have many of the smaller shows. An increased interest is being taken in plowing matches, which are being conducted in different counties, and are a means of much cheerful and honest rivalry among competitors, in the most useful of arts. Field competitions have been carried on successfully in many counties.

The College of Agriculture, with its efficient staff, has been shedding its rays of agricultural knowledge over the Province. Owing to the war the attendance was much reduced. The work of the Womens Institute has been carried on under the capable supervision of Miss Fraser.

The daylight saving scheme is not in the Farmers interest, but to our protest we heard nothing but the echoes of our own voices.

More preparation than ever before has been made for home grown seeds for the coming season. Much less seed grain than usual will be imported and no turnip seed need be, as this Province has seemingly become aware of its possibilities in producing this seed. The Government farm at Kentville produced 30,000 lbs. and the Experimental farm at Nappan 8,000 lbs. These were the 1st. and 3rd largest producers of this seed in Canada. Considerable quantities of mangles, beet, carrot, and other seeds were also produced. Last month a car of seeds valued at $48,000. was shipped to Ottawa, from the Government farms in this Province. The largest crop of turnip seed was about 1200 lbs. per acre and 1400 lbs. of mangel seed per acre. There is little doubt that clean climatized home grown seed will produce better results than imported seeds. The Yarmouth Fruit and Produce Co., George M. Peck, Wolfville, and Crockett Bros., Antigonish are prepared to supply farmers in their localities.

We are now in the Re-adjustment period, Building back to peace, and are facing conditions entirely different from any we have ever had in the past. For four and a half years men have been drawn from peaceful occupations to the army and to work on war orders. Almost instantaniously on the signing of the Armistice half a million men and women were released, this brings us face to face with social and industrial problems such as we have never seen.

Since the signing of the Armistice, the decline of prices began, it is evident that the farmers' products are the first and most to be effected. The ferilizer men, the hardware men and others whose wares have in some cases been 300% above their former prices, have decided that no decline in the price shall be effected this season, while farm produce has declined in some cases 50% and will further lessen, while what we buy must remain practically unchanged for a time.

Our farmers are not organized for their own protection. We should work more along the line that the Western and Ontario farmers have been following. The farmers of Nova Scotia must not be of that number "Who work only that they must eat, and eat only that they must work."

"A wide unbounded prospect lies before us."

So with prudent and due consideration let us here assembled consider what is in our best interest and with unbending effort seek to have it carried into effect. We must show greater confidence in each other than we have here-to-fore, not perhaps have greater confidence in each others integrity, but show it in practical cooperation. We are so apt to buy what is offered us for sale by dealers or their agents. Let us get together and consider what is best suited for us and our local conditions in feeds, seeds, fertilizers, spraying materials, implements or whatever we need, and procure it without the retinue of more middlemen than is necessary. In 1914 the local government passed an Act known as the "Co-operative farmers Act of 1914," whereby 15 or more bona fide farmers may organize for their mutual benefit in trade. The Government made provision for the appointment of an inspector, who being duly qualified, was to organize, assist, advise, collect and disseminate information, calculated to be of value to such societies. The appointment of such an inspector has never been asked for. This I trust will be considered at this session.

Our politics should not be our master but our servant and be intelligently directed.

The agricultural future of Eastern Canada is unseparatedly linked up with the live stock industry. The price of hay and roots are dependen on the supply and demand of a limited area, but the trade in live stock and live stock products has a broad horizon. The war has stimulated this. Our total live stock export in 1914 was $53,349,118.99 for the fiscal year ending March 31, 1918 $172,743,081. Our meat products have a good reputation on the over seas market.

We now have the opportunity to hold and develop this trade in live stock and live stock products with the war depleted countries of Europe. For this there must be cold storage and shipping facilities at some Atlantic Port, that is open the year around. in order to enable us to compete successfully with countries well equipped but at a much greater distance from that market. This matter has received some attention. The Secretary of Agriculture and others from this Province recently visited Ottawa to present our claim, and will we trust give us a favorable report. You will be intensely interested in this matter as one which vitally effects our future welfare. I trust no due influence will be idle that can be used to have a cold storage plant and abattoirs erected at Halifax. There is such a scarcity of cattle throughout Europe and the work of building up herds will be so slow that we may expect a good market for years to come. If the Government do their part let us endeavor to do ours in the production of more and better live stock and live stock products. To this end I trust you will give no quarter to the scrub sire or the man who wants to keep a flock of dogs instead of sheep. It should stimulate the sheep industry to know that Nova Scotia wool sold for the highest price of any wool on the market, and if as it is estimated the world supply will not be normal for six years, the opportunity is evident.

We have not as many head of cattle per 100 acres as the United States, only half as many as Great Britain and France and only one quarter as many as Holland and Denmark. We raise 3 hogs per hundred acres of cultivated land, the United States raises 8, Holland 10 and Denmark 22. The United States have 3 times as many sheep per 100 acres of cultivated land as we Canadians have, Holland 6 times, Argentina 7 times, Great Britain 26 and Australia 29 times.

Much work of an interesting and profitable character has been carried on at the Government farms here at Truro and at Kentville and the Experimental farm at Nappan. I will mention only one item in connection with this farm. Since August 1915 a 92 acer wood lot has been cleared of over 300,000 feet of lumber, and has been in field crops for two years. On this land all their turnip seed was raised last year. This work was all done by prisoners of war. Time prevents further mention of this work of the Government farms, from the reports of which I trust you all receive help.

In closing let me call your attention to our returned soldiers.

We owe them a debt we can never pay. Also to those who will come to Canada, where large areas, and great opportunities await them, those whose attention has been invited to our shores by the exploits of our soldier boys, and sealed with their blood. These people will come to us for moral, social and legislative teaching. We must take up the white man's burden and exert a wholesome influence over them. Let us be worthy of God's trust, for they are coming hundreds of thousands strong. Shall we disappoint them? No. For we have learned that the destiny of a Country depends not on its natural resources,

but on the character of its people.

SAMUEL FREEMAN,
President.
Amherst.

Prof. Cumming, who needs no introduction to the readers of the Maritime Farmer, gave a most interesting sketch of the history of the Agricultural movement in Nova Scotia, in a carefully prepared paper on "The Agricola Centenary."

Just one hundred years ago this forward movement in Agriculture was started by a series of letters which were printed in the Recorder Office, Halifax, under the name of Agricola, but whose real identity was unknown. The first letter was published July 15, 1818, in which Agricola deplored the little or no circulation of sentiment among farmers, so much ignorance and inactivity, and suggested Agricultural Societies as one means of lessening this condition, where the climate of N. S. had in many instances been made the excuse, be proved that industry not a propitious climate was all that was needed.

These letters were published at the end of the Napoleonic War, about three years had passed, the Treaty of Paris and Peace had arrived, also the depression which was bound to come after the artificial prosperity that had been existing.

Prof. Cumming drew attention to similarity of the conditions 100 years ago and now. These letters attracted great public attention, and as a result 25 Agricultural Societies were formed within one year from date of first letter.

Agricola urged the people to cultivate the soil and although clay, sand, lime and magnesia were all he knew of and on some points be would vary largely from methods now employed, in the main he was sound. He laid particular stress on Lime, proving how Scotland dated the prosperity of her farms to the use of Lime on her potatoes in 1745. He also educated them through his letters in the value of manure as cultivation, advocated the rotation of crops and the importation of farm implements. This was the beginning of the Agricultural movement in Nova Scotia, and the first Prov. Agricultural Society met at Halifax, April 1819, appointing Agricola Secretary.

Agricola, when he declared himself, proved to be John Young, a merchant in Hailfax, although originally coming from Scotland. He died in 1837. Up to the time of his death 125 Agricultural Societies had been organized, which number has now increased to 275. He did much to interest the people along agricultural lines, declaring it the only staple industry. All other efforts yielded to time, but the land remained unchanged and would accrue the only permanent riches.

Mr. Sedgewick spoke of the interesting address Prof. Cumming had given, speaking of Prof. Cumming as an able follower of Agricola. He also suggested these letters which are in the main so valuable should be reprinted.

The next on the programme was the address of welcome given by Mayor Coffin of Truro, in which he extended on behalf of the Council the freedom of the town to the Association, and assured them of the appreciation in which he held the work being done by the College and Association along agricultural lines.

Mr. McLean of Port Hood replied briefly in a few well chosen words to the address of welcome, and told of the appreciation of the county from which he came of the benefits which accrue from the intelligent instruction procurable now by the farmer along his special line of work.

Lieut. J. G. Robertson then addressed the meeting on "Soldier's Land Settlement" question.

Prof. Cumming introduced Lieut. Robertson as a former Pictou County boy, a graduate from McDonald College and one who had conducted a large farm in Saskatchewan, previous to taking up arms in the defence of his country. A young man well qualified for the position he now holds, as Superintendent of the Soldiers' Settlement Board for the Maritime Provinces.

Lieut. Robertson spoke of the tremendous problem of repatriation and reconstruction now facing Canada, and touched briefly on the rights and claims of the returned men, they who had risked that which is most precious to us all, surely are worthy to be treated generously and fairly.

He told of the Government organizing this Soldiers Settlement Board with Principal Black an acknowledged agricultural leader throughout Canada at the head of this movement, and of these branches being established in the Maritime Provinces, namely in Halifax, St. John and Charlotttown.

He explained how it was the wish of the government to assist as many qualified men as wish to settle on the land, but clearly stated that they do not encourage the inefficient or an inexperienced man to attempt to farm and burden himself with the loans entailed.

On the other hand Canada is anxious to keep these men in their own Provinces, and discourages the soldier to go West and take up land where in most cases the difficulties are so great, therefore they have established these Boards and after a returned man has made his application, and it is determined by the Committee that he is qualified to farm, assistance will be given him to buy, to stock, or to improve his farm, lending money to the extent of $5,000 at 5%, with twenty-five years in which to pay for his farm, if he puts up 10% of the purchase price. Will lend money up to $2,000 for the purchase of stock or equipment which will bear no interest the first two years, with 6 years to pay off his indebtedness. Then for those wishing to spend money for permanent improvements, the government will loan up to $1000 at 5% for 5 years. In the first case the soldier gets his title to land, when payments are finished. Or, if he wishes title aften ten years, government will give it and take a mortgage. In the case of loan for equipment, etc., the government protects itself by a chattel mortstock as he sees fit, but must always sock as he sees fit, but must always keep the original value of quantity of stock until the same is paid for.

In the case of a soldier not passing the Qualification Board, which examines him as to his capacity for making a success of farming, there are two methods employed to help him to so fit themselves for the life of a farmer if he earnestly desires it.

1st. The Settlement Board will secure them positions with practical farmers, giving them a chance to learn the rudiments of farming for an entire season, receiving such remuneration as their services warrant from the farmer. Then his case will be reconsidered, after he has shown his determination to succeed.

Another proposal is that he may take a 12 week's course in an Agricultural College, studying practical farm work and after that, 12 weeks with a practical farmer, government paying transportation at the rate of 1 cent per mile, board and lodging and free instruction, while taking the course. Lieut. Robertson wished to emphasize that the Government does not give away free farms, but wishes to give every assistance to the returned man who earnestly wishes to take up agriculture as a business.

Lieut. Robertson asked the co-operation of the Association and suggested that one practical way of helping would be for some of the Nova Scotia farmers to express their willingness to take on these men and assist them to get the best farms possible when purchasing. The Great War Veterans had petitioned the Prov. Government to lend all assistance to soldiers to secure best farms possible, taking over any farms where clear title could not be secured and putting a valuation on it. Possibly the Association would think fit to do likewise.

A short discussion followed Lieut. Robertson's interesting address, after which with the appointing of Mr. Munn of Leitches Creek and Mr. Manning Ells as Credential Committee, the meeting adjourned.

Thursday, 9 a. m.

Meeting opened with President in chair.

Report of Directors by the Secretary, Mr. Bryan, received and adopted. Report as follows:

Report of Directors

To Members of the Nova Scotia Farmers Association

Gentlemen:—

Your Directors welcome you delegates from the various Agricultural Societies, County Farmers Associations to this the Twenty-third Annual Convention of this Association.

On account of the Influenza epidemic it was thought best to postpone this meeting from January to this month, we have now assembled and trust we will have a profitable time. We regret the absence of some prominent speakers on the programme. It was thought at one time that the Hon. T. A. Crerar, Minister of Agriculture would be able to visit us, but later, he found business too pressing at Ottawa. Also Mr. E. C. Drury, Vice-President of the United Farmers of Ontario had agreed to come, he had to give up the trip on account of voice trouble, having been speaking so much lately up there. However, we have been able to place a programme before you and we can very profitably spend time in full discussion on subjects that will be brought up.

We are glad to see that scarcity of labor, increased cost of living and continued increase in railway fares, and without the benefit of the Standard Certificate plan for free return tickets have not lessened the attendance and interst in the Association.

First of all we must voice our thankfulness that the War is over and that the Allies have completely defeated the enemy. Canada did her bit, not only in the trenches, but in production to support those at the front, and there is plenty more to do before, if ever, we get settled down to normal times again. What we can do or should do we will hear from time to time, let us not weary in well doing, but continue in the wood work. The Reconstruction Period will need the full support of us all.

We regret that Mr. E. C. Drury was unable to attend this meeting for there is no doubt that the farmers of Nova Scotia should be more strongly organized, he would have stirred us up; What have we, compared to Ontario and the Western Provinces. This Province needs an organization similar to the ones out West. An organization non political, but Agriculturalists, strong, united, agressive, so that when necessity arises we can secure those things advantageous to the Province. A body capable of advising the Government and when they do so advise, the Government will Act, having full confidence in the judgment and earnestness of such body.

We would strongly recommend that this Association approve of the policy of the United Farmers of other Provinces in Canada.

The Provincial Exhibition as anticipated was not held and the County Exhibitions which were held were slimly attended, accounted for by the Influenza and in one case the Health Authorities would not let the Exhibition be held at all.

The Prospects for the re-opening of the Winter Fair at Amherst are good, dates having been set and things are progressing satisfactorily.

Your Directors considered the Daylight Saving Scheme and sent a letter of protest to Ottawa, but without results, the clock is to be set forward one hour at the end of this month.

We regret the recent death of one of our Directors, Mr. E. J. Johnson, and we purpose sending on behalf of the Association, a letter of condolence to the family.

The programme will furnish topics for discussion and resolutions will be presented, these we commend to your earnest and thoughtful consideration.

The Financial Statement is as follows:—a copy of which you have in your hands, this has been duly audited and found correct by your auditors, Messrs. Landry and Trueman.

Signed on behalf of the Directors,
President.
Secretary.

Nova Scotia Farmers Association
Balance Sheet 1918

Cr.

Balance, January 1st	$222.91
Government Grant	800.00
Delegates Fees	54.00
Membership Fees	8.50
Agri. Relief to Allies	57.50
	$1,142.91

Dr

Annual Meeting Expenses	$477.80
Secretary's Salary	150.00
Legislative Com. Exps.	43.80
Postage, Telegrams, etc.	9.23
Stationery & Printing	27.90
Agri. Relief to Allies	57.50
Bal. March 10, 1919	376.68
	$1,142.91

CHAS. R. B. BRYAN,
Secretary-Treasurer

Audited and found correct.
J. P. LANDRY,
J. M. TRUEMAN,

Appointment of Resolution Committee as follows:

C. H. Black, Amherst; R. J. Messenger, Lawrencetown and Rev. Dr. McPherson, Antigonish.

Mr. Sedgewick of Musquodoboit suggested that the government should be written concerning some fitting memorial to be placed to the memory of John Young, this being the Agricola Centenary and a fitting time to commemorate the memory of he who was responsible for the development of Agriculture in Nova Scotia.

Mr. O'Brien, Mr. Cox and Mr. Sedgewick were appointed a committee to bring this matter to hand.

Report of Exhibition Commission was then read and approved.

Mr. Foster reported the securing of the Managhan property, which together with the Cross property, which they had already procured, would make a much more desirable entrance to the Exhibition grounds in Halifax. It was fully agreed that permanent buildings of concrete or such like should be erected instead of the wooden buildings of heretofore, and the erecting of buildings to accommodate Provincial rather than Dominions was favored. Mr. O'Brien of Windsor thought the Association should place themselves on record as strongly endorsing the intention to again hold exhibitions in Halifax, as soon as possible.

The following resolution was then put before the meeting.

At a meeting of the Nova Scotia Farmers Association on March 13th, 1919, it was agreed to request the Dominion Government to embody in the Federal Statutes the provisions of the Order-in-Council prohibiting the manufacture, the importation, and the transportation of liquor.

It was further agreed to ask that this legislation be introduced, at an early date, as a Government measure.

This was strongly opposed by one of the members as being no concern of the Farmers Association, but it was gratifying to note how strongly the Association endorsed the Resolution, realizing that what was so necessary to the prosperity and efficiency of the country in times of trouble must be equally so in times of peace.

Mr. Fuller then gave a very concise and interesting report of the Agricultural Societies of Nova Scotia. Number of Agricultural Societies qualifying for the Government Grant, 271. Seventeen new Societies organized, 18 dropped out, one resusticated, leaving the same number as previous

(Continued on page 684)

THE MARITIME FARMER

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Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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DATES OF ISSUE

April 1-22
May 6-27
June 10-24

MARCH 18, 1919.

STABLE VENTILATION

It is a well-known fact that the good dairy cow is the hardest worked of all farm animals. All experiments, as well as practical experience, demonstrate this to be a fact. No other animai accomplishes so much by way of converting raw materials—such as grain and grasses—into the finished commodities—milk and butter-fat—for supplying food for mankind.

The dairy cow works day after day and year after year. If she is a desirable individual, she is very often kept in the dairy for 10 years or longer after she has reached her period of usefulness. To accomplish her purpose to the best advantage, she must be an animal of strong constitution. Other things being equal the cow with greatest indications of constitutional strength is considered most valuable, and, because she is well developed in this respect, a prospective buyer will pay more money for her. He realizes that to remain healthy, to work hard and persistently over a long period of time and to produce profitably, a cow must have large nostrils, she must be deep of chest and well sprung in the front ribs. If he analyzes why these essentials are necessary, he is brought to realize that one of the greatest factors conducive to health and productivity is oxygen.

One of the great functions of the cow is that of conveying digested nutrient from the digestive apparatus to the udder where they are made into milk and butter-fat. This process is accomplished by the blood which circulates between these two parts of the body, absorbing the nutrients at one point and depositing them at the other. To fulfill its mission, the blood must be frequently and thoroughly purified. Nothing except oxygen will do this. The only oxygen the cow finds available is in the air she breathes. The cow with small, closed nostrils, a shallow chest and a small heart girth is lacking in constitution because she does not have the capacity for utilizing large volumes of air containing oxygen to purify her blood readily. It is for this reason that cows of large breathing power and extensive heart and lung capacity are considered more valuable than those lacking in these respects.

When cows are on pasture, they do well, and one reason is that they are afforded by nature unlimited amounts of air and oxygen. Too often, however, men who realize the value of constitution when they select cows for purchase do not realize that regardless of how large the cow's nostril may be, how deep may be her chest, or how well sprung her front ribs, she is no more valuable than a cow showing less evidence of constitution unless she is afforded an abundant supply of fresh air. Because of this, on thousands of farms, cows are stabled in barns that are dark, cold, damp and poorly ventilated. Cows are compelled to breathe air which contains only a limited amount of oxygen. Because of this, it is absolutely impossible for them to do their best work. Even though they may milk largely when first stabled, under these conditions they gradually decrease in their milk flow, and finally become unprofitable, and in many instances fail to live long. Under such conditions, the germs of contagious abortion, cow pneumonia, calf cholera and many other diseases thrive to greatest advantage. No one would wilfully subject their cows to such conditions, and the reason they do so in many instances is because they have not given the subject their careful thought and consideration.

What many barns need more than anything else is an efficient ventilating system. Such a system permits the entrance of an abundance of fresh air loaded with oxygen, and removes the foul air in which there has been substituted carbonic acid gas—a poisonous product—in place of the oxygen which has been used up by the animals that inhabit the barn.

Many dairymen wonder why their cows do so poorly in winter time when they feed them so well, and care for them in the most excellent manner they know how, furnishing them in abundance with the choicest of feeds. They wonder why their herds are troubled with contagious diseases of every sort, why their veterinary bills are so high, and why their death losses so great. Lack of ventilation is the greatest reason.

It should be borne in mind that nothing will take the place of fresh air and oxygen. Regardless of how properly cows are fed, how thoroughly they are groomed, how well they may be exercised or how regularly they may be attended and milked, if the barn in which they are stabled is not properly ventilated, they will not do good work, and they will not remain healthy. Therefore they cannot be a source of profit.

Now is the time to look about the barn. If it is dark and damp, and disagreeable odors exist, improve the ventilating system, or put in a new one. Fresh air costs nothing. Why withhold it from the cow?

PURE-BRED BREEDERS' STATIONERY

Did you ever stop to think that every scrap of printed matter about your farm or used in your business is advertising? Do you realize that business cards, billheads, letterheads, checks, shipping cards, everything bearing the firm's name—and, by the way, everything should have the firm's name on it, is advertising?

And this should represent your business, not misrepresent it. One must never forget the fact that everything one says or does is advertising. Therefore, if you have a creditable herd of pure-bred hogs or cattle and poor farm equipment, a nice farm and poor stationery, you are building up in one place and tearing down in another.

One must remember the trite old saying that you can "often cut off your nose to spite your face." A little ceremony often means woeful waste. There is a vast quantity of very ordinary printed matter used by farmer-breeders. The big end of all that one receives in one's mail is very commonplace; and yet, if one but knew it, it would cost very little for all to acquire originality and distinction. It is a very funny thing, but it is a fact, that after many breeders get a customer, they will often send a poorly-written letter on ordinary stationery to that person just because he or she is a customer. The breeder becomes indifferent, at times, forgetting the fact that indiffeernce and lack of attention in little things often drives big customers away.

One should advertise just as much to one's customers as to the public in general. If you have made a man like your herd you want to make him like it better; you want to make a good impression deeper. You must take into consideration at all times the fact that there are others working for that man's business. No matter how the customer came to you, advertising brought him. You may say that the quality of your herd brought him to your originally and salesmanship landed the bird. That's all right; quality of goods of any kind is first-class advertising, and no newspaper advertising can be of value without being backed up by quality in what is offered. You perhaps will declare that your customer came to you because he was recommended by another customer, that's fine; that's another good kind of advertising. You may say that a customer read of your success at some stock show or fair and became curious to see your herd; that's advertising too, and advertising which very few understand and appreciate fully.

If you get a stack of a hundred letters in your mail and among them is a nice card, carefully printed, handsomely engraved, you are impressed with the fact that the sender has some regard for you. He demonstrates that he has taste and gives you credit for having taste. You surely look at that card more than once. You take it in your hand and bend it; put it nearer your eyes and scrutinize it; then your artistic taste admires the plain simplicity of the card or the handsome color combinations thereon. You make up your mind right on the spot that the sender is of some importance. It came from a wideawake, progressive business man.

There is no getting around the fact that we judge a man by the way he is dressed. At any rate, our first impression of a well-dressed man is a good one, and we will have a good impression of the gentleman unless he proves to be a "fake front." So it is with a business house. It is judged by the attractiveness of its show windows, cases and, among other things, its stationery and advertising matter. If you will look up your stationery bill for the year, Mr. Breeder, you will find it not large comparatively, and the cost between something which is distinctively striking and something exceedingly ordinary is very small—perhaps not five cents a day on all the stationery and printed matter you send out.

This article is of no consequence to some. They are the breeders who are in the spotlight of the industry to-day—who issue annually attractive catalogues showing their herd headers and attractive spots and nooks about their holdings, inviting visitors to their establishments. There are, however, hundreds of breeders who are neglecting this small but all-important phase of their business. It might be added that there is no branch of business-doing that calls for, and provides more attractive stationery than does the livestock business. There is no reason, then, why breeders' business cards, letterheads, envelopes and such should not reflect to some extent the high charaiter of his establishment and the skill of his calling.

Let us have the opportunity of printing some nice effective stationery for you. It's an investment of which you will always be proud.

New Brunswick Dairymen United

Strong Organization Formed at meeting held in Sussex on March 7th Officers elected and important Resolutions passed.

An important meeting of N. B. Dairymen was held in the Agricultural Hall, Sussex, on Friday, March 7th.

Delegates representing all branches of the Dairy Industry were present and important qeustions to the trade were discussed and action taken thereon.

E. P. Bradt, Secty. of Agriculture for N. B., H. W. Coleman, Dairy Supt., George H. Barr, Chief of the Dominion Dairy Division and Harvey Mitchell, of the Dominion Dairy Division, were present and took part in the proceedings.

The morning session was taken up with the exhibit of cheese, representing the August and September makes from 20 factories. These were scored by Mr. Barr, the result of whoes finding will be seen in the prize lists following.

After the cheese had been scored by Mr. Barr and results announced, a general discussion led by Mr. Barr was taken up and many points of interest were brought out and thoroughly gone into.

The following was result of Mr. Barr's scoring and the prize winners.

Prize Winners Cheese Exhibit, Sussex March 7, 1919. Value of Prizes, $170.00

August Cheese

$25.00 from Provincial Department of Agriculture to be divided pro rata among cheese makers, whose cheese score 90 points min., Flavour, 39 points.

The result in the competition was as follows, the first five being prize winners.

August

1—Harry Parlee, Newtown, 93.1.
2—Albert Sear, Penobsquis, 92.6.
3—Fred Fawcett, Hammond, 90.9.
4—H. H. Gillis, Hd. Millstream, 90.2.
5—Nelson McKenzie, Mannhurst, 90, Flavour.
6—W. W. Preble, Lr. Ridge, 90.
7—Chas. Yoemans, Petitcodiac, 89.9.
8—Jas. Haslam, Carsonville, 89.8.
9—Ben. Keith, Havelock, 89.5.
10—J. A. Northrup, 89.4.
10—J. A. Northrup, Berwick, 89.4.
11—O. W. Keirstead, Collina, 89.2.
12—S. Gibbons, Corn Hill Corner, 88
13—Joseph Ready, Clover Hill, 88.7.
14—Waldo Rogers, Lewis Mt., 88.5.
15—E. B. Keith, Canaan Road, 88.0.
16—Wm. Taylor, Pearsonville, 87.3.
17—Jas. H. Brown, Corn Hill, 87.2.
18—J. A. McGilvery, Bellisle Creek, 86.9.
19—B. Fawcett, Killam's Mills, 86.
20—D. Collings, Mt. Middleton, 85.3.

September Cheese

$25.00 from Provincial Department of Agriculture to be divided pro rata among cheese makers, whose cheese score 90 points min., flavour 39 points.

Result as follows, first eleven being prize winners:

September

1—O. W. Keirstead, Collina, 94.2.
2—A. Sear, Penobsquis, 94.1.
3—Joseph Ready, Clover Hill, 93.4.
4—S. Gibbons, Corn Hill Corner, 93.1
5—Harry Parlee, Newtown, 93.0.
6—J. H. Brown, Cornhill Cheese & B. Co., 92.7.
7—Robert Prebble, Lr. Ridge, 92.3.
8—J. A. Northrup, Berwick, 91.5.
9—Wm. Taylor, Pearsonville, 91.3.
10—Fred Fawcett, Hammond, 91.1.
11—Bliss Fawcett, Killam's Mills, 90
12—H. H. Gillis, Millstream, 89.9.
13—James Haslam, Carsonville, 89.9
14—D. Collings, Mt. Middleton, 89.6.
15—Ben. Keith, Havelock, 88.9.
16—Waldo Rogers, Lewis Mt., 88.5.
17—Nelson McKenzie, Mannhurst, 87.9.
18—J. A. McGilvary, Belleisle, 86.7.
19—Chas. Yoemans, Petitcodiac, 86.4
20—E. B. Keith, Canaan Road, 86.

The following were special prizes the winners of which were:

$10.00, G. E. Barbour Co., $1.00 each to the 5 highest scoring in August and September cheese, money to go to the makers.

August Cheese

Harrp Parlee, score 93.1.....$1.00
Albert Sear, score 92.6 (makers) 1.00
Fred Fawcett, score 90.9..... 1.00
H. H. Gillis, score 90.2..... 1.00
Nelson McKenzie, score 90. (flavour 1.00

September Cheese

D. W. Keirstead score 94.2..... 1.00
Albert Sear, score 94.1..... 1.00
James Ready, score 93.4..... 1.00
S. Gibbons, score 93.1..... 1.00
Harry Parlee, score 93..... 1.00

$10.00, J. D. McKenna, $5.00 to each of the makers exhibiting the highest scoring August and September cheese. Harry Parlee, August, score 93.1, $5.00
D. W. Keirstead, Sept., score 94.2 5.00

$15.00 from the Harris Abbatoir Co., St. John, N. B., to be divided pro rata among the factories whose August cheese score over 90 points and flavour 39 points. Money to go to patrons.

	Score	Flavour
Newtown	93.1	40.5
Penobsquis	92.6	40.5
Hammond and Markhamville	90.9	39.0
Head of Millstream	90.2	39.0
Mannhurst	90.	40.0
Lower Ridge	90.	39.0

$15.00, Gunns Ltd, St. John. To be divided pro rata among the factories whose September cheese score 90 points min. Flavour, 39 points. Money to go to patrons.

	Score	Flavour
Collina	94.2	40.7
Penobsquis	94.1	40.6
Clover Hill	93.4	40.2
Cornhill Corner	93.1	40.7
Newtown	93.0	40.7
Cornhill	92.7	40.2
Lower Ridge	92.3	40.0
Berwick	91.5	39.9
Pearsonville	91.3	40.3
Hammond	91.1	39.0
Killam's Mills	90.0	39.2

$25.00 (value) DeLaval Co., Montreal, $12.50 to the maker having the highest scoring August cheese on exhibit. Value allowed on any factory equipment purchased by the winner during season 1919.

$12.50, same conditions for September cheese.

Harry Parlee, August, score93.1.

D. W. Keirstead, Sept., score 94.2.

$15.00 from Smith & Proctor, Halifax, N. S. To be divided evenly among all factories whose cheese score 40 points or over for flavour. Money to go to patrons.

1—Newtown 40.5
2—Penobsquis 40.5
3—Berwick 40.0
4—Mannhurst 40.0

$15.00 from R. B. Colwell, Halifax, N. S. To be divided among all factories whose September cheese score 40 points or over for flavour. Money to go to patrons.

Collina 40.7
Cornhill Corner 40.7
Newtown 40.7
Penobsquis 40.6
Pearsonville 40.3
Clover Hill.....40.2
Corn Hill.....40.2
Lower Ridge.....40.0

Wyandott Special, sweepstake prize camera, value $15.00, by J. B. Ford Co. Won by O. W. Keirstead, Collina, September score.....94.2

In the afternoon a meeting of the delegates was held in the Assembly Hall. Mr. Sterling Keith of Butternut Ridge acted as chairman, with F. G. Hughson, Cornhill, K. C., Secretary.

Mr. Harry Mitchell presented the prizes to the prize winners in the scoring contest and Mr. Coleman read over the prize lists explaining same. Prizes to the value of $170.00 were awarded.

On motion of T. G. Perry, seconded by N. W. Eveeligh and carried, it was resolved to proceed with the organization of the Dairy interests of the Province.

Dairy Supt. Coleman outlined the proper method of organization and submitted many useful facts along these lines to the meeting.

On motion and carried the Chairman, who was asked to appoint a committee to draft a constitution, named the following, the first to be chairman: Messrs. Huggard, Trites, Hughson, Keirstead, Northrup, Bleakney, Conrad, Coleman.

During the deliberations of this committee, Mr. Simmons of Moncton told of meeting at Ottawa with the representatives from the other provinces of the Dominion for organization of National Dairy Council.

George H. Barr, chief of the Dairy Division, Ottawa, spoke on the need of dairy organization in New Brunswick.

The commttee appointed to draw up draft of Provisional constitution, reported, and the draft was read and explained by Mr. Coleman. The report of the committee was accepted, and it was decided that the name of the new organization would be "New Brunswick Dairymen United."

The Board of representatives called for was elected as follows:

Cheese Factory Patrons—Thos. G. Perry, Butternut Ridge; F. G. Hughson, Cornhill.

Creamery Patrons—S. L. Stockton, Petitcodiac; J. T. Barnes, Sussex.

Private owned factories—Nelson Eveleigh, Sussex.

Stock Cheese Factories—E. M. Vail, Belleisle.

Independant Cheese Factories—O. W. Keirstead, Collina.

Privately Owned Creameries—Ed. Robinson, St. John.

Stock Creameries—A. E. Trites, Salisbury.

Independant Butter Makers—J. A. Conrad, Sussex.

Independant Cream and Milk Shippers—W. H. Huggard, Norton.

E. P. Bradt, Secty. of Agriculture, in an instructive address emphasized the need of such an organization as that just formed, and pointed out the possible savings in the purchase of supplies and also the need of making quality goods and increasug production. He offered to encourage production by providing funds for herd competitions, providing each factory would put up a similar amount of money, $15.00.

The following resolution was moved by J. P. Simmonds and seconded by J. A. Conrad, and carried.

Whereas the Federal Authorities saw fit to temporary admit the manufacture and sale in the Dominion of Canada of Oleomargarine, and

Whereas the order permitting said manufacture and sale was granted only to relieve food conditions during the war, and

Whereas on the successful conclusion of the war conditions in the Dominion will again become normal,

Therefore be it resolved, that the New Brunswick Dairymen United are anxious to see that the permit for sale and manufacture of Oleomargarine is rescinded at as early a date as possible.

Moved by W. H. Huggard and seconded by J. Titus Barnes, that

Wheeras the use of inferior bulls by the farmers of New Brunswick is in a large measure responsible for lack of increased production by the dairy cows, of the Province is recognized by everyone. Being sure that a more general practice of cow testing would mean the elimination of many of these inferior animals.

Be it therefore resolved that the N. B. D. U. request the Provincial Department of Agriculture through the Superintendent of Agriculture Societies, the Dairy Instructors, District Representatives and other officers of the Department to make greater efforts to increase the practice of cow-testing. (Carried).

The following resolution was moved by Jas. Stultz, seconded by H. F. Hughes, and carried.

Whereas the world war is about to be terminated successfully to the Dominion of Canada, and whereas that from now on will come a period of readjusting of the Agricultural industries in Canada, and whereas it is generally agreed by Agricultural experts that large portions of New Brunswick are well adapted to dairying, and whereas, to bring about the necessary changes to make the citizens of New Brunswick realize the opportunities that lie before them in Dairy work, a very progressive and effective means of education will have to be effected, and whereas a beginning has been made along this line through the medium of the Maritime Dairy School, carried on in connection with the College of Agriculture at Truro, N. S., supported financially and otherwise by the three Maritime Provinces, and whereas the present buildings, plant and equipment are not large enough for the development of the school, be it resolved that the New Brunswick Dairymen United in convention assembled, place such appreciation on record for the good work that has been done in the past, in getting the dairy interests of the Maritime Provinces centered together in the Martime Dairy School. That it is convinced that better and more efficient work can be done through the medium of one school of sufficient size and capacity than more. That a school of this class should be purely Maritime, that is owned and operated co-operatively by the three Maritime Provinces. That just as soon as possible a school of sufficient size and with proper equipment to best accomplish these purposes be established. That a committee of three be appointed from the New Brunswick Dairymen United to present the resolutions to other interested associations and also to the proper Government officials in the different Provinces.

James Stultz, H. F. Hughes and W. H. Coleman were appointed a committee to deal with resolution re Dairy School.

At a meeting of Directors, the following officers were elected:

F. G. Hughson, Cornhill, K. C., Pres.
A. E. Trites, Salisbury, Vice-Pres.
T. G. Perry, Butternut Ridge, Auditor.
H. W. Coleman, Secretary.

The Secretary was instructed to prepare a set of by-laws, rules and regulations for submission to board at as early a date as possible.

Pedigreed seed bears the same relation to the grain growing industry as pedigreed stock bears to the live stock industry, and its use is necessary if a grower desires to maintain the yield, purity and durability of his grain.

The N. B. Farmer's and Dairymen's Convention

Forty three years old and still going strong is the the record of the New Brunswick Farmers' and Dairymen's Association. Milestone forty-three was reached at the convention held in the city of Fredericton on the 11th to 14th inst., when delegates representing the majority of the Agricultural Societies of the province assembled to discuss the problems of their profession. L. M. Anderson, president of the Association occupied the chair, being occasionally relayed by vice-president J. A. Bernier.

PRESIDENT'S ADDRESS

Brother Farmers and Citizens of Fredericton:

I deem it a high honor to have the privilege of opening the forty-third annual Convetnion of the Farmer's and Dairymen's Association of New Brunswick.

Since we last met, the horrors of the greatest war which the world has even known have ceased, and we hope, for all time to come. When we stop to consider what the future holds out to us we can see the many great questions and problems which must be worked out before we can settle down to pre-war conditions. One great incident which has been very noticeable to me is that the war has been the means of proving, beyond a doubt, that **Might is not Right,** and that even the smallest nation or most humble citizen has a place, and is needed in the World, and I sincerely hope people in all walks of life have been made to realize that all must live and let live. The common people are demanding a fair deal from the powers that be, and are going to persevere in their demands until they succeed. YOU that have studied this great question from a broad-minded standpoint will agree with me that on the whole the common people have been unfairly dealt with in the past.

There are to classes of people whom we knew very little about, in fact they barely existed in Canada before the war, and (so to speak) grew over night—not only into hundreds but into hundreds of thousands. I refer to our great Naval and Military organizations. If given justice, as they should be, they must rank above all, in our provision and care. I sincerely hope that our Governments to whom we look will give these brave, noble men and their dependents their just dues, and that the schemes evolved by these governments, especially in the land settlement for soldiers, will be practical and framed with a view to protect these defenders of our country, and not result, as heretofore, in the case of Immigrants, in the palming off of old worn-out farms on innocent settlers, unfamiliar with local conditions and perhaps unskilled, to the advantage of political heelers. It seems to me further that the Government, in the application of its bounties and favors to returned men, should strongly discriminate in favor of the dependents of those who have made the supreme sacrifice, and likewise to the benefit of those who have suffered through long and dreary months in the trenches of France and Flanders.

Labor in our towns and cities has been forced to organize in order to get a living wage, as a result of which the common man of the city is being respected as he never was before, by the Capitalists, because the latter realize that without competent labor, industry and manufacturing cannot prosper. As the great wheel of life revolves the classes are beginning to realize that the more prosperous the masses, the more demand there must be for all kinds of agricultural and manufactured goods.

There are phases of agricultural activities which practical farmers and scientific men who have been brought up here and have traveled over other parts of the North American Continent, will agree, would not prove profitable here. For instance: In Ontario, Quebec and Western Canada, breeders of pedigreed live stock can get prices that generally pay them well—from One Thousand to Ten Thousand Dollars for sires and dams. Here in the Lower Provinces it only happens on very rare occasions that a breeder of high-class stock gets a remunerative price. If he could get these paying prices, why is he not at it today? I only know of one or two breeders of high-priced pedigreed stock who were in the business fifteen years ago, that are now carrying it on. I will leave it to you as to their reasons for discontinuing. Certain of our Governmetn men have in the past and are today advising us to specialize and go into only one line or branch of agriculture. The Maritime Provinces always have been mixed farming districts and never will be anything else. Specializing will not pay because of the very limited markets. (My father used to tell me, "A little bit of everything, and not too much of anything" was a good motto which worked well with him, and I believe he was in the right.)

The proposed cold storage, abattoir and stock-yard plant, which the Dominion Government has promised us, will help our ambitious farmers out wonderfully, once it is open for business.

The Money. which our Governments are spending on agriculture is doing good in many cases; but I am satisfied that if those in authority would listen to our practical farmers a little more and abide by their advice the money would give the average farmer, for his labor, a return of Two Dollars where he is getting One under the present system of Government aid.

It is today being charged in financial circles and through the press that farming is the most profitable profession in Canada, and that the farmer is rapidly becoming rich and clamoring for larger profits. If agriculture is on such a sound basis, why is it that our young people are leaving the farms every day to make a living at occupations other than farming? As a matter of fact it is undisputed by practical farmers and business men who have tried the farming for the big profit game that agriculture is at the lowest ebb it has been for many years in the Province, and any prosperity which our farmers may have is not due to excessive profits, but to the habits of strict economy in every detail in which they have of necessity been trained.

Gentlemen, unless we forget our old political sores and organize into a solid body, FARMERS, first, last and all the time, the legislators of this country will never put any practical ways and means before us which will encourage our young people to stay on the farm, and if conditions are allowed to exist as they are, farming is bound to grow less remunerative and, therefore, less attractive.

I would like to specially draw the attention of the young farmers at this meeting, and throughout the Province, to he activities of the United Farmers Association of Western Canada, Ontario, Quebec and New Brunswick, from a social, economical and political standpoint. In Ontario particularly, where the old party lines were even

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tighter drawn than in our own Province, the recent be-elections clearly show the mighty influence of Farmers, organization and point to at least a fair agricultural representation in the next Assembly. Let us emulate these Provinces in our organization, for the benefit of our most noble profession.

L. M. ANDERSON, President
The Farmer's and Dairymen's Association

Fredericton, N. B., March 11, 1919.

In the absence of His Worship Mapor Hanson, Mr. Joseph Walker, Deputy Mayor, fittingly extended the cordial welcome of the citizens of Fredericton to the members of the Farmers Parliament. As a business man who is in close touch with the woolen industry and its products he strongly advised the farmers of the province to do their utmost to capture their share of the wool trade by increasing their flocks and taking advantage of the high prices that are sure to prevail for some time to come owing to the present depleted condition of the world's wool markets.

Vice-president Bernier made a fitting reply in the course of which he assured Mr. Walker that if the city fathers of Fredericton have occasion to visit the country they will be accorded a rēciprccal welcome and the hospitality that characterizes the agriculturists of the province. He referred in glowing terms to the progressive steps for the advancement of the agricultural professions that are being taken by Hon. J. F. Tweeddale Minister of Agriculture, and his staff. Mr. Bernier concluded his remarks by adressing the Acadian members for a few minutes in their mother tongue.

Hon. J. F. Tweeddale, minister of Agriculture on rising to address the meeting was heartily applauded. He stated that he was a farmer from boyhood, having carved a home for himself out of the virgin forests of Victoria County where the soil is good and rich and had made a success of the undertaking. He had learned a great deal by dint of hard work and practical experience—the kind of knowledge that is realy worth while theoretical knowledge has its place but in order to be of value it must put into successful operation. The scientific and the practical going forward hand in hand comprise a team that even abject adversity can hardly lefeat. He assured the Convention that he was ready at any time to champion the right of the industry he had the honor to represent in the Legislative Assembly of the Province. The minister made fitting reference to the great sacrifice that had been made during the recent war by the young men of Canada not only in the trenches but also in the Empire's second line of defence, on the farms where the food products essential for the successful prosecution of the struggle to a victorious conclusion were produced. The women of New Brunswick in common with their sisters in all parts of Canada had played a glorious part that will never be forgotten; but their praises will be sounded from generation to generation.

The farmers of New Brunswick had made a grand response to the call for increased wheat production within the bounds of the province. As head of the department of agriculture he was proud to announce that statistics recently gleaned show that New Burnswick farmers have actually produced sufficient wheat during the season 1918 to bread the people of the province for the ensuing year. The wheat mills are crowded with work and he has found it necessary as a further inducement to millers who must increase their milling facilities to cope with this work to grant an increase in the bonuses on roller process mills. Mr. Tweeddale outlined the Soldier's Settlement Bill and the assistance that returned soldiers who are inclined to settle on farms may expect from the local and federal governments. The various lines of work conducted under the auspices of his department by the members of his staff in their respective divisions co-operating with the farmers of the province were explained and an invitation extended to farmers to make the utmost use of the members of the staff in any capacity within their domain. In conclusion Mr. Tweeddale introduced Mr. .E P. Bradt, the new Deputy Minister. He also paid a tribute of appreciation to the work that is being done by Mr. Harvey Mitchell, of the Federal Dairy Division in asisting by timely advice and untiring efforts in the promoting of the dairy interests of the province. New Brunswick dairymen are now facing the question of producing quality goods fairly and squarely and the results already achieved are most gratifying.

Mr. Brad expressed his appreciation of the cordial reception he had been accorded by the farmers of New Brunswick whenever he had had an opportunity to meet them. He felt that he was no longer a stranger and solicited the co-operation of all concerned to not only keep the New Brunswick agriculture to the fore but advance it in all its lines where improvements may be made. A co-operation of this kind will spell success for any movement.

The following committees were named by the President:

Resolutions.—Isaac W. Baird, A. J. Gaudet, M. A. MacLeod, A. Chase Fawcett and Geo. E. Fisher.

Finance.—H. D. rMerseeau, Edward Scovil and D. Z. Daigle.

Nominating.—A. C. Fawcett, Westmorland Co.; F. H. Walsh, Albert Co.; L. B. Somers, Restigouche; F. C. Peoples, Victoria; Scott A. Shaw, Carleton; Donald Watting, Northumberland;, D. Z. Daigle, Madawaska; J. E. Degrace, Gloucester; A. J. Doucett, Kent; J. W. Baird, Queens; Fred Wood, Kings; H. D. Mersereau, Sunbury; Rev. M. Cochrana, Charlotte; J. M. Donovan, St. John.

Parliamentary.—Jas. Brennana, E. P. Bradt.

The opening number scheduled for Wednesday morning's programme was an address on "How Can We Best Increase Crop Production in New Brunswick," by W. B. Fawcett, Sackville. Owing to recent illness Mr. Fawcett was unable to be present but he had delegated his brother, Mr. A. C. Fawcett, to take his place. Mr. Fawcett read a carefully prepared paper in which he pointed out several pertinent facts that are at present deterring the progress of the agriculturist. Mr. Fawcett's paper will be published in full in these columns. A lively discussion ensued, in the course of which a number of speakers concurred with some of Mr. Fawcett's ideas, but who unfortunately did not offer any constructive ideas as to how some of the causes of complaint may best be eliminated. Mr. D. B. McKinnon, of Westmorland county, made the trite remark that when a doctor is called to see a patient his first act is to try to ascertain the root of the trouble before making suggestions re a remedy. If the farmers of Canada wish to remedy any of their causes for complaint they will do well to look to themselves and their strict and almost religious adherence to party politics as the source of their troubles. The housecleaning must begin by first eradicating narrow party politic ideas and stand solidly and independently for only the best principles that will tend to alleviate grievances and spell progress.

Mr. C. F. Alward said farmers must learn to do something they have in many cases neglected to do in the past viz., give their boys a chance to qualify themselves to take their place on the public platforms and discuss the great issues of the day on a par with the devotees of the so-called learned professions. Farmers and their sons are too retcient and this is really one of the reasons why more farmers do not gace our legislative halls.

(Continued in next issue.)

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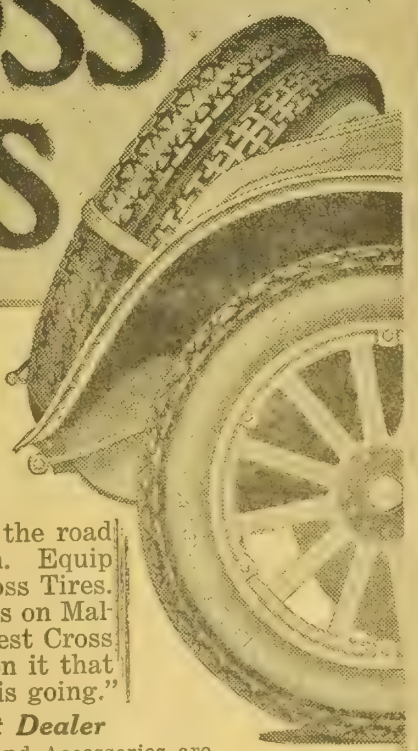

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HORTICULTURE.

WHY SPRAYING WILL PAY IN 1919

For four years the apple growers of the Annapolis Valley have in response to patriotic calls, grown all of the field crops such as beans, oats and potatoes that they could, but in some way have found time to prevent their big permanent asset, their apple orchards from deteriorating. It is true that they have not sprayed, pruned nor cultivated quite as well as usual, but the neglect has not been enough to influence the trees appreciably from one year to another. They knew that when the war broke out they were slowly winning over their competitors for supremacy in their natural market, the English Market. They knew that neglect was common in competing sections, and that if they cared for their orchards, the end of the war would see Nova Scotia stronger in the English apple market than ever before. Two things they did not consider, and did not expect, have come to their aid and placed them to-day in a stronger position than even the most sanguine dreamed. One is the increase in rail freight rates, which makes the cost of transporting of apples from Western America to England almost prohibitive, while Nova Scotia with apples practically at the dock is not seriously affected by increases in rail freights. The other is the low temperature of the Winter of 1917-18, which killed an appreciable percentage of the trees in North Eastern America in sections that are in a position to compete with Nova Scotia.

Events of the past few months have justified those who have advised Nova Scotians to care for their orchards during the past four years. Practically everything that has gone across has brought the maximum price, clearing in Nova Scotia, from seven to ten dollars per barrel, and the markets and steamers transporting the apples have called for more and more apples until the warehouses are bare.

All who understand the situation now agree that the prospects are for high apple prices for a long period. Nova Scotians having kept their orchards in condition for just this opportunity, are not being injured by the frost of the Winter of 1917-18, nor innfluenced appreciably by the increase in rail freights, must benefit more than the growers of any other section by the conditions that have come about.

In order to hold this market for their own, it is now up to Nova Scotia to produce the largest crops of high grade fruit as cheaply as possible. A large volumn of apples moving will attract the fastest and largest steamers, and not only lower charges all along the line from producer to consumer, but will tend toward getting the fruit on the market in better condition. This will tend to prevent such destructive competition from developing, as developed during the .90's; but in order to insure the market for ourselves we must grow good fruit and grow it cheaply.

We know that thorough spraying means the difference, in most years, between 10 to 30% of o. 1's, and 60 to 80% of No. 1's. Thorough spraying too means in average years the difference between 20 to 50 barrels per acre and 80 to 120 barrels per acre. In 1913 thorough spraying meant the difference between a good crop and no crop, in practically every orchard in Nova Scotia.

It costs from $15 to $25.00 to spray one acre of orchard four times, labour, material and depreciation on sprayer included. Either the increase in quality or the increase in quantity will usually pay the spray bill twice over when No. 1 apples are $2.50 per barrel. How many times they will pay the spray bill in 1919 remains to be seen. Nova Scotians both individually and collectively need a large crop of clean fruit more in 1919 than in any year since Nova Scotia first shipped apples to England. I do not mean by this that they need the high prices that all are quite confident will rule more than anyone else, although the apple men of Nova Scotia are the exception among farmers generally ni being rendered poorer by the war, but more in order to get the first innings on the market, get a firm hold and get the trade channels developed right and large before unnatural competitors again appear.

For the reasons enumerated it would seem good business for Nova Scotia apple growers to spray more and better in 1919 than ever before.—By G. E. Sanders, Dominion Entomological Laboratory, Annapolis Royal, N. S.

CROP ROTATIONS FOR EASTERN CANADA

(Experimental Farms Note.)

Profitable yields of field crops in the future can be assured only by the adoption and persistent practice of suitable crop methods. There are many factors, which combined, tend to influence crop yields and the cost of production but the prime factor in stimulating immediate increased crop returns and in establishing for the future a stability in crop yields is the practice of crop rotation under mixed farming conditions. This term denotes a combination of different classes of crops which are grown in such order that the preceding one prepares the land for or otherwise aids the crop following.

The essentials of a good rotation include roots or corn, grain and hay grown in the order named. The duration or cycle of the rotation may be varied to suit particular conditions. Moreover, it may be advisable where conditions warrant to combine two or more rotations on the one farm There are innumerable combinations of different classes of crops which will prove satisfactory when applied judiciously. Under any circumstance it is absolutely necessary, in order to obtain even medium crops, to apply at least the principles already indicated as essential in all good crop rotations. The working of these principles may be explained by the accompanying practical illustration. Such crops as corn, roots and potatoes require abundant suplies of food from the soil for stem, leaf and root growth. This may be most profitably and practically furnished by clover or other sod ploughed down or by applications of barnyard manure. The cereals such as wheat oats and barley require less of the readily available food and generally do best following hoed crops for which manure was applied or after a leguminous crop such as peas or clover. Sod, too, well prepared produces satisfactory yields of cereals. The area sown to cereals, seeded to clovers and grasses will supply excellent hay-crops the following year or two years. The sod of the latter turned down and manured fits the land for corn or roots once more.

Such general plan of procedure or crop rotation may be modified by each farmer as will best suit his soil and needs. Several combinations of mixed farming crop rotations are in operation throughout the Experimental Farm system in Eastern Canada an outline of which is contained in the circular number 9. Copies of this circular are available free on application to the Filed Husbandry Division.

The progress made in the work carried on to date has led to the conclusion that the following characteristics are desirable under almost any conditions in mixed farming rotations:

Grain fields should be seeded down with clover, even though it be used only as a fertilizer.

Grass and clover seedings should be heavy. Increased crops of hay and rare failure of a catch have justified this practice.

Hoed crops should form a large proportion of every rotation. An attempt to farm a small area without a hoed crop was not successful. Weeds could not readily be kept in check.

No field should be left in hay for more than two years. The records show that the second crop almost always costs more than the first per ton, and that succeeding crops are very liable to be grown at a loss.

Barnyard manure should be applied frequently in comparatively small quantities rather than at long intervals in large quantities.

In this progressive age the man who will not give his orchard the proper care it is entitled to should chop it down and use the ground for some profitable crop. There was a time when fine apples could be raised without care, but that time has passed and there is nothing to be gained in keeping old trees without the usual routine in orchard work.

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SPRAYING PROBLEMS

SPRAYING A NECESSITY.—It is no longer necessary to persuade people to spray their trees. The need of it is apparent to almost everyone, but how to get it done is a problem to some of us. The large commercial orchardist is better able to work out his spraying problems than the small grower or farmer with an acre or less of orchard. Yet these trees must be sprayed if really good fruit is desired. Because of increased difficulties and expense the man with a few trees too often neglects to spray.

COMMERCIAL SPRAYING.—In some neighborhoods the commercial sprayer is doing good work. For a number of years the writer conducted such a business and his former partner is still carrying on the work with success. We frequently applied 10,000 gallons of spray in a season, treating perhaps a hundred or more farm apple orchards during the operation, which lasted about a month altogether. We made two applications, one with lime-sulphur in early Spring while trees were still dormant, and then a "fruit spray," starting in just after petals had fallen, and extending for about one week. We first used a gasoline power outfit, but later used the barrel pump as better suited to the varied line of orchards which we encountered in our rounds. I have heard of communities where commercial spraying had not been a success owing to the ignorance or dishonesty of the sprayers, or because of the farmers not appreciating the benefits of such a plan. Where such a plan is not workable the farmer or fruit grower must endeavor to do his own spraying somehow. The following notes on various spraying problems may be helpful.

SELECTING OUTFIT.—If it is necessary to purchase a new outfit care should be taken to select one that fits the needs of the purchaser. A heavy outfit seldom gives satisfaction, as the spraying may need to be done when ground is soft from Spring thaws or heavy rains. A heavy power outfit on a soft hillside is about as provoking as a three-ton truck in a mudhole. In selecting an outfit the hilly or level conditions of orchards to be sprayed are of more importance than the size of the orchard. The power outfit will of course save labor of pumping. Where labor is scarce this is quite an item.

DETAILS OF HANDLING.—If orchard is comparatively level the power outfit may be equipped for using two leads of hose. Otherwise I would arrange for only one lead of hose. Thus correspondingly lighter engine and pump and smaller tank may be used. Each lead should consist of at least 20 feet of good hose, shut-off, 10-foot rod with "Y" attached to end of rod and two good nozzles. There should be an eighth turn between angle of rod and front face of nozzle. . This can be secured either with eighth turn "Y" or straight "Y" and eighth turn elbows between "Y" and nozzles, or with eighth turn nozzles connected directly to "Y". Either combination will have the desired effect. Use a strong, light wagon, preferably with wide tires and built so that front wheels will turn completely under body.

HAND POWER.—A splendid hand power outfit is the barrel pump mounted on a cart. Such an outfit with one horse hitched to it will go almost any place, regardless of low-hanging branches, steep hillsides or rocky ground. Two men will operate this outfit, one to spray and one to pump and drive. Do not attempt to operate more than one lead of hose with a hand pump.

KNAPSACK OUTFITS.—The compressed air knapsack pump has its uses in spraying bushes, plants and potatoes. The manufacturers should either quit recommending their use for spraying trees or else make more durable tanks. Some of the "new improved" nozzles for knapsack pumps are worthless. It is my practice to take them off and use a regular sized nozzle, such as is used on larger outfits. A two-foot rod attached to the short piece of hose furnished with pump will be found helpful even for ground work.

CARE OF OUTFIT.—Sometimes when the farmer gets out his spraying outfit after a year's disuse he finds he can use it only with difficulty, if at all. He will get the idea that spray pumps are like dry batteries—wearing out when not in use. Before storing outfit for the season the barrel or tank should first be thoroughly washed, after which several buckets of clean water should be poured in, and pumped out till spray coming out of nozzles turn clear. Then open all drain cocks. Be sure to drain all departments of pump, suction pipe, rods, hose and nozzles. Freezing of water in outfit will prove disastrous. Valve caps and all threaded connections should then be unscrewed and oiled. Replace them lightly, but do not screw tight till ready to use again. Even with the best of care spraying outfits are splendid trouble makers, and after years of experience I seldom get much done the first half day. Patience is needed.

CARE OF MATERIALS.—Spray materials are sometimes lost through neglecting to take care of them. Those in powdered form should be kept dry. Those in paste form should be kept from drying out by pouring a little water over the material, as the top becomes dry. Also they should be kept from freezing. Moderately freezing temperatures will not injure concentrated lime-sulphur. I have safely stored barrels of it in the barn with a little straw or fodder about the barrels for protection. I have even seen barrels of this material lie outside all Witner, but I do not consider this proper care.

LABOR PROBLEMS.—Labor shortage may be a thing of the past before another season, but skilled farm laborers and orchardists are not likely to be hunting jobs just yet. Poor help is sometimes about as bad as none at all, and especially is this true when spraying. Any good stout fellow can handle the pump handle, but the proper manipulation of the rod is not so easily acquired. As to number of hands required, no more are needed for spraying than for other departments of farm or orchard work. Therefore the regular force will be sufficient if they can be trained to do good work. Two men with a barrel outfit can apply 300 to 500 gallons a day. Do not attempt to operate two leads of hose with a hand pump. It takes a strong man to keep up sufficient high pressure for a whoel day. A boy cannot do it properly. The larger power outfits require three men, two to handle the rods and one man, or boy, to drive. I find, however, that the average farm laborer does not appreciate the spraying job and will "get out of it" if he can. They can scarcely be blamed, for spraying is an ugly job at best.

DISCOMFORTS OF THE WORK.—Some people fear that actual physical injury will result from coming in contact with various spraying materials. Part of this fear is imaginary and part of it is real. Arsenical sprays are of course poisonous. Yet I have inhaled the mist day after day without ever experiencing any ill effect. I do not believe there is much danger from this source. Evidently the liquid is too dilute to cause injury in such small quantities as a person would inhale while spraying. But the lime-sulphur spray is a different matter. It is not actually poisonous, but because of its caustic effect there is danger of physical injury, both externally and internally. This liquid even in dilute form will eat through the skin much faster than whitewash, because it is just that much stronger. A drop of it in the eye will cause any man to dance a jig. Inhaled, it sometimes causes irritation of the throat and, perhaps most unpleasant of all, it is frequently the cause of an "upset" stomach. I have suffered all of these injuries at some time or another, yet most of them were the result of not properly protecting myself. Much more of the liquid will naturally fall on the operator while spraying high trees than low trees. No leaks should be allowed in hose or rods. Stop and repair them. Good leather gloves should be worn. Hands and face should always be

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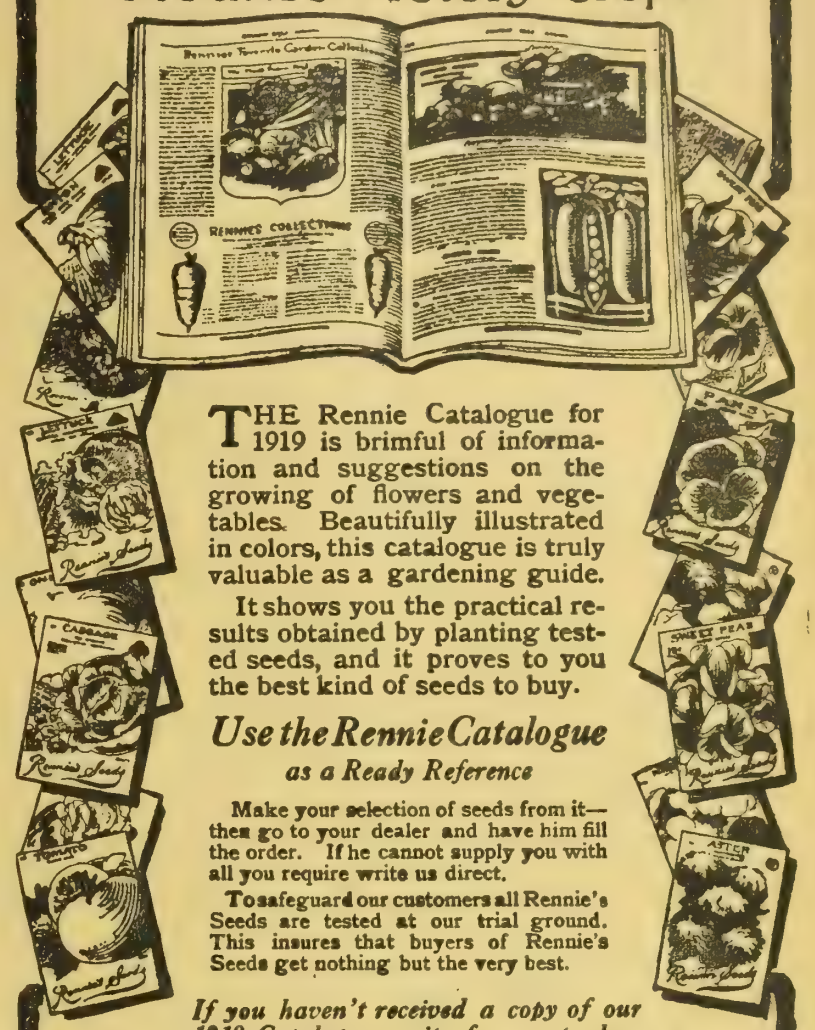

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greased with vaseline before beginning work. When at all practicable the spraying should be with a light breeze blowing and then spraying only one side of the trees. The other side can be sprayed at some other time when the wind is opposite. Thus no one need actually be afraid to tackle the spraying job if proper precautions are taken to prevent physical injury. Much of the difficulty attending spraying could be avoided if orchards were planted and cared for with the thought in mind that spraying must be done. Orchards planted on steep hillsides, trees too close together and allowed to grow skyward are mistakes which make spraying more difficult or even impossible.—David Plank in Rural New Yorker.

BEAN DISEASES

nI many section of the Dominion bush beans are now recognized as a profitable special crop, and the acreage has been greatly increased during the last few years. Approximately 100,000 acres are planted yielding considerably over one million bushels. Destructive diseases have accompanied this increase in cultivation and unless the farmer takes precaution to eliminate disease the crop will not continue to be as popular or profitable as it should. tI is safe to say that probably 25% of the crop is frequently lost through the attacks of one or more diseases which might be largely prevented by planting disease free seed. The more important diseases are as follows:—

Anthracnise is probably most destructive in the Maritime Provinces and Quebec and some years in Ontraio. It is caused by a seedborne fungus which attacks stem, leaves, pods and seed, producing a dark brown to almost black sunken spots on the stem and pods and a blackening of the veins in the leaves. When severe the plants may be completely defoliated or even completely destroyed leaving skips in the row.

Bacterial Blight is a serious problem to the bean growers of Ontario and to a less extent elsewhere. The bacteria or germs causing this disease are seed-borne and attack the stem, leaves pods and seeds, producing on the seed light yellow blotches sometimes involving the whole seed. Infected leaves develop small irregular water soaked areas, which later turn brown and fall out. The spots on the stem and pods are of a raised, water-soaked appearance with a yellow to reddish amber color, usually smaller ·t so dark as Anthracnose spots.

Rust and root of beans occur less frequently, but nevertheless are capable of causing serious loss. In many caes these may also be carried on the seed.

Mosaic: This is a neww disease which was reported as common in Southern Ontario last year. The leaves on infected plants develop a peculiar mottled appearanace. Disseased plants produced a few small pods as compared to healthy plants. Little is known concerning it. Its nature would indicate that seed from affected plants would probably produce a diseased crop, therefore the use of such seed should be avoided.

Control Measures

Plant only disease free seeds on soft which has not lately been planted to beans. This can be best accomplished by selecting, at the time of harvesting, disease free pods from vigorous high yielding plants. These selected pods should then be immersed for not more than three minutes in disinfecting solution, allowed to dry off and stored in a clean muslin bag or other disease free container. The seed from these pods should be used the following spring to plant a bean seed plot. While this is not sufficiant to ensure the obtaining of disease free stock the first year, it will if practisel regularly reduce disease to a minimum and thus largely remove the cause for poor yield.

Where pod selction has not been previously practised the first start should be made by securing seed from a field relatively free from disease. This stock should be very carefully hand-selected, removing all spotted or even slightly discolored seed. After this has been done the seed may be immersed in solution of copper sul- 1:100 for 3 minutes or in a formalin solution 1:300 for 5 minutes, allowed to dry and planted.

Beneficial results might also be obtained by puiling out and destroying diseased plants as they appear from time to time during the growing season.

So far spraying beans has not proven a commercial success but probably might be used to some extent in helping to prevent the spread of disease in seed plots.

Cultivating, hoeing or picking beans while the foliage is wet should be avoided as the disease is readily carried from diseased to healthy plants under such conditions.

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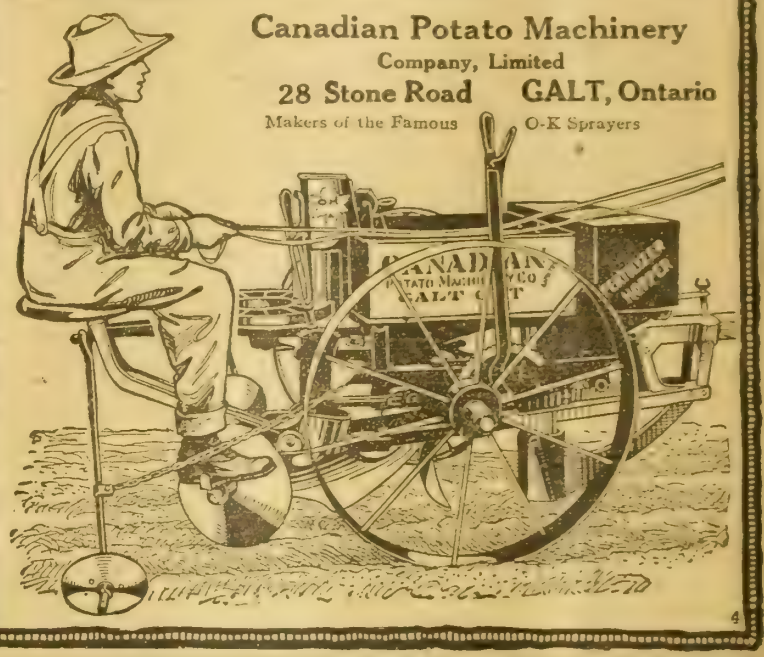

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Canadian farmers and gardeners are protected from the evils of planting inferior seed of many kinds of crops imported from other countries. By an order-in-council that came into effect in the autumn, importation is prohibited of unfit seed of clovers, grasses, vetches, rape, other forage plants, field root and garden vegetables in lots of ten pounds or more.

In Pamphlet S-12 of the Seed Branch of the Department of Agriculture at Ottawa, and obtainable from the Publications Branch, unfit seed is described as that which does not comply with the Seed Control Act requirements respecting the sale of seed in Canada, or if it has been refused admittance into any other country on account of low vitality.

The regulations will be carried out through the Custom's officials who are required to take and forward to the Dominion Seed Laboratory for examination, sample of lots of seeds of the classes named entered for consumption in Canada. Seed that has arrived in Canada and found to be unfit shall be deported under Customs supervision. The penalty for failing to comply with these regulations is $500 for the first offense and not exceeding $1,000 for the second and each subsequent offense.

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With but four exceptions all of the twenty best yielders at the Fredericton Experimental Station, are white skinned and of either the Green Mountain Cobbler or Burbank type.

The highest average yield for three years (487 bushels per acre) was obtained from Seedling 13660, bred by Prof. Wm. Stuart of Washington. This is a Green Mountain type potato fairly late in maturing, of beautiful smooth appearance and high table quality. The plants also seem to be very disease resistant.

The second in the list with 496 bushels per acre (3 year average) is a strain of Delawara, improved by W. H. Moore, Scotch Lake, N. B. This potato is comemrcially a Green Mountain and in every way resembles that type except that it may be slightly thicker and not quite so rectangular. Very resistant to disease and of high table quality.

The third is Seedling 4227, bred by Prof. Wm. Stuart, of Washington, with a three year average yield of 452 bushels per acre. This potato is longish, of the Burbank tape, and of high table quality.

The fourth is Seedling 3073, bred by Prof. Wm. Stuart, of Washington, with a three year average yield of 427 busels per acre; it is similar to Seedling 4227.

The fifth is New Scotch Rose with an average yield for six years of 422 bushels per acre. This is a large pink tuber slightly inclined to be rough and not of the highest table quality, though very good. It is quite disease resistant.

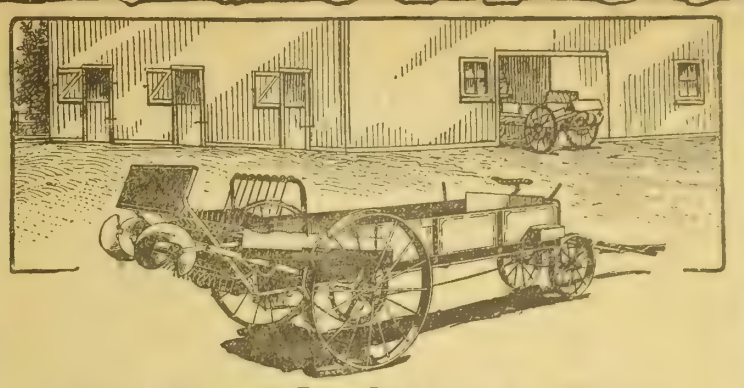
The sixth is a blue black potato following the Kidney type, bred by Dr. Whitney, St. Stephen, N. B., and developed at the Fredericton Station. It is practically indistinguishable from a variety known as McCullogh. Very disease resistant and a vigorous plant, it is a great keeper and of excellent table quality. The average yield for three years was 415 bushels per acre.

The sexenth is Dreers Standard, a long white (Burbank) type of excelelnt quality but not so disease resistant as those above with an average yield for six years of 414 bushels per acre.

The eighth is Green Moutain (Lowell's strain) with eyes a trifle deeper than the other strains of Green Mountains, but otherwise just as good and the plant is much more disease resistant and more vigorous. The four year average yield was 410 buhsels per acre.

The ninth is Irish Cobbler with a four year average yield of 406 bushels per acre. This potato is an early maturer and has the two peculiar qualities of yielding tubers that are always dry and good no matter how young they are dug and which will keep hard and dry until the following June. The eyes are rather deep and when yielding heavily it is liable to grow rather rough and have hollow heart.

Then following in order of yield we have Langdorthy with 399 bushels, Morgan's Pink Seedling 397, Vick's Extra 396, Cumming Pride 389, Eureka Evtra Early 385, Early Everett 379, Houlton Rose 375, Wee McGregor 375, Pieremont Seedling 372, Empire State 370 and Dalmeny Beauty 365. This last list was all tested for six years.



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This evenness of spreading is due to **McCormick** design. The reversing apron is driven by a worm feed which maintains the same relative speed of apron to beater at all times. The manure is thus fed steadily to the beater, which tears it into small pieces and delivers it to a spiral beater. The spiral gives the manure a second beating, makes the pieces still smaller and spreads evenly beyond the wheel tracks. Each particle of the soil is thus properly fertilized, and the whole field put in condition to produce a bumper crop. No manure is wasted. A **McCormick** spreader makes twenty loads do the work of forty spread with a fork.

McCormick spreaders are made in three sizes. No. 8 is a 49-bushel machine; No. 5, 55 bushels; and No. 6, 63 bushels. All are of the popular low type, with narrow boxes, cut-under front wheels, and strong steel frames.

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63

DAIRYING.

STARVING COWS FOR PROTEIN

We may find dairy farmers feeding rations low in protein this winter. It has come about in this way. The price of protein appearing rather high leads these men to prepare for their cows home grown rations consisting of silage, timothy hay, oats, corn and barley. If a liberal allowance of corn silage, timothy hay, and 8 lbs. of a mixture, equal parts by weight, of ground oats, corn, and barley are fed to a cow, she will be supplied with just about enough protein to produce 15 lbs. of average testing milk. A cow in reasonable flesh will draw upon her body and produce more milk than this for a short time, but the protein in the ration is so low that her production will ultimately fall to 12 to 15 lbs. of milk a day.

There is no profit in this sort of feeding and the reason a cow does so poorly is because the ration lacks in protein. If these farmers would feed a pound or two per day of some feed rich in protein like oil meal, cottonseed meal, gluten feed, distillers grains, etc., the cow with roughage and 7 or 8 lbs. of grain could produce 25 lbs. of milk instead of 12 to 15. Further, she would sustain her milk flow longer and remain in better physical condition and produce a stronger calf. It is not wise to limit a cow in the amount of protein she receives as it is impossible for her to produce profitable flows of mlik unless this element is supplied in abundance.

Some farmers have purchased large quantities of oat hulls, which is a feed low in nutrients. These oat hulls were purchased because they were mixed with other feeds and sold for about $25 per ton. We have found rations, where oat hulls made up the larger percentage of the meal portion, that did not contain enough protein to produce over 9 or 10 lbs. of milk daily. It is no wonder these dairymen complain that there is no money in dairying. There are many good mixed feeds on the market and most of them have a place. It is not wise for a dairyman to buy a feed because it is cheap or rich in carbohydrates when he has nothing but corn silage and timothy hay to feed with it. If he has clover and alfalfa hay, then such a mixture is advisable, but with timothy hay and silage a mixture rich in protein is required.

A dairyman should first find out what he needs to balance his ration with those he has on the farm and then proceed to buy the feed in the market which will meet his requirements. It should ever be borne in mind that in order to produce liberal flows of milk, a cow must be supplied with adequate supply of protein. If it is not provided in the roughage portion of the ration, that is, hay and the like, it must come in the meal portion. It hhould also be borne in mind that a mixture which will supplement alfalfa hay will not supplement timothy hay. It seems strange in this age when there are such opportunities for securing information regarding the balancing of rations that dairymen can be found everywhere, especially this year, starving their cows for protein.

SHIPPING DAIRY COWS

The United States Department of Agriculture recently made an investigation among several prominent shippers of dairy cows as to their methods. These men handle from 2,500 to 4,000 head each year during all seasons and their suggestions have the value of real experience. They gave the following suggestions:

Do not ship fresh cows long distances unless in express cars under particularly favorable conditions. The expense involved naturally limits such operations to valuable pure-bred individuals. Time and time again, as a result of having been shipped shortly after freshening or so as to calve in transmit, fresh cows have been ruined so far as the next lactation has been concerned.

Milk cows of grade breeding usually are shipped by freight, and the experienced shipper selects only dry cows and "far-springers" for long shipment. Heifers which have never dropped calves and which are not due to freshen until three or four weeks after arrival at destination make good "buys" as they are of a size and condition which permits of loading the car to capacity. Furthermore, immature animals are less susceptible to injury in transit and to damage as a result of a marked change of environment.

If possible, ship only animals without horns. In case horned animals are shipped they should be tied securely or penned off in one end of the car to preclude the possibility of injuring the other animals during the trip. Similarly, when bulls are shipped in mixed loads, they should be securely penned apart from the females.

So far as possible, the stock should be shipped during cool weather, as cows handled during hot weather are liable to shrink in milk flow during the lactation period as a consequence of such a trip.

Special precaution must be exercised in shipping cows during codl weather, to avoid exposure which will favor the contraction of pneumonia, usually a fatal disease among mature cattle. At best it takes an animal bout a year to become thoroughly acclimated to a warmer or colder climate, and on that account the movement should take place when the temperature of the two points is as nearly similar as possible.

Dairy cows should be handled under normal conditions before and during the trip. They sould be fed and watered at regular intervals; and if any of the animals are in milk, they should be milked on schedule. It pays to feed ensilage and hay during shipment if the cows are accustomed to these roughages. Simple provision for the feeding of these materials can be made by stretching small-mesh hog wire along the side walls anad ceilings so as to form a wedge shaped bunk which can be filled with hay and ensilage in proportion to the appetite of the cattle. Grain is a difficult material to feed in transit in a freight car where no special provisions are made to prevent wastage as a result of the tendency of the animals to move about when not fastened in place. In long trips grain may be carried in the car and fed at points where the stock is unloaded.

Several large barrels fo water as well as plenty of feed should be carried in the car as protection against delay or accident which may detain the train and leave the animals hungry or thirsty for excessive periods.

Sand or cinders constitute the best bedding materials, and during long trips fresh supplies of these materials should be placed in the car at unloading points in case they are needed. In view of the high price of dairy cows at the present time it is imperative that every stockman exert all efforts to make for cow comfort in transit and to move the animals with a minimum of loss as a result of carlessness, lack of attention, and inexperience in the cow-shipping business.

UTENSILS THE CHIEF SOURCE OF CONTAMINATION

The fact that dirt which falls into milk at the barn is readily visible in the milk has led to the conclusion that the barn is the principal source of the bacteria in milk. The results of a study of the question by the University of Illionois, show that it is the utensils, rather than the barn, that are largely responsible for the excessive bacterial contamination of milk. The extent of the contamination of milk by the utensils is strikingly illustrated in one of the experiments in this study; when all utensils commonly used for handling the milk at the barn and in the dairy were thoroughly steamed, the bottled milk had uniformly only about 5,000 bacteria per cubic centimeter, but as soon as the steaming was omitted the bottled milk frequently contained several hundred thousand bacteria per cubic centimeter.

The cans for shipping milk are a particularly prolific source of bacteria when they are washed at the dairy and retruned to the farm without being thoroughly steamed and dried. The number of bacteria usually added to the milk by such cans is many times larger than the number that would ordinarily get into the milk at the barn; the addition of a million bacteria per cubic centimeter of milk

The Basis of Profitable Dairying

The influence of feed on the production of milk is striking. No matter how good the individual dairy cow is, the quantity of milk she yields is, within wide limits, directly dependent upon the feed she receives.

If a cow is subjected to feed of poor quality, unpalatable and indigestible, no matter how much she may be fed, she is sure to go away down in her production and will not yield any profits. Such a cow becomes a "boarder"—that is why our experts have compounded a mixed feed, properly balanced according to the needs of the dairy cow, rich in milk-producing nutrients, with a high percentage of these nutrients in digestible form.

Monarch Dairy Feed

a rich feed, but not too concentrated to feed alone and when fed liberally to dairy cows it will get the highest production possible with the least cost. There is no wastage in Monarch Dairy Feed—every pound has milk-producing value in it and more of it goes to the actual production of milk than of other feeds because such a high percentage of it is digestible.

Monarch Dairy Feed is composed of Oil Cake Meal, Cotton-seed Meal along with Bran, Barley feed and Corn feed. The mixture of Oil Cake and Cotton-seed Meals counteracts the constipation that would be caused by Cotton-seed Meal if fed alone.

Give Monarch Dairy Feed a trial and if the dealer in your district does not handle it, send us his name and we will see that you get it. By ordering early you will assure delivery when needed.

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THE CANADIAN SALT CO. LIMITED

by such cans is not uncommon.

A detailed comparative study of the effect of the various other utensils at the barn and at the dairy suggests that the greatest contamination comes from the more complex apparatus, such as the clarifier and the bottle filler. In one of the experiments in this study, it was found that the pails added approximately eleven times as many bacteria to the milk as the barn influences, the strainer one and one-half times as many, the clarifier thirty times as many, the cooler ten times as many, and the bottle filler sixty times as many—a total of 112 times as many added by the utensils as by the barn factors. It seems that in an attempt to produce milk with low germ content too much stress has been laid on practices of minor importance and the influence of utensils poorly steamed and not dried has been commonly neglected.

BUTTER A HEAT PRODUCER AND BRAIN OILER

Milk-fat, when churned, is changed into butter fat, and thus becomes a valuable source of body heat, a spceial nourisher of the finer parts of the body and particularly a means of supplying oil for the busy brain. Before a man can act wisely and well he must think clearly. Before he can think clearly the brain must be properly fed and be well oiled. Such delicate and complicated machinery is found nowhere else in nature as found in the human brain. When the brain goes rong, everything is wrong with the man to whom it belongs.

Knowing these facts, we wonder that people are willing to buy a so-called substitute for butter in the form of oleomagerine because it is a few cents cheaper than butter. In all probability, for every 10 cents saved on butter, 10 times this amount will be paid in doctors' and nurses' bills.

Nature never intended mankind to use cottonseed oil or similar product as food for humans. The lower animals, with much stronger digestive apparatus than has man, find it extremely difficult to digest and assimilate the by-products of cotton.

The best and safest kind of butter is that made from pasteurized cream. Especiall is this true of butted which is made to be held for some time in cold storage, or elsewhere, before using. Butter made from raw cream is very likely to go off flavor, if not consumed within one month after making. If Canadians are to be able to do heavy and effective brain work they need to eat plenty of good butter, and to leave butter substitutes alone. If we wish to degenerate into Class B or lower, leaving butter out of the rations is one sure way to accomplish this.—Prof. H. H. Dean.

YOU CAN'T KEEP CREAM ON THE BOTTOM

In the lexicon of youth, my boy,
There's no such word as fail;
You may be late in grabbing off
The honors and the kale,
But they can't keep the good men down,
No matter where they sot 'em.
The good stuff gets to the top at last,
You can't keep cream at the bottom.

If you've got the stuff beneath your hat,
And the will to do or die,
They cannot keep you down my boy,
No matter how they try.
Just buckle to it—hit the grit—
You'll fool 'em all, dod rot 'em!
The good stuff gets to the top, some day.
You can't keep CREAM on the bottom!
—Meadow Gold Messenger.

GET RID OF CULL DAIRY STOCK

Every dairy breed produces a number of undesirable animals; and now is the time for the close culling of our pure bred herds, while the culls will bring twice as much for beef as in normal times. In season and out of season I have advocated close culling; for with the high prices for feed and labor it is an economic waste all round to keep an unprofitable cow. We keep cows for milk; the calf is a by-product. No cow not returning a good profit on milk produced should be retained as a by-prduct producer. We may be sure that for the next few years the number of cows and heifer calves slaughtered in Europe for meat will be les sthan normal, and that the shortage will be made up by meat importations. We shall get our share of the trade, and it will have its effect on the market price to be obtained for cull stock. Then if you have not done so already, clean up now; you wil lnever have another opportunity like the present.

The sum of $16,000 was recently paid by Messrs. Vermack Brothers, of Capetown, South Africa, for Kopjes Kraal Marthus 3rd, a young Holstein-Friesian bull, which 18 months previously had been bought by the vendor for $475. This young bull was among the leading prize-winners at the Natal Royal Show, held in June last, and comprised one of the offerings in the $500,000 pedigree stock sale, held the last week in September, by Messrs. Roderick & Co., Ltd., of Bloemfontein.

In skimming a hundred pounds of 35 per cent. cream, 15 more pounds of skim-milk is kept on the farm than when the same amount of 20 per cent. cream is taken. This saving can be accomplished by a turn of the cream screw, and at present feed prices is well worth the effort required. More skim-milk on the farms also means more calves raised to furnish meat and milk for all. Milk producers are paid for the butter-fat in cream; not for the water and other constituents. This makes it advisable to skim a rich cream, so that as much valuable skim-milk as possible may be saved for feeding purposes.—U. S. Food Administration Bulletin.

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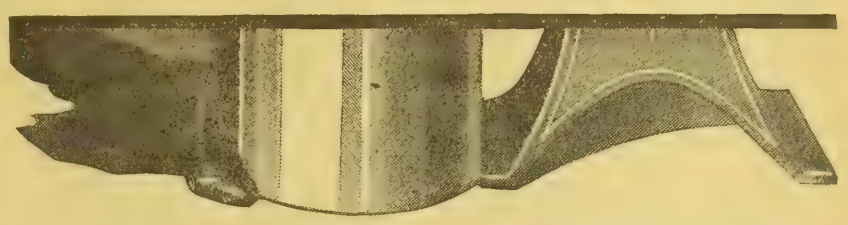
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EASIER TO TURN: The low speed of the De Laval bowl, the short crank, its unusually large capacity for the size and weight of the bowl, and its automatic oiling throughout, make it the easiest to turn and least tiring to the operator.
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LIVE STOCK.

A TREATISE ON BLACKLEG

Blackleg, also called blackquarter, quarter-ill, symptomatic anthrax, and is also known in France as charbon symptomatique, is an infectious disease, confined mainly to young cattle, from about six months up to two years or two and one-half, and may also attack sheep, goats, rabbits and pigs. but is innocuous to man.

This disease is due to the germ the bacillus of blackleg, and belongs to the anaerobic aerogenic class of bacteria.

Analobic bacteria are those that live and multiply best without air, and this disease is never found affecting an animal in the vicinity of an open wound, although the germs may enter the system through an abrasion of the skin.

And is called aerogenic because it is one of the germs that produces gasses in the tissues, these gases are always found in the swellings of blackleg, and are the cause of the rattle or crackling sound made when the hand is passed over the swelling, and will come out in bubbles when the tumor is cut into.

Seldom are very young cattle affected, probably from the fact that their diet at this age consists chiefly of milk, and I have found that the older the animal is, the quicker it will succumb to this disease.

The period of incubation, or in other words, the time between when the germs enter the system and when the disease manifests itself, is from two to seven days.

The germs are found in the soils and pastures, and appear to be most prevalent in low wet and undrained places, and the hay and grasses cut from these places may retain the germs or their spores, and the animal may become infected in the stable in the winter time.

Animals do not get blackleg from contact with affected animals, but from the soil or pastures where the disease exists, although it may be by artificial means transmitted from one animal to another.

The germs may gain entrance into the system by either food and water, or through abrasion of the skin, and germs may get into the system by the mouth due to irratation caused by the shedding of the milk teeth.

Usually, the first thing noticed is one or more dead animals in the pasture, or an animal may be noticed away from the rest of the herd and lying down, very dull, with no appetite, and if not already, there will, in a short time, be enlargements from either on the neck, flank, head, or on one leg, and in which case the animals will show lameness (this lameness is sometimes taken for an injury.)

This term blackleg or blackquarter is somewhat misleading, as quite frequently the swelling is found on the neck or side of the animals, or, as I have found it several times, on the back just above the kidneys.

These swellings are at first quite hot and painful, and if pressed on or manipulated with the fingers have a rattle or crackling sound, if cut into the tissues are found to be of a dirty brow nor nearly black color, and will contain bubbles of gas. In a great many cases, the tissues show streaks of healthy and then black looking muscles and it will be noticed that when cutting into the tumors when the animal is living the skin may show a little tenderness, and the rest of the operation is painless.

All carcasses of animals dying from blackleg should be either burned or buried as soon as possible after death, and should not be removed away any more than is necessary, as it would be the means of scattering infection. While burying will not destroy the germs inside of from six to eight months, it will prevent dogs and coyotes from carrying pieces around the pasture, thereby leaving more and new infection for other outbreaks later on.

As this is up to the present time practically an incurable disease, I say practically because a few cases have been cured, we have to look to the preventive measure, which is vaccination.

There has been on the market for some time a vaccine in pill form, also one which was used with a few inches of tape which was jabbed into the animal; this last method was in my mind the most crude and impractical ever tried. There is now on the market a vaccine called liquid germ-free blackleg vaccine and is, I would say, the most rational and the safest vaccine to use.

While not going into the method here of the preparation of these two forms of vaccine, that is, the pills and the liquid form, it is sufficient to say that they are made from the tissues of animals that have succumbed to blackleg; the pills contain the dead bacteria, their spores and toxins, while the liquid consists of the toxins only, and does not contain any germs, either dead or alive.

Although these pills have been used for a number of years by stockmen with fairly good results, there has been various fatalities following their use, as to saying these pills the cause of death, we cannot, although I believe that in many cases they are.

There are four factors any one of which might be the cause of death following vaccination with the pills.

First, we will say that possibly the needle was dirty and set up septicemia(or blood poison) and such a case would or might be a little difficult to distinguish from blackleg.

Second, that the animal was already affected with blackleg, and if so, the pill would have the effect of hastening death rather than preventing it.

Third, when a number of deaths follow vaccination, it would be possible that the needle was plunged into an animal already affected with the disease, and if then used on other animals, with out first cleaning, would be the means of affecting several succeeding animals, and, in this case, also, the pill would be of no avail.

Fourth, and the one which I believe is the most likely, and the most common is that the pill might have contained some of the live germs as well as th edead ones, thereby giving the animal the blackleg instead of preventing it. This last, and the one I believe is the most important, could never happen if the germ-free vaccine were used.

Although stockmen are more and more beginning to recognize the practicability of vaccination, there is not yet one-half the vaccination done that should be. I would strongly advise all stockmen to vaccinate their young stock in the early spring, before they are turned out to pasture, and if such were done, and the liquid germ-free vaccine used, we would, in a short time, instead of having a large number of deaths yearly from blackleg, we would seldom hear of a case.

While the liquid vaccine is no doubt a little more difficult to use, and will take up a little more time as it is necessary to use a hypodermic needle, yet this is of little consideration when the results are going to be one hundred per cent. better.

Considerable care should be taken as regards the antiseptic precautions, such as clipping the hair, disinfecting the skin and also the needle before and after each indviidual animal.

And unless the person is accustomed to using a hypodermic needle, and can keep it clean, they would do far better to engage the services of their local veterinarian, although costing a little more at the time, he will have the satisfaction of knowing that the work is done right, and the better the vaccination is done, just that much better will be the results.—By W. J. Moon, V. S.

HOW TO DIAGNOSE DISEASE IN ANIMALS

The pulses, respiration and temperature varies with each class of animal so that a knoldege of the normal rate is of utmost importance. The character of intermittent expansion of the arteries, called the pulse, informs us as to the condition of the heart and blood vessels. The frequency of the pulse beats varies in the different

Grofast Calf meeal will raise equally as good calves as whole milk at a fraction of the cost. Hundreds of tons used annually in the Province of Quebec. Thousands of testimonials from satisfied users.

Gentlemen:— Ingersoll, Ont., Feb. 8th.
I have used a lot of your GROFAST CALF MEAL during the past three years. After my calves are three days old they get nothing but skim milk and your CALF MEAL, and I raise equally as good calves as I ever did on Fresh Milk, at a fraction of the cost.
Yours very truly,
(Signed) RICHARD ARCHER.

Dear Sirs:— Calumet, Que.
I have used 500 pounds of GROFAST CALF MEAL this year and never used the like of it. My calves are as fine a bunch as I ever raised on milk.
Yours very truly,
(Signed) JAMES BENNETT.

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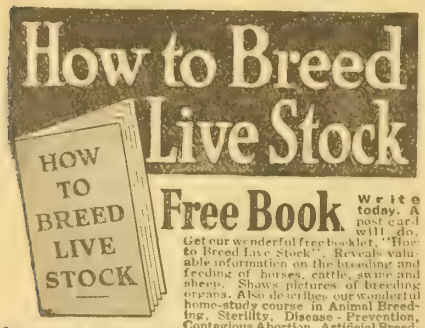

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species of animals. The smaller the animal the more frequent the pulse. In young animals the number of beats per minute is greater than in adults. Excitement or fear, especially if the animal possesses a nervous temperament, increases the frequency of the pulse. During, and for a short time after feeding and exercise, the pulse rate is higher than when the animal is standing at rest.

Normal Pulse Beats

Horse	36-40 per minute
Ox	45-50 per minute
Sheep	70-80 per minute
Pig	70-80 per minute
Dog	90-100 per minute

The horse's pulse is taken from the submaxillary artery at the point below the angle of the jaw. It is here that the artery winds around the inferior borders of the jaw in anupward direction, and because of its location immediately beneath the skin, it can be readily located by pressing lightly over the region with the fingers.

Cattle pulse is taken from the same artery as in a horse, although it is not so easily located, because of the mass of muscular tissue.

The sheep's pulse may be taken directly from the fermoral artery by placing the fingers over the inner region of the thigh. By pressing with the hand the region over the heart we may determine its condition. The dog's pulse can be taken in the same region.

The dog's pulse is usually taken from the brochial artery. The pulse wave can be readily felt by resting the fingers over the inner region of the arm and just above the elbow.

Respiration

The frequency of the respiration varies with the species. The following table gives the frequency of respiration domestic animals:

Hore	8-10 per minute
Ox	12-15 per minute
Sheep	12-20 per minute
Dog	15-20 per minute
Pig	10-15 per minute

Body Temperature

There is a wide variation in the body temperature of domestic animals This is especially true of cattle, sheep and hogs. In order to determine the normal temperature of an animal, it may be necessary to take two or more readings at different times, and compare them with the body temperaures of other animals in the herd that are known to be healthy.

Exercise, feeding, rumination, excitement, warm, close stables, exposur eto cold, and drinking ice water are common causes of variations in the body temperature of domestic animals.

The average normal body temperature of domestic anlmals are as follows:

Horses	100.5 degrees F.
Cattle	101.4 degrees F.
Sheep	104.0 degrees F.
Swine	103.0 degrees F.
Dog	101.4 degrees F.

INTERNAL AND EXTERNAL PARASITES OF SHEEP

"Tuberculosis is practically unknown among sheep, and they are free from many of the contagious diseases prevalent in other farm animals, while Canada is freer from sheep diseases than any other country." This was the opening remark made by Dr. D. C. McGillivray, of the Ontario Veterinary College, in his address at Toronto before the Canadian Sheep Breeders' Association on maintaining a healthy flock of sheep for productiveness. Such a statement—coming from such a recognized authority should give confidence and encouragement to greater efforts for sheep breeding in Canada.

The speaker said that in selecting the areas suitable for sheep, the high and dry places should be made to get away from the low lying marshy land, or drainage should be resorted to if such places existed on the farm.

External Parasites

Parasitic diseases were most common in low lying marshy land, and they were the cause of the greatest loss amongst sheep. Parasites were of two classes, external and internal. The external ones were lice, ticks and scabmite, and none of these should be in existence at all a sthey could be stamped out by dipping. The carelessness of a few farmers in this matter was enough to keep the whole sheep industry in a continual war against external parasites. There were a number of commercial dips on the market and a number of artificial ones that could be home made; all were good when properly used. In coal tar dips it had been found much more effective and benefical to the wool if soap was added. Lime and sulphur dips had a tendency to spoil the texture of the wool. The best time to dip was immedaitely after clipping but dipping should be done every time it was necessary either as a preventive or as a cure. If fall dipping was done a warm day should be chosen or a warm place to herd them in till they were thoroughly dry.

Internal Parasites

Internal parasites were round worms, tapeworms, nodular worms and lung worms. One striking remark he made in preference to the eradication of all parasites was: "the price of safety is eternal vigilance." The purchase of rams was one of the chief causes of spreading the diseases arising from worms. Certain districts were badly affected and lung worm dsease was imported by buying sheep from these districts, and once a pasture was affected it was impossible to clear it from the pest. Lung worms showed their first signs in the lambs, by their commencing to cough. It was not found in lambs up to six or seven months old, but reached its heights at nine months old. Farmers who went in for selling fat lambs should get them on the market before they were nine months old. Weaning time was the period at which lambs were most liable to be affected, and for a cure, Dr. McGillivray advocated the injection of turpentine into the windpipe.

The nodular worm confined its work to the small intestines and the chief cause that gave rise to this form of parasitic disease was feeding on low swampy land. Feeding of salt to sheep had a great effect in ridding them of parasites. Fluke disease was particularly free from Canadian sheep but the ordinary stomach worm was very prevalent, and the most destructive among sheep in Canada. For stomach worms the best agent was the oil of turpentine, and half an ounce was about the average dose for a sheep. Ground blue stone had also proved its beneficial effects with stomach worms; a teaspoonful for every sheep, mixed with the feed was the quantity sufficient to free affected animals of stomach worms.

Foot rot could largely be controlled by dipping, but for its prevention, the hoofs of the flock should be examined and any overgrown or ingrowing hoof that collected dirt should be pared off. Restrictive measures should be adopted to prevent sheep affected with lip and leg ulceration from being taken from one place to another as it was very contagious. Every sheepbreeders' association should be acquanted with infected districts and no animals should be purchased from such a district.

ELEVATOR SCREENINGS GOOD FEED FOR HOGS

In order to test out the feeding value of recleaned elevator screenings, a pig feeding trial has been carried on at Brandon Experimental Farm. These screenings are now graded as "Standard Stock Feed" and were formerly known as "Grade A" screenings. They consist chiefly of broken and shrunken wheat, wild buckwheat, oats, flax and other edible seeds and only a very small percentage of chaff and small weed seeds. This feed was bought at Port Arthur for $35.00 per ton; freight hauling and grinding raised the cost of it to $42.00 per ton delivered at the Farm.

They were tested against Barley chop at $45.00 per ton as the main feed, and a series of 12 experiments were carried out. The pigs were all of the same age and a very uniform lot consequently very good results were obtained.

The average of 6 lots for which screenings were the main feed were:
Lbs. grain to 100 lbs. gain of pork 453
Average daily gain per pig....1.54 lbs.
Lbs. grain to 100 lbs. gain of pork.....453 "
Cost per 100 lbs. gain..... $10.34

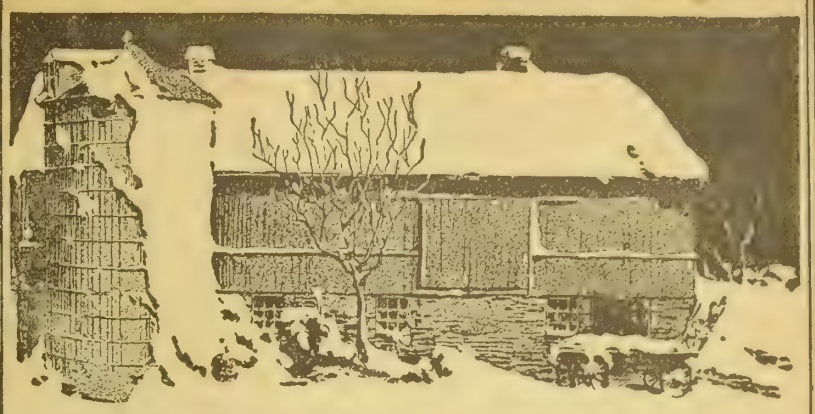
Average results of 6 lots for which barley was the main feed:
Average daily gain.... .....1.5 lbs.
Lbs. of grain to 100 lbs. gain of pork.....4.46 "
Cost of 100 lbs. gain..... $10.68

The lots on screenings ate more than those on barley, showing that the feed was palatable. They made slightly larger gains but took more feed to do it.

From this test and previous ones in which similar resutls were obtained, the conclusion was reached that for finishing pigs screenings of the type described are fully equal to barley.

Therefore it would appear that if a uniform grade of screenings can be obtaned they are worthy of a trial by the farmers of Eastern Canada, especially when feeds are as expensive as they are at present.

One difficulty found with screenings in past years has been that they were not uniform; one carload would be good and the next almost useless. But if the Federal Feed Division can give the farmers any assurance as to the quality of these screenings they can rest assured the farmers will buy them.



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MANY INTELLIGENT HORSES ARE SPOILED IN TRAINING THROUGH BAD MANAGEMENT

There is a false idea abroad among many teamsters and would-be horsemen that a certain amount of harsh treatment and horse lashing has to be done to cure a horse of shying, balking and similar vices. These vices are the offspring of a natural train in the horse that is an heirloom from his progenitors in the wild state and when this fact becomes better realized, the cruelty to horses in the training, should cease to exist. The horse that balks and shys at every little harmless object in sight has been spoiled by mistreatment of some kind. More than likely the owner has whipped him at one time for doing this very thing. A horse should never be whipped for shying for it will make him more shy, because he will always have a fear of being whipped again for a similar offence.

The abuse of the whip is the cause of many pronounced cases of vice amongst horses, or, in other words, it accentuates the horse's natural tendency to self-defence. The only method the horse in nature employed in self-defence was to run or refuse to go near anything that gave the least sign of danger. And the whip, when unmercifully used, only increases the fear. It can be used with judgment to persuade the horse to be prompt and obedient; but when a thrashing is given a well bred colt never forgets it. This makes it all the more necessary that the horse must know what he is getting the ordeal for, but to lash him for shying at supposed danger is nly to make him more afraid next time. Caress and encourage the horse and show him there is nothing to fear—he will walk up, take a good look, snort and walk on; then the next time he will just look and a word of encouragement will send him along.

The Trainer Void of Horse Sense

The value of horses, more especially the light legged class, is much enhanaced by their fearlessness on the road and their acquaintance with bad treatment generally meted out to the shying horse by its driver.

There are still too many men entrusted with the charge of horses, of the type that seem to delight in their ignorance of the art of true horsemanship. They give occasional exhibitions of their brainless condition when getting ready to leave church after service or similar gatherings. They get aboard the buggy while the horse is quietly waiting, then the racket commences. Whoa! and lash come in alternate rounds, while the sister or mother wait until the storm subsides. Just by a fluke chance they get seatde ; respect for them does not count when the brainless exhibition is on.

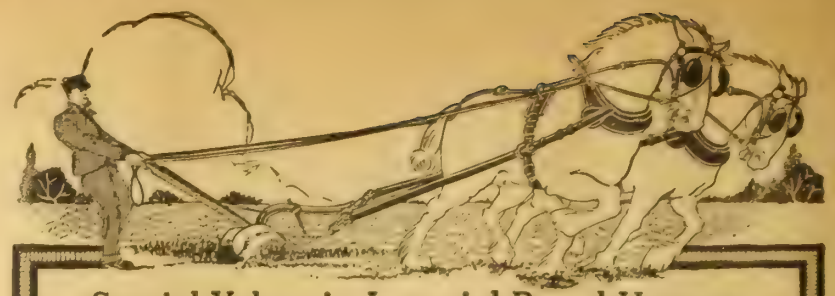
It is the highest accomplishment in the art of home training to make a horse stand and stand quietly till passengers and driver are ready. At every hitching up this should be practiced, even when the driver is the only passenger or however urgent or hurried the call for the journey may be.

There is that intuitive sense between horse and man, sometimes a wireless connection, but at all times it can be sent over by the reins. It is in reining of a driving horse or a wagon team, that the secret of the management lies. A driver should never touch a horse with the whip while the horse is waiting for the sendoff. The properly trained horse is waiting t get his order every time, but when a driver does not sense the ability in the horse to draw deductions, then he is down and out as a horseman ,and fails to get all the utility that a horse is capable of giving. It is entirely the fault of the horseman if a horse will not stand. The horse fears the onslaught he gets every time. A horse that has been spoiled in this manner is never again safe from a sudden bolt or shy.

Often we find horses shying without any apparent reason, and forget that the horse, ever on the alert as to the conditions of his surroundings uses more senses than that of eyesight. In nature their sense of smell is very keen and anything objectionable or smells somewhat akin to animal that has been the hereditary enemy of the horse, he instinctively shies. Young horses that are being or have just been broken in are very apt to shy more or less at various objects until they become thoroughly familiar. If judiciously managed this natural nervousness will soon wear off and familiarity will breed contempt.

A colt should never be frightened; if taken in time and properly handled, he need never know fear. Running after them, and "shooing" at them and the like, makes their training all the more difficult when that stage comes. Such colts that are so herded and frightened never become reliable horses when taken on to the team work on the farm. A colt should only be taught useful lessons, and though the thoughtless may frighten a colt unintentionally, the ordeal is not readily forgotten by so sensitive an animal as the horse. Neither should one make the mistake of trying to teach the colt too much at one time; he should nuderstand each lesson thoroughly before a secnod is attempted. A certain amount of order and regularity should be kept up, a little every day or succeeding days, and not at irregular intervals, at the whim of a would-be trainer. Gentleness and firmness at all times must be practised, and whatever is attempted must be gone through with.

Far too little regard is placed on the training of the mouth, and no particular attention is paid to the hardening process so necessary, not only to the training but the health of the horse. The hands, the rein, the bit and the mouth are the four items of prime consideration in the early stages of the colt's training. No hitching up should be done, and little progress will be made, until the colt gets acucstomed and understands what it all means. The horse's mouth must be trained to be responsive, and on this point the horse is generally subjected to more cruel treatment than from all other causes in training put together. To a large extent a good mouth is natural to a horse, and when thoroughly hardened, by gradual stages, to the bit, he will understand and respond promptly to the slightest movement of the rein. There is no necessity at any time to jerk a horse's mouth; it is an act that will undo any training that has been done on correct lines. The tender and bad mouths result from improper handling. They cause many imperfections, dihealth, and lessen the pulling power of the farm horse. The natural gift of a horse is changed and spoiled very often from bad usage with bitting and a consequent tender mouth. This is occasioned by the horse having to hold his head in such a way as will save the bit from iritating some part of the mouth. Tongue lolling, crossing the jaws and many other defects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arise from bad handling with the bit and soncequent inroad is made on the health of the animal. Long before a colt is fit to take his place in the team he should be thoroughly trained to the touch of rein and bit. When done with gentleness and firmness a colt becomes intelligent and takes pleasure in the exercise. The winter months give the opportunity and it is one of the horse breeder's paramount duties to acquire the art of training as well. There are horses that are dunces, that never will make good at work, and it is one of the aims in Cyldesdale breeding in their native land to weed out these strains. But many a sensitive animals is spoiled through the man being a dunce at the training. Study the horse; a spirited animal is the best teacher, becomes the best servant, but is easily ruined for full utility.

WHICH TYPE OF HORSE IS BEST?

reader writes: "1.—The majority of farmers in this district say that a horse weighing between 1300 and 1500 pounds is the most economical farm horse to keep. They claim that he will do more work than a 1600 or 1800 pound horse. Is this true?

"2.—What number of hours per day should a team work in the field through the summer season?

"3—How many miles per day should a team walk when plowing?

"4.—What teeth does a horse lose at four years of age? Does it affect his digestive system sufficiently to lessen his capacity for work?

"5.—Does it pay to breed a mare at two years of age and to let her run with the colt at three years of age, and not work her that season?"

1.—This uqestion asks only which type of horse is most economilcal to feed and which will do the most work. This is decided wihtout the consideration of the question of weight at all. It depends largely upon the individuality of the horse, and also upon the character of the land to be worked. We have seen big horses that could not compare with smaller horses for farm work, and we have seen big horses that could stand work much better than their smaller mates.

More definite information could be given by taking as an example two horses of excellent conformation, strong constitution, good doers and steady in harness, one weighing 1400 and the other 1800 pounds. For average farm work the advantage in the smaller horse would be that he would possibly eat slightly less feed to keep in good condition, would he handier to work around and handier in harness; wuld adapt himself better to work that required activity and movement at the trot. The advantage of the heavier horse would be in his ability to stand heavier work such as hauling machinery in heavy land, and having extra weight to exert in a heavy pull.

On this basis it will be seen that four 1800 pound horses could do the same work as five smaller ones where very heavy work is required.

nI addition to this the big horse has a derided advantage as a commercial proposition. He is worth $100 to $125 more on the market, all other points being equal. A good draft gelding weighing 1800 pounds sold in Winnipeg recently for $345. Such a price could never be obtained for a 1400-lb. horse except as one of a reaI well-matched team wanted for some special purpose. Where a farmer had nothing in view but regular farm work on average soil he would find the 1400-lb. horse most satisfactory. If, on the other hand, he had the commercial phase of the question in view he would be advised to handle the bigger, higher-priced type of horse.

2.—With average care any team should be expected to work 9 to 9½ hours per day in the field. By this we mean at actual work and not going to and from work. Many a team is obliged to work 10 hours a day in the field.

3.—Under average conditions, such as average soil, average summer weather, and an average length of furrow, an average sized team should travel at the rate of 2 to 2¼ miles per hour. nI nine hours they would travel 18 to 20 miles.

4.—Between the ages of 2½ and 3 years of age a horse loses the centre two teeth, between 3½ and 4 years the next pair and between 4½ and 5 years the outside pair. At 4 years of age a horse is often unable to stand work as well as when 3 year sold. This is due to the fact that his broken mouth prevents him from chewing his feed to advantage.

5.—Possibly on no other subject of horse breeding is there greater difference of opinion than on the question of breeding a young mare at two years of age. A few days ago the writer was discussing this matter with an experienced horse-breeder and he favored the idea very strongly. He claimed that a well-developed two-year-old filly will make a better brood mare if she is bred at two years, and if given reasonable care the following year will not be stunted in growth. He advised against breeding an under-sized filly, as under certain conditions she might not grow out after having a foal.

It would appear from the experience of several successful breeders that a well-developed filly may profitably be bred at two years of age. The following season she should not be worked, but left to run with her foal all summer.

We would welcome a discussion from our readers on this latter question.

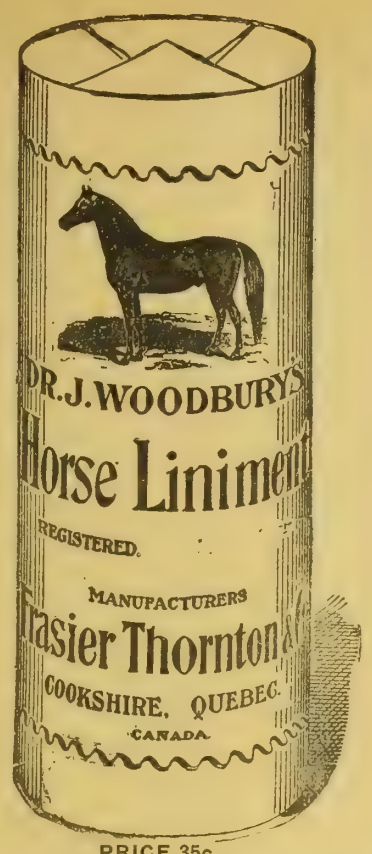
DETECTING BLINDNESS IN THE HORSES

In a discourse on detecting unsoundness in horses, Dr. A. S. Alexander, the well known authority says, re examining the eyes: Coming to the region of the eyes remember that a deep depression above the eye, or supra orbit, as it is technically termed, is most marked in the old horse and practically absent in the young one, the part being filled with fat. To make an old horse appear younger, the "gyp" horse dealer fills the cavity with air, a trick called "puffing the glims." The finger detects this at once, as a cracking sound is emitted on handling, and in addition one will notice that the hair on the temple of an old horse has turned grey, while the lower jaw bone feels sharp and thin, and the bearing of the grinding tables of the teeth also tells the story of advancing years.

In a dark place the pupils of sound eyes dilate, so lead the horse into the light and notice if contraction of the pupils occurs. If it does not, the eyes are unsound. In blindness from paralysis of the retina and optic nerves (amaurosis, or "glass eye") the pupils are permanently dilated and the eyes consequently appear unusually bright and prominent, although the horse is "stone blind." Such a horse can look squarely at the sun without blinking.

Books and articles on the examination of horses for soundness advise that the soundness of the eye should be tested by a threatened blow of the hand. If the horse can see, he flinches on noticing the approach of the hand. otherwise there is no winking of the eyelide. This test is useless, if not very gently done. A blind horse will wink. if he feels a column of cold air strike the eye, or if the fingers touch one of the long hairs projecting from the skin under the eye. Look for these long hairs. They are called "tentacles," have special nerve endings, so are sensitive and when touched communicate the message of impending danger to the brain, and the eyelids instantly close. They serve the same purpose as the long hairs or "feelers" projecting from each side of the muzzle of the cat, and in the horse also are found in that region.

A warm bran mash given once a week will be highly relished by the horse. It must not be made too thin, but just wet enough to be moist. It is improved by adding a pint of whole oats to three or four quarts of bran.



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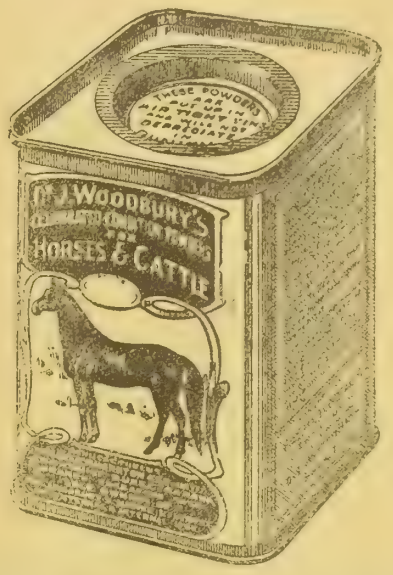

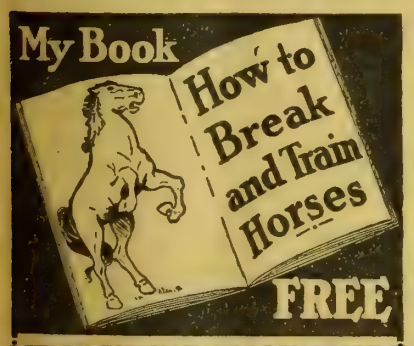

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POULTRY.

MATING STANDARD POULTRY FOR PRACTIAL PURPOSES

The term "practical" is used here in the broad sense in which it applies as truly to all things that help to create and maintain interest in poultry production as to the things which relate particularly and directly to the production of eggs and meat.

There is nothing in the nature of poultry that would prevent supplying the world with all the poultry products it could use from races of poultry not attractive to the eye and not uniform in appearance. But there is that in the nature of man which makes poultry keepers give more careful attention to flocks in which they take pride, and makes the sight of a uniform, handsome flock effective beyond all other things in extending interest in poultry culture.

Pride a Factor in Success

It is a general fact in the history of modern poultry culture that interest in poultry having distinctive appearance is essential to any marked increase in poultry products. It is also a matter of common observation that poultry keepers who are indiffrent about the looks of their stock rarely make notable success. Good work with stock that does not look good is not impossible, but what there is of it is occasional, irregular and spasmodic. As a rule the owner of a flock of mongrel-looking poultry that does uncommonly well soon begins systematic efforts to improve its appearance.

A good looking flock is a standing advertisement of a certain measure of efficiency in poultry culture. It is plain evidence open to all of skill in breeding and growing poultry; while performance, especially in egg production, is celebrated only as far as detailed accounts of it are published.

Appearance speaks for itself; performance in this line must have some one to speak for it. Sufficient attention to appearance to secure uniformity in a flock is in the highest degree practical. Experience has shown over and over that where this is lacking, interest is apt to flag and production is not maintained.

American standards for poultry express the characteristic American attitude in regard to combining beauty with utility in the individual bird and in the breed. While a few breed types show the development of superficial characters carried to extremes which unfit the breed for common use, these extreme developments are all of foreign origin, the popularity here of the breeds possessing them is very limited, and the influence of the common American demand for use with beauty tends constantly to modify extreme types.

Beauty and Utility in Combination

The American idea of utility and beauty in combination in domestic animals and birds is, that those forms and elements of beauty which are expressions of actual worth, and those which are attractive and in no way inimical to utility qualities should be cultivated, but that those which are in any measure incompatible with usefulness ought to be eliminated. The elimination or modification of characters undesirable in poultry kept for use under ordinary conditions is distinctive of breeds of American origin, and of American types of breeds of foreign origin which attain any popularity here.

The mating of poultry to conform to the American Standard of Perfection's requirements, and at the same time give good and satisfactory results in meat and egg production, is in practice a matter of progressive selection, beginning with selection for the desired utility properties It differs from ordinary selection for producing Standard exhibition stock in that no measure of merit in any exhibition quality is allowed to offset distinct lack of utility value.

This principle is not as drastic in operation as it appears in statement, for in all the popular varieties of poultry, and in most others as well, the Standard type is either a good utility type or a reasonable interpretation of the language of the Standard admits of the development of a type that is at leas not seriously objectionable from a utility standpoint. The birds rejected in this process of selectons are those which conform better to the superficial than to the substantial requirements of the Standard.

Weight a Measure of Size

The first step in this selection is the discarding absolutely all specimens that do not closely approximate the Standard weight for their breed. In any Standard breed, the Standard weights for adult male and female are the most desirable weights for breeding specimens. The weight of a bird in good breeding condition, well fleshed and firm in flesh, is as satisfactory a measure of size as can be used in selection for breeding and rigid application of the rule to use only specimens closely approximating Standard weights for adults, with due consideration of type, virtually insures that the stock will be kept in size.

The weight for adult birds should apply just the same to young birds used in breeding, for immature birds are not fit for breeding, and young birds that at maturity are much under weight are most undesirable. Rigid adherence to exact Standard weights is, of course, impractical, but it is advisable to avoid variations of more than five or six per cent. either way.

After weight, type should be considered. This must be judged with the eye. There is more room and more excuse for latitude on this point than for latitude in weight. Weight is measured by one fixed standard of measurement. Type is made up of several elements, and estimates of type must be more or less a matter of opinion. In common practice selection for type comes down to the rejection of specimens that are unmistakably off-type, to a careful matching for type of the females used in each mating, and to the mating of each male to the females which in union with him will reproduce the breed type most satisfactorily.

Consideration of Type

A proper appreciation and consideration of type as it relates to mating covers a number of points commonly treated as independent. Most important is the question of vigor and vitality as expressed in type. The Standard type of a breed presents, with a certain size and form, a carriage and symmetry which are the result and expression of vigor, vitality and a perfectly balanced structure, and are, therefore as much a part of type as length, bredth and depth of body, or length and character of neck and legs.

The vitality and perfection of type which make a bird naturally "carry itself well" are possessed in much higher degree by some birds than by others which, when stripped of their feathers, appear almost identical in form. Almost all birds can be taught to stand for inspection in a pose that shows true breed type, but a bird which does not naturally assume the poses which show its type to advantage is not desirable as a breeder, because its indisposition or inability to carry itself well at all times comes from some structural or constitutional fault which impairs its value as a producer of offspring of marked practical value.

A further test of the vitality and vigor of birds is obtained by observing how they bear unpleasant weather conditions and sudden changes of temperature, especially changes from warm or comfortable to raw, chilly weather. Susceptibility to such changes shows a lack of robustness of constitution and poor circulation of the blood. Many birds which look fine in pleasant weather appear dejected and miserable on dull days. Whole flocks often behave in this manner. However common this may be, it is not normal. Perfectly sound and healthy creatures are not so affected.

Causes of Lack of Vigor

Sometimes wrong management, putting the stock out of condition, is the cause. Bad ventilation in poultry houses, underfeeding, overfeeding—especially the too free use of highly concentrated feeds to force growth or egg production—are common causes of a condition of the system which makes poultry unduly susceptible to ordinary weather changes. Where wrong management is discovered, correct treatment will cure most birds of he habit of huddling about in dull weather. Birds that are noticeably susceptible when the environment is in all respects good ought never to be considered as breeders.

Due consideration of type on the lines indicated above automatically covers the characters and conditions of head and foot points which are coordinated with high vitality. A bird that is beyond criticism in these sections may fail to showw good general breed type and a carriage expressive

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of vigor, but a bird that shows these general qualities in high degree cannot be defective in the head and foot points desirable in a breeder, for if it is its general attitude and carriage are affected.

Approrpriate size and type, and the vitality that gives and expresses perfect health and condition, then, are the essentials in mating Standard poultry for praactical results. On this foundation the breeder who desires to produce birds of high exhibition quality can build with certainy that his stock wil lalso be notable for its practical qualities.—U. S. Department of Agriculture.

HATCH CHICKS EARLY IN THE MARITIME PROVINCES

(Experimental Farms Note)

From records kept at the Eperimental Fam, Nappan, as well as thorughout the Experimental Farm system, it is evident that the early hatched pullets are by far the most profitable ones. For they are producing eggs at that period of the year when the demand is greatest and the highest prices realized.

This is an important factor in successful poultry raising. When one considers the high prices paid for all feeding material the object should be to produce pullets that would lay during the winter months in order to reduce to a minimum the cost of maintaining the flock through the most expensive period of the year.

Now the question arises, "Can early chicks be produced in the Maritime Provinces successfully?" The answer is "Yes." But in order to do so the poultryman must start with the parent stock that is with the flock that is to produce the eggs.

The fertility of the egg and also the vitality of the germ must be kept to its maximum if the best results are to be obtained. This can be done only by judicious feeding and careful attention to the flock that the birds may be healthy and vigorous during the breeding season, for birds lacking in vigor and health will produce chicks low in vitality. Such chicks will not withstand the extremes in weather conditions exeprienced in these provinces during the early spring.

The eggs should be collected promptly before they become chilled and stored in a room where the temperature is about 55 to 60 degrees, avoiding extreme heat or cold. Best results are obtained where eggs can be set from two to three days after they are laid and should not be kept longer than one week, especially for early hatches.

All incubators should be thoroughly disinfected and cleaned before the eggs are set and an even and normal temperature kept throughout the period. If hens are used for setting they should be in a good healthy condition and free from lice; otherwise they will be uneasy and perhaps leave the nest and allow the eggs to get chilled. Greatest care and attention should be given them during this period.

When chicks are hatched artificially they should be put into a clean, warm brooder where the temperature wil lbe from 90 to 100 degrees. They require plenty of fresh air and as they grow older they need all the sunshine possible. With hen hatched chicks, put the hen in a coop and place it in a comparatively warm place for the cold weather.

Have plenty of clean, wholesome feed for chicks. Dried bread crumbs is an excellent feed to start on; plenty of milk may be given at all times, green feed in the form of sprouted oats or such like is most essential for young growing chicks. Don't feed too much of any kind of feed at one time, just what they will clean up in a few minutes, but feed little and often especially during the first few weeks.

Just as soon as the ground is dry enough and the days are warm and sunny let them out for a short time during the midde lof the day. Plenty of exercise is absolutely necessary for vigorous and healthy chicks. To make poultry pay, winter eggs are necessary. These can be secured from well matured pullets only and the arly chick is the only one that matures before winter. Therefore, if you want to succeed hatch early. April 1st to May 15th is the best time in the Maritime Provinces.

LIGHT IN THE POULTRY HOUSE

(Experimental Farms Note)

For some time it has been a question whether artificial light in the poultry house was a benefit or not, and to help solve the problem, the Poultry Division of the Experimental Farms have tested it for two seasons, during the winter of 1916-17 with two pens (40 birds in all) of Barred Rock pullets and during last winter with two pens of Rock pullets and two pens of Leghorn pullets (40 birds of each breed.)

In each light pen of twenty birds two tungsten 40 watt lamps were used. They were turned on at 6 a. m. and left till daylight, then turned on again in the afternoon before dusk and left till 9 p. m. This was started in November when the days became short and continued until the middle of March when light was unnecessary.

nI the 1916-17 test the light pen laid 1106 eggs with a total value of $54.93. The cost of feed was $22.53, the cost of light $2.40, a total cost of $24.73. This gave a balance over cost of feed and light of $30.20 or a cost per dozen eggs of 26.8 cents.

The dark pen laid 6'6 eggs with a total value of $29.46; cost of feed was $21.09. This gave a balance over cost of feed of $8.37. The cost per dozen eggs was 39.8 cents.

In 1917-18, the yields were not high in either case, and the total difference in egg yield in the six months was by no means large, but the forty brids with light gave a better revenue than the forty without light. This difference was made up in the time that the eggs were received. Those with the light gave their heavies yield in December and January, while by far the heaviest months far the Leghorns without were March and for the Rocks January and February.

The total figures from the two pens with the light were: Number of eggs, 2470, value $136.32; cost of feed $55.48, cost of light $3.20; balance, $77.64, or a cost of 28.5 cents per dozen.

Those without light laid 2242 eggs; value $118.90; cost of feed $60.01; balance $58.94, and cost of one dozen eggs 32.1 cents.

For both years, the light pens laid 3476 eggs at a market value of $191.25. The feed and light cost $83.41, leaving a balance of $107.84, or a cost per dozen of 28.7 cents.

The dark pens laid 2878 eggs worth $148.36. The cost of feed was $81.10. and the cost of one dozen eggs was 33.8 cents.

The conclusion may be drawn that for early winter eggs during the short days, the light does increase the egg yield but later in the season the yield is not as heavy with the birds that have not had the light. The advisability of using light, therefore, will depend upon what is wanted. If early winter and high priced eating eggs are the object the lights are an advantage; if eggs during the hatching season are desired the lights are a disadvantage.

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Standard Bred Hatching Eggs

Light Breeds, $1.50 per 15 eggs.
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Day-old chicks for March and April delivery

S. C. Rhode Island Reds $25.00 per 100
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SAFE DELIVERY OF CHICKS GUARANTEED

Orders must be booked in advance; this is essential to procure good delivery, as eggs are set according to the bookings. Customer will be advised two weeks before the shipment, when remittance must be forwarded. No other rule is practical in this business. Orders booked in good faith and customer is expected to honor his part of the contract.

High class White Leghorn hatching eggs per setting.....$2.50

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Incubator for Sale !

Cyphers incubator, 390 eggs, in perfect condition, 1918 model, and used on only one hatch. Guaranteed to hatch satisfactory. Price $30.00 f.o.b. Yarmouth. A bargain for a high class incubator.

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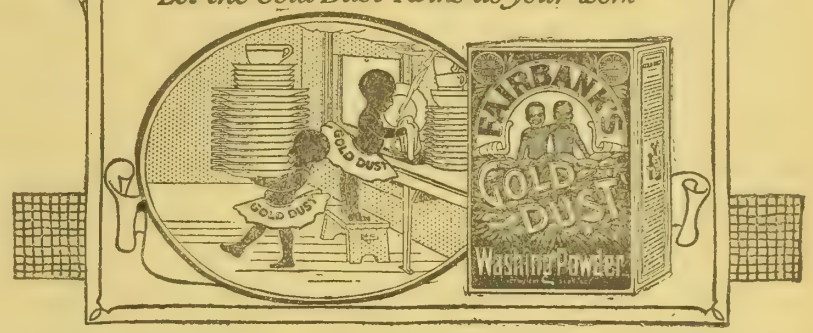

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

BE STRONG!

We are not here to play, to dream, to
to lift.
We have hard work to do, and loads
to life.
Shun not the struggle,; face it—
'Tis God's gift.

M. D. Babcock.

THE ROTARY GIFT

Her name was Minerva Dowd. She live in a nice little new house that she had built just to suit her. It had a fireplace and hardwood doors and bronze handles on all the doors. Miss Dowd had the money and she wanted the best for herself. She had been planning for her house for years and when she got it she saw that it suited her exactly.

She lived alone, because she preferred it. Yet there was room in the house for six people. However, company was exepnsive, and Miss Dowd never spent a penny which was not strictly for her own comfort.

Just across the street from Miss Dowd lived her only brother's widow and daughter. They had three upstairs rooms, too hot in summer and too cold in winter, but as good as they culd afford. Their most valuable possession was a sewing machine, which whirred day and night. Mrs. Temple and Elsie sewed for their living. Not being expert seamstresses, they had to take any work that offered and were seldom well paid for it. Mrs. Temple was a delicate ailing woman and Elsie was a delicate young girl. There was no reason in the world why Miss Dowd did not take them into her house. They were her only kin. But she never noticed them unless she was obliged to.

It was Mrs. Kellog who came to Minerva Dowd and told her that Elsie was going to be married. Minerva said nothing. She went steadily on with her crotcheting. She was always crotcheting something out of cotton or wool. She did not give these articles away and there was never any of them in sight.

"She is going to marry Fred Bailey," went on Mrs. Kellogg.

"You don't mean it!" Minerava looked up suddenly. What's she doing that for? Why didn't she get some one that could take care of her?"

"Land knows," sighed Mrs. Kellogg, who had buried two husbands and was looking for a third. "Love will go where 'tis sent, I suppose. Fred's a nice boy and Elsie's a nice girl. I heard that Mis' Temple was going to live with them and keep right on with her sewing. She's making Elsie's wedding dress now. It's going to be handsome, I tell you. It's white satin and some of that new crepe—Henryette or whatever they call it, I know it begins with a man's name. Well! Georgette then," as Minerva corrected her. They're going to be married in the church and have invited guests. Mis' Strong, who has the rest of the house, told me, so I guess it comes pretty straight. You'll be invited, Minerva, and you'll have to get her something pretty nice for a wedding present, won't you?"

Minerva closed her lips tightly. "I'm not saying what L'll do," she replied grimly.

She did not go to Elsie's wedding although she was asked. But she sent her a crotcheted bag—an ugly green and red thing which seemed designed for no special use.

"There," she said to herself maliciously, "the thread in that will pay for the most of printing that cheap invitation. And it will show those fool women just what I think of white satin dresses and church weddings when they haven't a dollar to their names."

Elsie and Fred opened Minerva's gift together and when they took out the green and red bag they laughed themselves into tears.

"It's a joke," Fred said, dangling the thing on his finger.

"I don't believe it was intended for one, but we'll treat it as though it were," Elsie replied.

Mrs. Temple was the one who was really disappointed. She had hoped that her sister-in-law would send Elsie something nice, since she could just as well as not. She kept the bag out of sight and finally gave it to Mrs. Griggs, who came in to help her clean up after Elsie went away on her brief wedding trip. Mrs. Griggs took it cheerfully, but at home she said to her daughter Grace: "Do you want that thing for anything, Gracie?"

"No, I don't," snappeed Grace, who was 14 and beginning to have ideas of her own. "It makes me billious just to look at it. I'll tell you, mother, we'll keep it till Christmas and give it to old Mrs. Bodine. We've got to give her something and this is bright, and it'll do just as well as anyhing."

So he bag went into a bureau drawer until Christmas, when old Mrs. Bodine got it.

"Now what in the world's Jane Griggs sending me a thing like that for?" Mrs. Bodine asked herself. "If she ain't getting stingy in her old age! I'll tell her as much. I'm real provoked at her, I am so. After I sent her that jar of marmalade, too! I don't want this contraption. I guess I'll give it to Mary Dix on her birthday. She'll eexpeect a little something from me and mebby this will answer."

So Mary Dix got the bag on that dreary day which marked her way of life like an ugly black milestone. For life had beene difficult for Mary. When sre looked at the bag she smiled faintly. "I supose eshe intended more than she accomplished. But I simply can't have this ugly bag where I must look at it. My room is so cluttered now that there isn't space for another thing. I'll give it to my landlady's maid. Maybe she can find uss for it."

So poor little down-at-the-heel Hetty Potter got it and thanked Mary for it very sweetly. But she didn't want it either, though she only earned $2 a week besides her board. "I can guess why folks make such things to give away," she sighed. "Let me seet! I'll givee it to somebody for next Christmas. I'll give it to Fany Moorehouse."

Fanny Moorehouse worked in the knitting mill and when she got the green and red bag she laughed merrily. "Poor little Hetty!" she said to her mother. "She thought she was doing something, didn't she? Well, I won't lay it up against her. I'll give her something worth while for her Christmas present and maybe it'll teach her not to do anything so foolish again. As for the bag, you can have it, ma."

"Good land, I don't want it!" cried Mrs. Moorehouse. "What'd I use it for, I'd like et oknow? Say, I'll tell you, Fanny. I'll give it to old Mrs. Kellogg. She's such a fancy old bird now that she's sprucing up so looking for a third husband that may be it will just please her. I'll risk it, anyway."

Mrs. Kellogg accepted the green and red bag without suspicion of its origin. "It's pretty," she said. "I do love bright colors. But—you see, Mrs. Mooreehouse, Mr. Huffy is dreffal set against them. You know I suppose that —we're going to be married? Oh, yes, we are. The day's set and everything. You're the first person I've told, Mis' Moorehouse. I haven't even told Miss Dowd yet. She's acted sort of miffed toward me lately and I ain't seen anything of her. Mr. Huffy is a strong Free Methodist, you know, Mis' Moorehouse, and he eain't got no use for flying feathers and floating ribbons. I knew when I said I'd take him I'd have to give all them things up. In fact, he left me to take my choice, and, of course, I chose him. It ain't pleasant to be a widow Mis' Moorehouse, especially after you've had two companions. I've got so used to seeing a man at the table that food chokes me when I sit down to eat alone. Mr. Huffy ain't what I'd picked out if I had my way, but he's a nice man, with considerable property, and there's nothing like property when you're making your choice of a life partner. That's what I told Elsie Temple when she married Fred. Not that she did so poor after all."

"I should say not," cried Mrs. Moorehouse. "Why, Fred's earning twelve hundred a year now. It's good, healthy business being a mail carrier, too. Elsie's the happiest thing with her new baby I ever saw—unless it's her ma. They don't ask any odds of Minerva Dowd. I'll tell you that.

"Well," said Mrs. Kellogg, "Minerva is just as God made her, I suppose. I hear she's sort of ailing lately from rheumatism. I ain't got nothing against Minerva, only I said she's acted miffy lately- Likely that'll all pass off soon as I go in to see her. I guess I will go in this very afternoon and tell her about Mr. Huffy. I'm real curious to hear what she has to say."

So that afternoon Mrs. Kellog went in to see Minerva Dowd. Her hands were swollen from rheumatism, and for once were idle.

"I've come to tell you some news and bring you a present, Minerva," said Mrs. Kellogg, and she dropped into Minerva's lap the green and red bag.

Minerva looked at it and the color flooded her face. She recognized it as a mother will recognize her long lost child. "My sakes! How'd you come by that?" she demanded.

"Why, Mrs. Moorehouse gave it to me," answered Mrs. Kellogg limply. "And as I am going to marry Mr. Huffy, and he's a strong Free Methodist and I had no further use for it, I———"

"And how did Libby Moorehouse come by it?" demanded Minerva, ignoring all else.

"Land knows," sighed Mrs. Kellogg.

Minerva held it out at arm's length. "I made this bag myself," she said, "almost two years ago for Elsie Temple when she was married. And here it is come back to me. Talk about your boomerangs! That's a boomerang, Hannah Kellog!"

"Is that what you gave little Elsie for a wedding present,"—it was Mrs. Kellog's turn to demand now—"after I pleaded with you to give her something real nice and useful? I'm ashamed of you, Minerva Dowd, that I ma. Of all the stingy, mean, dirty little tricks——"

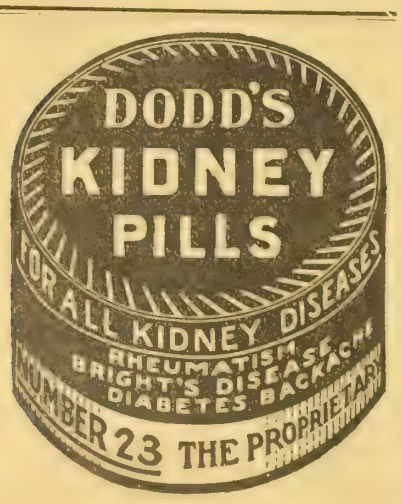
"Oh, I know it was," Minerva replied grimly. "I did it to be mean. And now I've got my meanness back just the way I sent it. I wonder if it isn't always that way with the meean things we do—that we get them back again when we've most forgotten them. My father used to say chickens come home to roost. I believe they do."

"I'm ashamed of you, Minerva Dowd," repeateed Mrs. Kellogg.

Minerva was ashamed of herself. Two days latere she sent Elsie Bailey's baby a cheque for $500. As for the bag, she keeps it pinned beside her bureau where she can see it every day.

FIRST AID

I have often thought how much better it would be for us to be better prepared for sickness in the house than many of us are. In the city it is



NO more reason for wash-day bringing back-aches, headaches and other troubles. No more need to bend over a hot, steamy wash-tub. Let the Maxwell "Home" Washer supplant old-time methods in your home as it has in others all over Canada. Maybe you don't know how good a washing-machine really *can* be? Then it's time you looked thoroughly into this one. It actually does *better* than hand-work in *half* the time! Washes anything.

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MAXWELLS LIMITED - Dept. X St. Marys, Ont.

37

HER LITTLE GIRL

COUGHED UNTIL

SHE FAIRLY CHOKED.

Mrs. John Reinhardt, Ridgetown, Ont., writes:—"My little girl at the age of a year and a half old had an awful cough. She would cough until she would fairly choke, and I was afraid it would go to her lungs. I thought I would use Dr. Wood's Norway Pine Syrup, as I knew of quite a few persons who had used it with good results. I am glad I did so, as I only used one bottle. It is a sure cure for coughs and colds."

There is no reason why Dr. Wood's Norway Pine Syrup should not be recognized as the very best cough and cold remedy on the market to-day, combining as it does the lung healing virtues of the Norway pine tree, to which are added wild cherry bark, squills, and other soothing and healing pectoral remedies.

It has stood the test for the past 30 years and is becoming more generally used every year on account of its great merits in curing coughs, colds, bronchitis, croup, whooping cough, asthma, sore throat, and preventing pneumonia and in many cases consumption.

So great has been its success that there have been a great many imitations put on the market to take its place. See that none of these so-called "pine syrups" are handed out to you when you ask for "Dr. Wood's." The genuine and original is put up in a yellow wrapper; three pine trees the trade mark; price 25c. and 50c. Manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

usually easy to obtain in very short time expert advice, also trained help and the many things designed for the comfort of the invalid.

In the country when one lives five or six miles, perhaps ten, from a doctor and a drug store, it is certainly more difficult. The patient may suffer a great deal before it is thought serious enough to call in the doctor, and often the amateur nurse has to send in haste to her neighbors to borrow the things needed, and perhaps have to do without them, for the simple reason it has never occurred to her to make any special readiness for sickness in the house, when every one was hale and hearty.

I have heard it said that they did not have the money to spare on things that were not an immediate necessity, but I think it is a matter of lack of forethought. When we are in good health, we are prone to forget that someone of the family might take sick any time. It is very wise to be prepared in our home to give first aid. It may save a greeat deal of suffering, and, who knows, it may save the life of some one very dear to us. Of course our first aid as mothers and head of the household is to put out an effort to prevent sickness and disease by seeing that the family is housed, clothed and nourished with due regard to the laws of health. No doubt many diseases are to be prevented by proper care on the part of the community and individuals. But, when all is said, there is no woman that even with the best of care, can ensure the health of her family and those dependent o nher, and at some time in their lives, most women are called upon to nurse the sick.

In serious cases it is a great aid to have a bedroom on the ground floor; it saves the tired mother many steps, and it is not using up wastefull the strength she needs for their services.

The sick room should be furnished very simply, so that it will be easy to wash and disinfect, as a sick room with elaborate dressing means much unnecessary work and care. There are a number of things that it is well to have on hand—the usual household remedies for slight burns, cuts, coughs colds, etc. These should be kept carefully and distinctly labelled, as very often a great mistake is made, when some one is in haste and the bottle is not labelled properly.

But there are a great many things besides drugs which it is well to have in readiness for an emergency, such as a hot water bag with all the attachments, thermos battle, feeding cup, which is of gerat use when a patient cannot sit up, some water-proof sheeting, a package of absorbent cotton and some clean (old linen, new linen is of no use.)

In sudden illness or accident it is of great value to know just where to lay your hands on these things, for very often everyone is so excited that there is a great deal of delay in obtaining what is needful. I remember being at a place once where a man was in most agonizing pain. I wanted some fiannel to put hot turpentine stupes over the abdomen, and there was such delay in getting anything and my patient was suffering so, that the doctor joined the hunt. He finally found what answered the purpose, on the line in the back yard. I think a very good plan is to have a box or bureau drawer which will be used for no other purpose and put into it all the old linen and cotton and flannel. Cut the buttons and ragged parts off, and then they are ready for use when needed, and if there is an emergency, you are ready to meet it, if not for yourself, perhaps for a friend or neighbor. In this way you will be lending first aid to those in trouble. Mothers should prepare for possible times of sickness, by training their little ones in habits of prompt obedience, for pain and illness only make a spoiled child more refractory, and if it struggles and fights against every remedy, the danger of its life is certainly increased. These are a few of the first needs in sickness.

It is my belief that we have a great many first aids in housekeeping, such as that those who are old enough to hang up their own clothes should put all their belongings just where they will know where to find them without having a general hunt; also in the morning when rising, turn back their bedding to air, and, if they do not sleep with their window open, (which they certainly should do), let them raise the window; in this way they are not leaving all the little things to be done by the one who has to do the work.

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CONVULSIONS IN CHILDREN

(By Dr. J. H. Riskmiller)

Convulsionns usually come without warning and are of grave future import, if the cause is not treated radically. Childhood, up to the completion of the first dentition, is the period of life at which convulsions most frequently occur. Older children, who at a nearlier age have suffered from convulsions, are frequently attacked again at the commencement of an acute infectious disease. Children who inherit from their parents a peculiarly nervous temperament are more liable to convulsions than others. This is often seen in several members of the same family. Females are more frequently affected than males. Teething and worms are among the least probable causes of convulsions. Rickets are a freuqent cause.

Acute and chronic indigestion are among the most frequent causes of convulsionns both in infants and older children. In either there may be but one attack, or attacks may recur at intervals of a few months with a repetition of the cause. The various infectious diseases, where they occur in a child over two years of age, may be ushered in by a convulsion. This kind of convulsion is seldom fatal and it always gives reason for the conjecture that the disease following will be strongly developed and run its course with violent symptoms. Under these circumstances the younger the child the more serious the outcome.

It may be well to detail the usual symptoms so that one may distinguish convulsions from epilepsy and the severer types of Saint Vitus' dance. There is little doubt that some cases of epilepsy have their origin in attacks of convulsions, which in the beginning were the result simply of digestive derangement; by a constant repitition of the exciting cause the convulsive habit finally becomes established. This possibility is, therefore, to be borne in mind in all cases where children have had several convulsions. In some children the initial symptoms are extreme restlessness with slight twitchings of the muscles of the face, hands, feet or eyelids. The muscles of the face are attacked by the most

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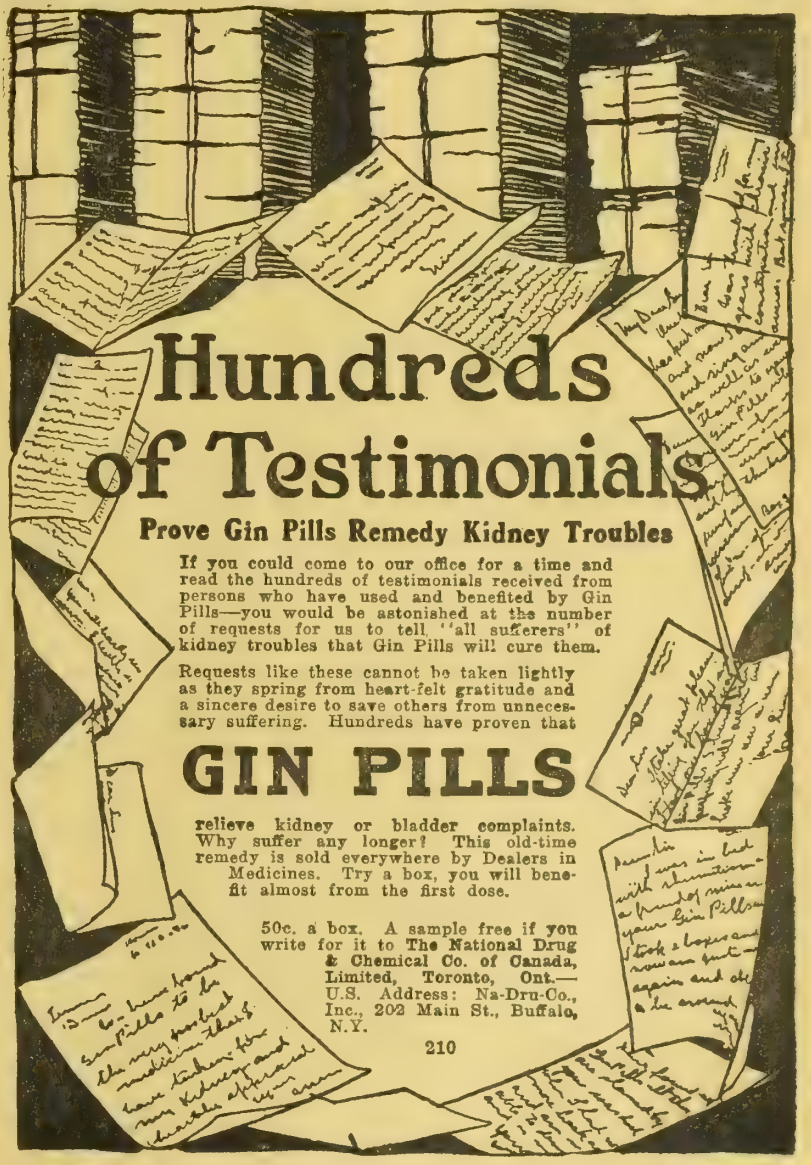
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varying twitchings; sometimes a smile plays over the face and sometimes an expression of anger. The jaws perform various acts, such as chewing, snapping, etc., accompanied by gnashing of the teeth. Fluids poured into the mouth excite imperfect acts of swallowing and the greater part flows out again. By this time the convulsionns have involved almost all the muscles of the body. The muscles of the back are in a state of contraction and the neck and head are thrown back. The extremities perform the acts of striking, thrusting or twisting. After a few whistling inspirations the breathing is suddenly suspended, and death may ensue in a few minutes if the spasm does not subside. There may be bleeding from the mouth and nose due to injuries of the tongue or lips which frequently occur during the snapping or biting movements of the jaws. Toward the end of the attack perspiration usually breaks out. The sensibility of the skin is so completely abolished that the child cannot be roused to consciousness by any means. One attack of convulsions is apt to be followed by others, for the occurrence of the first one usually reveals a peculiar susceptibility of the nervous system and each succeeding attack comes from a less powerful cause than the previous one. The longer the interval which has passed, the less likely is there to be a repitition, especially if the child has passed its third year.

The Treatment

In convulsions depending upon some disorder of the stomach or bowels the child is frequently troubled with constipation or it may be improperly fed. Convulsions are so frequently due to digestive derangements that the condition of these organs should be one of the first things to be looked into.

In the attack itself the physician seldom can render any material aid, for the reason that by the time he reaches the house the convulsions have almost invariably passed off, and his services are confined to imparting instructions for preventing a recurrence. The first thing to be done is always to undress the child as quickly as possible so that no constricting bands or skirts impede the respiration and circulation. Next the child, with the head slightly elevated, is laid upon a large bed when the convulsions are so violent that there is danger to the extremities against the sides of the bed or of its falling off. Cold should be applied to the head by means of an ice cap or cold cloths and dry hot cloths applied to the surface of the body and extremities. The feet be placed in mustard water while the child lies on the bed. The body may be placed in a mustard pack. The mustard pack and the foot bath should be continued unti lthe skin is well reddened. Frequently it is well to place the entire body in a hot bath of one hundred and five degress fahrenheit allowing only the head to remain out of the water. I have nothing to say regarding drugs, as the particular ones for convulsions are of a poisonous nature and should only be given under the personal direction of a physician. Secondary attacks are to be prevented by careful feeding, by improving the general nutrition, by means of fresh air and proper bathing, and by giving a general tonic, such as extract of malt with iron, quinine and strychnine.

MANAGING THE CHILD WHO TELLS FALSEHOODS

This fault of the child is one of the most trying that the mother has to contend with; perhaps because it is least understood by her, and is therefore more of a problem. She spends, perhaps, more anxious hours over this subject in the endeavor to find a means whereby the fault may be either checked or eradicated than over any development the child may show, and arrives at the same conclusion each time: "punish him and cure him."

But this method of dealing with the trouble is hardly just to the poor little offender. Faults are, after all, very like diseases; they must be treated from the cause and not the result, and to apply external lotions for an internal trouble is not the way to get rid of it. Lying is a fault that is to be deplored, not despaired over by the conscientious mtoher, for it is capable of being cured by a slow, patient treatment of sympathy, watchfulness and judicious kindness. It may startle mothers to be told that the watchfulness should begin with themselves, for they are constantly undoing the work they are trying to make a success by acting, speaking and living untruths before their children day after day.

In our associations with the greater things of life we forget that the life of a child is made up chiefly of little things that we would brush aside unnoticed. They are, n fact, the atoms thrown off from the greater bodies of our interests as they revolve about the experiences that make up all that seems worth while to us in duties, pleasures and ambitions. The child is taught variableness in truth by such seeming trifles as the following: "Mother will be right back and get the string for you in a second;" but mother is gone for an hour perhaps, and forgets the string. If the child has not wanted the string badly, he also has forgotten it; if he has wanted it, his impatience and reproach are manifested in the tearful: "But you said you would come right back and get it, and you didn't."

No, she didn't and the child has learned something of the elasticity of his mother's promises through this means. Perhaps she didn't even intend to "come right back" even while she made the promise; she said it to pacify the unconscious child who had trusted her. This, however, is not a noble thought, and, happily, there are mothers who deal honestly with their little children in the most trifling matters.

If young life is the bit of clay given into our hands to be molded by our touch into the perfection of its destiny, how can we fail to realize that every motion of a finger upon it is to make an impression for increasing its beauty or the reverse? Keeping faith with the child in the trifles—that, remember, are to him the great things of his life—is the slow, atomic method of building up the temple of truth in his mind.

Three definite causes induce lying in children—fear, imagination and undeveloped faculty. The first clearly indicates a lack of confidence between parent and child, for which the parent alone is responsible. Had the little one been trained to seek mother under all conditions, whether in pleasure, or pain, or misbehavior, fear of her under any of these conditions would not be possible. There is nothing a child craves more than sympathy, and we mean by that, sympathy that is hearty, honest, sincere, not the kind that says hurriedly to the one seeking it: "Yes, yes, I see; it's very nice, but run away now, like a good child, for mother's very busy."

The untruthfulness of an imaginative child is the most difficult to deal with because more intricate. In nine cases out of ten the child has not lied and has not had such an intention in his mind. Most children see things only as they are presented to their view in shape, size and dimensions, and can be relied upon to state facts with unswerving exactness. But occasionally we come upon a child who sees not only all of this, but the subject as it might be enlarged and embellished. He has, in fact, a wider if not a broader view, and makes state-

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nents compatible with this suggestion, which to his horrified parent looks like a deliberate attempt to distort the truth. If we take lying to mean an intention to deceive, we must ge just to the child and see whether his has been his motive when making he statement.

Most children with this characteristic have a faulty memory, and should e held strictly accountable for facts, nd the difference between these facts nd what they would like to think to e pointed out to them, that they an see where truth ends and fancy egins. But to punish him is not to ure him, for after the punishment is ver he will still possess the lively magination and the ability to use it. magination in itself is a divine gift, nd should never be thwarted by ignorance. Guided into its rightful hannels by a wise, intelligent, comprehending mind, it cannot fail to be valuable adjunct to the higher development of the child as man or woman.

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A MESSAGE TO WOMEN!!

The child of slow moral nature can be quickened by teaching him the difference between courage and cowardice. Help him to understand that he is fighting the Giant Lie, that every time he deceives or tells an untruth he is the captive of the Giant, but when he boldly confesses his wrongdoing he has escaped from the prison of the Giant. This will arouse his interest in making an effort to conquer his weakness, and will aid in developing his imaginative faculty of which he probably has but little. Above all things, avoid correcting the fault of a child through the cultivation of its fear.

RURAL POSSIBILITIES

Were it possible for all those who claim the farm as their home to write large in their minds the thought of what can be done to induce the farm folks to live up to their opportunities there would be fewer young people discontented with rural life. There is not a place on earth where it is more possible to live up to the highest plane than on the farm. The farmer is absolute monarch of his time and his expenditures, and if he can but be brought to realize how true this is, he will be in a position to see his high opportunities, and make the most of them.

Higher living keeps the most productive and efficient workers on the farm, makes them contented and helps them to a great efficiency and productiveness. A cow which is well fed, warm and contented, gives a greater quantity of milk, other things being equal, than the cow, which is constantly half-hungry, always reaching for a wisp of something, or smelling the air for water and shelter. The folks of the farm, the ones who count most to the welfare of the farms, must be kept quiet and contented, well-fed, if you please, from a spiritual viewpoint, so that they can do their utmost in the way of production.

One of the serious problems of the farm is the keeping of the best youngsters on the farm, and making contented the women who have the homes in charge. If these have in reasonable measure the things they crave, they will not want to break away from the independence of the farm for the shut-in dependence of the city.

What, then, are the things which these important elements desire, to keep them at peace on the farms. Two things, principally: conveniences in the home for the busy mother, and social advantages for both mother and children. Are they worth it? It will cost very little in actual money, not as much as ones spend now for improved machinery on the farm, but the things which that money will buy are priceless for they include the highest of love and respect of those who should be dearest in the world to the father.

The home conveniences which women need, and which mean so much to them, cost less than the intricate machinery which is used on the farm outside, but yet are in such form that they can be transported from home to home.

Instead of being used for a few days or weeks each year, and then left to rust in desuetude, they will be used many times every day, and every time they are used, they will remind the wife and children of father's forethought concerning them. Water in the house, good lights, heat that really heats without making a litter all over he best rugs, bath tubs, a sink for the kitchen, none of these are prohibitive in cost, and all are in such shape that they can be moved, for even the water in the kitchen can be provided by a portable pump with a curved pipe, and a little digging any time will attach it to the house well.

The social advantages craved by the dwellers on the farm are usually simple and can easily be provided for. Is the neighborhood musical? A weekly or fortnightly meeting of the community for concert singing, interspersed by special numbers from those better prepared, will be a source of perpetual joy.

To give this social circle a start, the mother or father should begin by inviting friends to the home for an evening of simple pleasure, and at the close ask them if it is worth while to make a regular thing out of such meetings. No formal organization is needed, although the work will go better wtih it. All that is needed is initiative and application.

The farm does not need to be uplifted, for it is already at the top of the world. All that it needs is to be shown that it is living below its possibilities, and taught how to live up to those possibilites. The farmer and farmer's wife wants a community spirit, working for the best for all in the community, and should their own theories stand in the way, they should be the first to push them from their pedestal.

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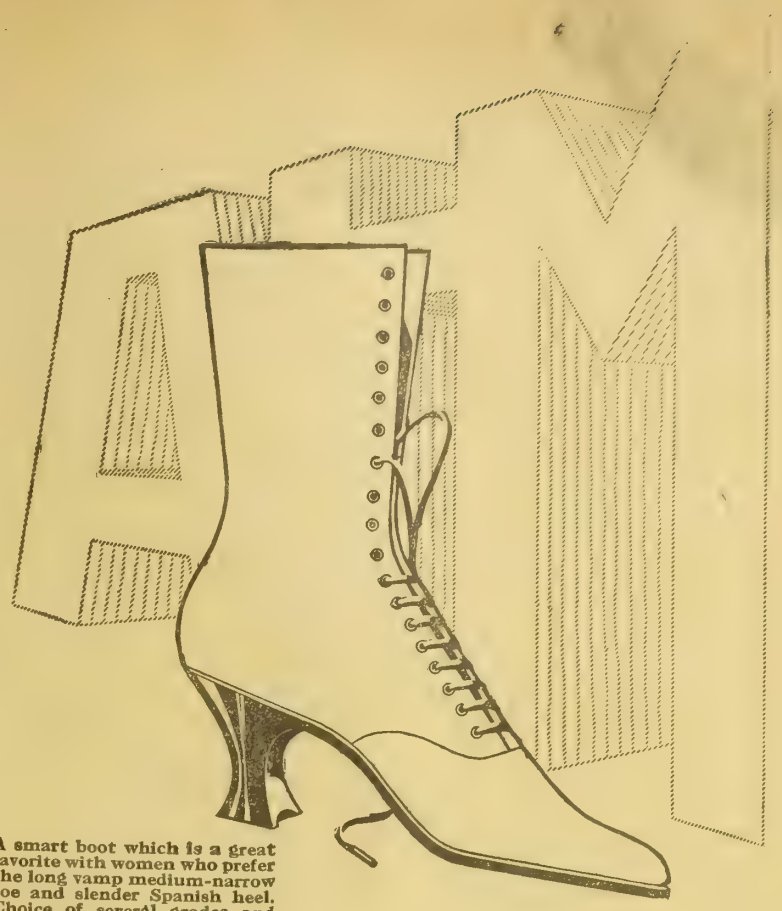

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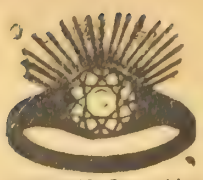

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with an objectionable odor, such a stove can be made odorless and again give good service by boiling the chimney section in lye made by tying a quart of clean wood ashes in a cloth, in a crock, and covering with boiling soft water. Let stand over night, then in a deep kettle boil the chimney part, turning it about from time to time, that the hot lye may reach every particle of oil-permeated dusty smudge which has been beyond the reach and strength of ordinary cleaning with warm water and soap.

When it is not possible to separate the chimney section from the burners and the base, the whole stove must be subjected to the boiling process, after removing the oil and the wicks—an easy matter, as the one or the two flat-wick oil stoves are small, with a top frame-work nearly as large as the base, and such stoves can be turned upside down. And, then, the burners and the base of oil stoves always need a thoroughly good cleaning once a year, although the odor is located in the chimney section. After thus cleaning a stove it must be thoroughly rinsed and dried in a warm (not hot) oven or above the top of a stove. Too great dry heat is not safe for metal joints and fixtures. The present writer, after placing a tin ricer in a hot oven (for a safe length of time?) found it unsoldered and useless.

New isingless is always desirable, but not a pressing necessity. The tops of tin cans are flexible and can be cut and fitted over the openings in the metal chimneys of oil stoves—if not entirely, at least across the top and the lower section, with a little isinglass between. Before adjusting new wicks, always trim the raw edge with sharp shears and round the corners, then insert the wick at the top and turn downward, and trim the upper edge and take a little clip from the corners. Baste four or five inches of knit goods on the lower end of the wick, and thus be able to use every inch of your new wick; and never have wick material that does not touch the bottom of the stove base, and thereby be assured of a continuous fire until the last drop of oil has been absorbed by the regular wick.

The only way to keep an oil stove free from an odor is to keep it clean from day to day, and while it is lighted, by gripping a wad of soft, wet cloth with the points of an old pair of shears and removing smoke smudges as soon as observed. To keep an oil stove filled, and never allow it to burn out, is to conserve both wick and your oil stove—your new, or your old one made new by the lye cleaning process.

ECONOMIES IN COOKING MEATS

It is impossible to make a chuck steak taste like the porterhouse, or a slice of rump like a sirloin, but both these pieces of cheap meats may be broiled or stewed to make satisfactory meals.

The cheaper parts of the beef are found n the rump, from which one may secure moderately-priced roasts, braising and tsewing pieces, and what are known as hip or flat-bone steaks. The hind shin contains the best marrow, and supplies cheap stews and soup pieces. The chuck ribs may be converted into small steaks and stews, and from the neck pieces one may get splendid Hamburg steaks, pieces for stewing and mincemeat for pies. The rattleran is the cheapest part of the brisket and is only fit for corning, and then is only cheap for the family who likes fat.

It is not so much the low-priced meats as the wise selection and preparation of the meats that marks the thrfty housekeeper, and this wisdom can only be gained by experience.

Where the coal stove is part of the kitchen furnishing, the cheaper cuts are economcal.i These cuts are tougher than the loins and other sections of the animal, as they contain more muscle.

Slow cooking means that the water is kept simmering and never boiling. The meat should be farily cooked to shreds or the meat will be tough. The cheaper steaks should be pounded thoroughly to break the fibres; then broiled over a clear bed of coals. If liked best panned they will be found palatable if the fryer is smoking hot before the meat is laid in.

The liver of beef is much cheaper than that of veal or lamb, as are also the kidneys. Beef tongue has risen so high in price, since the demand has been created for it, that this portion of beef cannot come under the head of cheap meats.

The cheaper portions of veal are found in the breast, which may be used for stews, and when stuffed for rolled roasts. The ribs, shoulder and neck pieces are also used for stews. The knuckle, which is that portion left from the leg after the cutlets have been cut, is used in connection with the beef bone for delicious soup or for a potpie.

The cheaper portions of mutton—lamb is never cheap in the majority of sections—comes from the shoulder, which may be braised, steamed and boiled. The scrag end of the neck provides stews and broth. The leg is the only part of the cheaper portion fit for roasting, and it is more often substituted for "spring lamb" by first boiling until tender, then browning in a hot oven. For a large family a leg of mutton will be more economical than any other part, as it may be either roasted or boiled and served with a rich sauce flavored with either mint, capers or sour pickles. For the second meal, it may be eaten cold, and appear in a stew the third time. It may also furnish sufficient stock for a vegetable broth. The scraggy ends can also be worked up into croquettes or hash. The meat need not be used on consecutive days, but may rest a day or two in cold weather.

A porton of beel little known among housekeepers is the upper part of the shank. This is a heavy lean piece with one round bone, and is that portion of the leg joining the round. It makes a splendid stewing piece and is delicious when corned, while it is far better for soups than the bony, gristly piece known as the shin, as after the juices have been extracted for the soup the meat may be sliced cold, hashed or made into pressed meats. A little of the soup stock should be added to replace the nutriment drawn out in the slow cooking necessary for the soup. In stewing this porton a piece of fat should be added, as it is exceedingly lean.

When one gets chop hungry do not buy the loin rather than a rib portion, which gives more bone than meat. Trim off the surplus fat, shape the loin into rounds and secure with small wooden skewers; then broil. A delicious piece of meat will result, with scarcely any waste. But chops of any description cannot be placed in the economical list of meats, because of the demand for this portion.

The meats that may be converted into made dishes are the most economical, but they require care in preparation to make them fit to eat. So simple a dish as hash is often spoiled by the introduction of large pieces of gristle and fat, which are not necessary to a tasty dish of this kind. A little fat introduced into such a dish gives it flavor, but it should be chopped as small as the lean meat.

POTATO ROLLS (3 DOZEN

3 cupfuls of mashed potatoes.
4½ cupfuls of flour.
3 teaspoonfuls of salt.
2 tablespoonfuls of corn sirup.
1 cake of compressed yeast softened in ¼ cupful of water.
¾ cupful of milk, scalded.
2 tablespoonfuls of butter.

Add the hot milk to the potato and, when the mixture has cooled until it is luke-warm, add the softened yeast and other ingredients. Allow the dough to rise to double its bulk. Work it down, and let it rise until it has increased in size by about one-half. Then shape the rolls, let them rise until they are double in size, and bake them in a hot oven.

When using a recipe which must be referred to often, copy it and fasten to the wrist with an elastic band. If it is a recipe clipped from a magazine or paper do the same, and it is very easily consulted without wasting time walking across the room or searching for it.

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Weak Emaciated, Nervous and Pale

MRS. FRANK BERRY SAYS SHE FOUND A CURE IN DODD'S KIDNEY PILLS

New Brunswick Woman Tells How She Got Quick Relief From Ills That Sprung From Sick Kidneys.

New Jersey, Northumberland Co., N. B., March 16th. (Special.)—Mrs. Frank Berry, a well-known resident of this place, is just one more added to the host of New Brunswick women who are singing the praises of Dodd's Kidney Pills.

"Dodd's Kidney Pills have cured me," Mrs. Berry says. "I was weak, emaciated and nervous. I would start in my sleep, and had bad dreams and nightmare. I was unable to do my work, my eyes were dull and heavy, and I was troubled with biliousness, headaches and constipation. My hands and feet were always cold, my skin was dry and harsh, and my face was marked with pimples.

"I was always tired and weak, and I knew I had bad kidneys. I took just three boxes of Dodd's Kidney Pills, and they have done me a world of good. They have cured me."

Mrs. Berry went right to the root of her troubles and treated her kidneys by using Dodd's Kidney Pills. She got results. If you have any of Mrs. Berry's symptoms, and have not tried Dodd's Kidney Pills, ask your neighbors about them.

GRACIOUSNESS IN SPEECH AND MANNER

There are, among young people especially, a number who do the right thing, but do it in the wrong way; who will perform a kind action, yet in such a manner as to give pain instead of pleasure—will grant a request or confer a favor in a manner so ungracious that the recipient almost wishes the request or favor withheld. Such a one is often unaware of her own ungraciousness; she knows she has done a kindness and blames the recipient for not showing more pleasure and experssing more gratitude. If she were told that the fault lay with herself, or rather with her manner, she would no doubt be very much astonished and probably reply that it was her natural manner. There are faults natural to almost every individual, that ought to be, and can be, overcome, and natural defects that require to be softened and improved. Of course training has a great deal to do with good manners, but even training cannot always supply the lack of graciousness, for this springs from kindness of heart and a desire to give pleasure to others. It is a great drawback for a woman to lack graciousness than it for a man, as far as society is concerned, for it is in the daily little matters of social life that it is most felt and the most missed. Has not everyone noticed the difference there is in a house presided over by a gracious mistress and the one wherein that pleasant quality is lacking? It is not, however, only in her own house and in her place as hostess that lack of graciousness in speech and manner is a drawback to a woman. Wherever her lot may be cast, and among whatsoever people, whether she is placed in a subordinate position or well at the head of affairs, at the beginning of life's journey or well on the uproad road, it is the same. If she lacks this gift she has missed a useful friend and a powerful benefactor. Without it she certainly may get on but with it she is almost sure to do so, and at the same time will gain friends and win affection, the latter so rich a gift to every woman, for without it none is ever really content or quite happy.

LAUNDERING THAT PREVENTS THE "FLU"

Every housewife will agree with me that the laundering of handkerchiefs is one of the most repulsive parts of the washing.

At this time when the "flu" is so distressing, I thought my way of laundistressing, I thought my way of laundering them might be of some value to others. Having used this method for ten years, I find it very satisfactory.

Put the handkerchiefs into a laundry pail; cover with cold water; add two tablespoonfuls of some good washing powder, also cut in a few pieces of soap. Place pail on gas or stove. Boil for 20 minutes, stirring quite often. After boiling handkerchiefs set pail under cold water faucet and rinse thoroughly, then blue and they are ready to dry. By this method you do not touch with your hands until they are ready to blue. But the greatest of all is the infected handkerchiefs do not come in contact with the rest of the laundry.

RICE COOKED THE CHINESE WAY

Wash one cupful of rice thoroughly and place it in a kettle which can be closely covered. Add one teaspoonful of salt and two cupfuls of cold water, cover, and cook for ten minutes after the water begins to boil. Set the dish where it will have heat enough to cook, but not sufficient to keep the liquid boiling. In twenty minutes the rice will be soft and dry, and each kernel will be quite distinct.

Candy not a Luxury

IT would be folly indeed if a belief detrimental to the public welfare—and proven false—was allowed to last any longer. That false belief is that candy is a luxury.

Candy is food in one of its most useful and attractive forms.

All elements used in the composition of Candy are recognized useful foods.

Candy contains large quantities of sugar, some fats such as butter; also nuts, fruits, corn syrup, chocolate and flavoring.

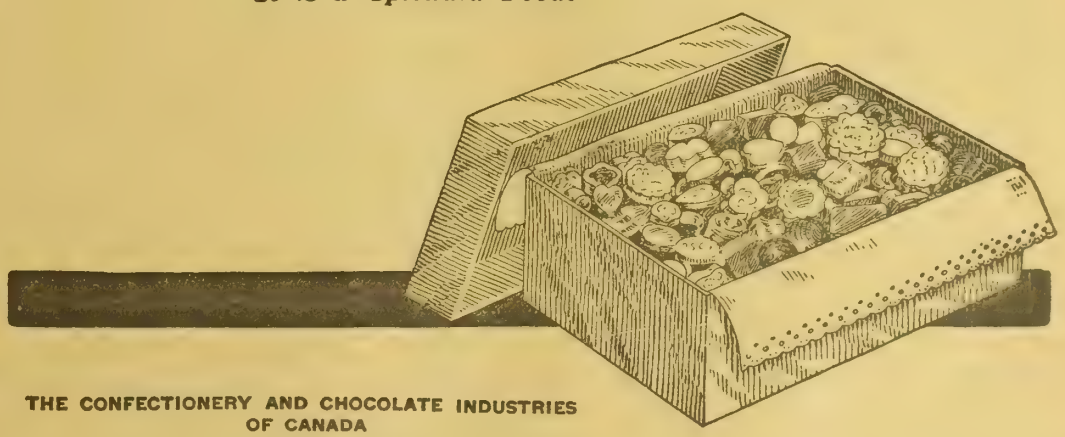
Combine these ingredients in proper proportions and you have a balanced ration—the high food value of which is recognized by all leading food and medical authorities.

Sugar supplies the bodily demand for fuel. Fruits and nuts produce essential nutriment; chocolate is a most nourishing fat food and delightful stimulant. The flavorings stimulate the digestive organs and increase the flow of saliva and gastric fluid.

Eat more candy!

Medical science has established its value as an energy-producing food.

Serve Candy as a Dessert.
It is a Splendid Food.



THE CONFECTIONERY AND CHOCOLATE INDUSTRIES OF CANADA

11

THE NOVA SCOTIA FARMERS' ASSOCIATION

(Continued from page 661)

year. Total membership 10,833, a gain of 425. Receipts for year, $23,904.81, a gain of $2900.

Eleven County Exhibitions held during the year. Richmond County called off and Inverness Exhibition a failure, both the result of prevailing epidemic raging at the time.

Mr. Fuller reported that in spite of all obstacles, County Exhibitions were improving and the prospects were good. Mr. Fuller expressed an earnest desire that the first prize winners at the County Exhibitions should in some way be made to show at Provincial Exhibition for educational purposes, the only way to raise the standard of the Exhibitor.

Mr. O'Brien spoke of the great need of taking up the question of lower rates for transporting these cattle to exhibitions with the Transportation Company.

Mr. Fuller then giving the Report of County Associations, said that although perhaps not so many meetings were held, there was still strong interest and things were progressing favorably. He referred to the Resolution passed at the last session that the Government be asked to increase their grant to Agricultural Societies from $15,000 to $20,000, an increase of $5,000.

This Resolutoin was sent to the Government and shelved. The need for this grant is greater this year than last and the only way to do is to go after it and keep at it, write letters to your local members for this increase and see to it that it is put through.

Mr. Fuller then read the Scrub Sire Act (another Act which did not pass last year) reading it for the purpose of seeing if Associations wished it again to go through. Also the Act regarding line fences, which was defeated last year. Both Acts were strongly favored by the delegation, many whom have suffered through not having Legislation on these Acts.

Mr. Fuller's report was received and accepted, and it was moved and seconded that a committee be appointed to carry out in detail the spirit of the report. Said Committee appointed by the Chair being Mr. Banks, Kings; Mr. Corning, Yarmouth; Mr. Moffatt, Cape Breton.

The report of delegates followed.

The Degelation was invited to a Tractor Demonstration at the Provincial Farm at 4 o'clock.

Meeting adjourned.

Thursday, 2 p. m.

Resolution re Daylight Saving System brought in by Committee. Mr. Ells spoke on resolution urging that just so long as these resolutions are not pushed by the farmers, just so long will these resolutions be shelved. If the local members of the different communities understand they will not receive the support of the farmer at election, then and then only will the farmers' interests be secured. Resolution received and adopted.

Mr. Fuller then addressed the meeting on "Marketing Facilities for Agricultural Products" showing the crying need for better facilities of this kind, the Stock Breeders case in the Maritime Provinces being almost hopeless, unless something is done and done soon.

He protested strongly against the proposed cold storage plant in Montreal. Montreal's port is closed for some months of the year, the preference should certainly be given to Halifax. He urged that an effort be made by the Nova Scotia Farmers' Association to compel the Government to spend the purposed million dollars for the same purpose in the Maritime Provinces. The Maritime Breeders' Association had already taken action in this line, sending a strong delegation to Ottawa some weeks ago to interview the different ministers. They were well received and the request given due consideration.

Mr. Logan, commenting on the address said Montreal does not need this cold storage. There is ample cold storage there now. Parties interested, with perhaps a good pull, were pushing this as it meant money in their pockets and will do so if they can get away with it. If a cold storage is started here we have the verbal promise that an Abbatoir will be started, which would eventually lead to a central stock yard for the Maritime Provinces. A number of members spoke strongly on the subject. With the Premier and Leader of the Opposition both from Nova Scotia, surely they should look to the interests of their own Province, if not, then throw politics to the winds and put in some one that will. The farmers have suffered too long in mind and pocket over this matter of better marketing facilities.

The cold storage plant in Halifax would be a great impetus to the Live Stock Industry.

A committee was appointed to draw up a strong resolution dealing with this most important matter.

Several resolutions of minor importance were then passed.

A resolution to increase the allowance for delegates expenses to Association was then discussed. but was not put through, owing to the Secretary declaring that financial conditions did not permit of it at the present time.

Mr. Ells spoke on the purposed increase in transportation charges to be made by the Express Companies, an average increase of 78% throughout Canada, special commodity rates especially to be attacked, which was going to hit the farmer hard, and purposed a representative be sent to the meeting, which is to be held in the near future in Moncton by the Express Company and Railway Commission, to show facts and figures why this should not be. The Fruit Growers' Association had already taken action along this line. This met with the approval of the meeting, and Mr. W. A. McKay of Truro was appointed as delegate to that conference, with power to appoint a substitute should he be unable to attend.

Resolution re Scrub Sire nuisance brought in by Rev. Father McPherson, the quality of live stock being low in some sections, one of the causes being the scrub sire a constant menace to the pure bred breeders.

A committee to draw up a law to control this and present it to the Government, was appointed. Resolution moved and adopted.

Mr. Cutten then gave an address on "Standardizing Farm Machinery". A progressive idea started first as a war measure. Everything to day is standardized, why not our farm machinery? No reason why the idea should not be developed, the present system is poor, causing much loss of time in consequence. Standardize all wearable and breakable parts, eliminate a great number of types of farm machinery and have only a few standard makes, whose parts are interchangeable. The farmer would be able to

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The experience of one farmer with regard to Invincible Fencing will be exactly like that of every farmer who has tried it—because every bit of fence that leaves our factory is tested so rigidly that we are able to assure you it will all measure up to the same high standard. Unlike most wire fence manufacturers, we are able to guarantee, not only the weaving of our fence, but also the quality of the steel from which the wire is made—for Invincible Fencing is made entirely by ourselves, from ore to finished product.

We fully guarantee the material in Invincible Fencing to be of the best, heavily galvanized open-hearth steel. Then, on top of that, we guarantee its workmanship—equal strands, straight stays, solid and secure locks—these are the features of Invincible Fencing that ensure its holding under the most severe strains.

When to these features of Quality, you add the important fact that Invincible Fencing is made in Canada by Canadian workmen, you must see that it is to your interest to insist on this Brand, in the purchase of which you keep your money in circulation in your own country. Our advice is backed up by the advice of the better dealers—for in almost every locality it is the leading merchant who sells our Fencing. Catalogue will be sent you on request.

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This Standardization of Machinery has already been taken up in the Western Provinces.

A Resolution was passed urging the Government to undertake this step. Mr. Cutten's address will appear in a future issue.

Resolution re Soldier's Land Settlement Act was then brought in. Rev. Father McDonald as mover of this resolution, said that after hearing Lieut. Robertson's address of the previous evening, he had given this matter due consideration, and felt the Act might not fully benefit the soldier as hoped for. Does the soldier realize what he is up against? Is the soldier getting the best deal possible in starting him out with such a debt on his hands? Machinery is at the highest now and it seemed a poor time for the soldier to jump into this thing as many might do without due consideration.

After a general discussion in which many viewpoints on this subject were put forth, the resolution passed as read.

Meeting adjourned.

Thursday, 7.30 p. m.

Meeting opened with President in the chair.

Resolution brought in re the Deer Menace to the farmer

Mr. Bacon of Digby spoke on the resolution telling of the destruction to the crops by the deer in Digby county. It was a very serious menace in some sections.

Resolutions adopted and left with the Legislative Committee.

Resolution re compelling first prize animals to compete at Provincial Exhibitions was next brought in and discussed. Prof. Trueman spoke in high commendation of the educational value which would be derived by the passing of this resolution. The county exhibitor can learn much by measuring up his stock against that shown in the larger exhibitions.

Resolution adopted.

Another Resolution was that embodying a plea for larger representation in Parliament, and for farmers to elect their own members in counties where farming was the chief industry.

Mr. Fuller spoke briefly on the resolution which was carried unanimously.

Prof. Trueman then addressed the meeting on "Feeding Problems." He said that there was more rapid improvement in Live Stock Breeding in Nova Scotia than n Live Stock Feeding.

Some farmers complain that the stock they receive does not measure up to that which they have seen at the Agriculture Farm, and he went on to show that all the offspring cannot be expected to measure up to the ancestry of the bull.

Another reason for failure of heifers to produce what is desired, is because they are not fed properly from the time they are born. The younger you begin to feed the better results, the growth force and the vitality is in youth. If you don't feed the young animal you can't regain it. Put the frame work and size into the animal the first year.

Farmers complain they cannot afford to feed their cattle as they do on the Government Farms. When we get down to realizing that we are a live stock country and put forth our efforts to feed our land, produce more per acre as they do in Europe, we will be able to feed our cattle better.

Prof. Trueman emphasized the value of barn yard manure. A great deal of it is wasted in this country; it should be conserved, it would save much in the way of buying fertilizer. The time to get it out is odd days in winter, if the labor problem is what is holding you back. He also spoke on the value of silage for feeding, as proved by the College. Feed the cattle and feed the land wherever you have a sod—it will pay you to feed it with slag or ashes. 400 lbs. slag used per acre in the fall at N.S.A.C. The cattle cannot gain on poor pasturage. With more attention to our summer pastures our live stock would be materially improved. Follow up the good breeding by good feeding.

After a brief discussion, brought out by this interesting address, Dr. Sinclair spoke on the horse, using as his text, "Shows and Judges of the Shows."

He spoke of the trivial points in relation to judging, how the manners of a horse had a great deal to do with the judging. Teach a colt to stand and walk properly—few horses know how—especially the draught horse. Show taste in fitting them for the show and show your own animal.

Shows are for educational not show purposes, the one man judge was personally favored by Dr. Sinclair. An expert in every class rather than the popular citizen judge. A judge should have the privilege to tell why he makes his decision, an expert can do so. Neglect of the feet is a common defect in animals. Attend to these defects early.

A judge should be able to withhold a prize if none are worthy. Why should an inferior animal get a prize because it is the only one of its class. A judge should educate; why discourage the very object you are working for and mislead the onlooker. Tell him why he does not get a prize, probably next time he will come back with a better animal. There is no getting rid of unsound animals by the method now employed. After this interesting address the report of the Legislative Committee by Mr. Wm. O'Brien was received.

(Continued on page 668)

This Engine Has Proved Its Value

—it has demonstrated itself as an indispensable part of the equipment of the up-to-date farm. It has proved that its low first cost, its more-than-rated-power record, its economy of upkeep, its simplicity and its low fuel cost make it the logical farm engine.

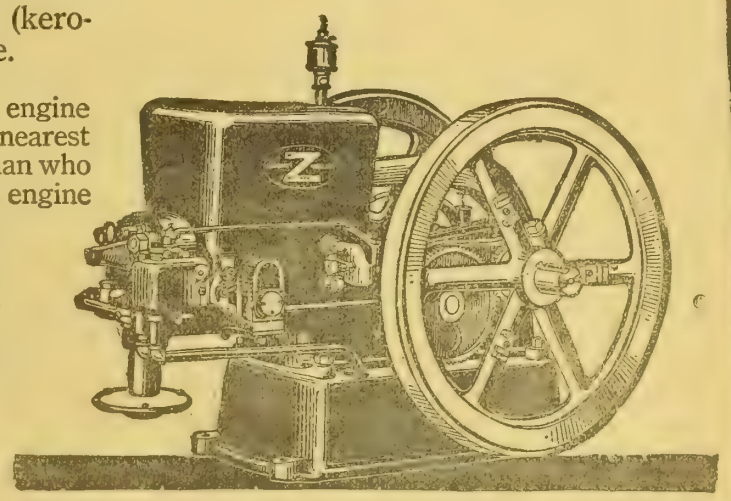
The 6, 3 or 1½ H. P. "Z" Engine

were designed and have been built to meet every requirement of the farmer. Over 200,000 have proved this to their satisfaction.

This is the engine you need on your farm—the engine that has been proved up, that will save you money, worry and labor.

The "Z" Engine burns either coal oil, (kerosene) or gasoline.

Investigate this engine today. Ask your nearest dealer; he is the man who stands behind this engine as a direct representative of the manufacturer. He is always at your service to see that you are satisfied.



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HINTS FOR MOTORISTS

by ALBERT L. CLOUGH

Editor Motor Service Bureau Review of Reviews...

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Questons of general interest to motorists will be answered in this column, space permitting. Address Albert L. Clough, care Maritime Farmer, Sussex, N.B.

KNOCKING DUE TO TOO HIGH COMPRESSION

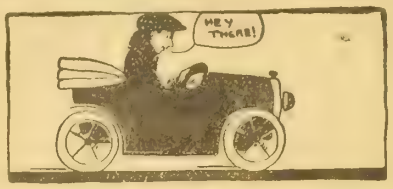
Maximum Allowable Compression Depends Upon The Fuel

There are a great many instances of engines—not of the latest models, but still built within the last four or five years—that now give trouble by knocking, especially when they have been continuously operated, very heavily loaded, for some time. Such engines may be in perfect mechanical condition and free from carbon, the mixture may be correct and the ignition perfectly timed and still they are prone to knock, under trying conditions. This fault makes the operation of such engines unsatisfactory and its probable cause is obscure to many motorists who are troubled by it. The sound that is properly called a "knock" is generally caused by premature ignition, which produces a downward or reverse pressure upon the piston, while it is still moving upward on compression and heating the fresh charge. The "near kerosene" fuel, now being used will not withstand, without exploding, the same elevation of temperature that the real gasoline formerly used would stand and, when the cylinders are very hot, it ignites prematurely at the high compression attained in engines of older design, and knocking and loss of power results. The remedy for knocking in engines, which have too high compression to burn present-day gasoline successfully, is to increase the clearance space above their pistons and thus reduce the compression ratio. This can be accomplished in two days. The cylinders can be raised slightly from the crank case, so that the pistons do not travel quite so far toward the cylinder heads. A metal gaset or liner, placed between the cylinder flange and the crank case surface, will accomplish this and no other adjustment is usually required than the lengthening of the valve push-rods. Most manufacturers, whose engines need them, can furnish such cylinder gaskets, which are usually from one-eighth to one-quarter inch in thickness. The other remedy is the use of low compression valve caps. Ordinary valve caps close the clearance space about flush with the interior surface of the head, but these special valve caps are hollowed out to form chambers and thus add to the clearance space and diminish the compression. Such valve caps are obtainable from manufacturers, whose engines have developed preignition troubles of this kind, or they can be made specially. Naturally this preignition tendency, due to the change in fuel, is most often found in engines which were designed on high compression lines, but those having defective water jacket provisions or weak circulation are also subject to it. Many an old engine which now fails to "stand for" long, hard pulls, without knocking, can be made to do so by lowering its compression.

FORD CAR "CREEPS" WHEN IN NEUTRAL

K. T. writes: With the pedal and hand lever both in neutral position and the engine running, my Ford moves slowly forward. Please explain how this action can be stopped?

Answer: Probably the clutch lever screw, which bears upon the clutch cam, requires an extra turn to make

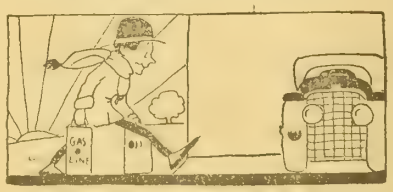


up for wear and to cause the clutch to be held in neutral. It may also be that the lever brakes need a little taking up as, if they were in good adjustment, the car could hardly move, even though the clutch did drag. Be sure that the low speed is not unnecessarily tight. If you are using a grade of oil, which becomes extremely thick when cold, it will cause the clutch to drag, even though its plates come out of actual metallic contact. In Ford transmissions, which have seen extensive service, the clutch plate driving lugs, upon the inside of the transmission case, sometimes wear out of fit with the slots in the discs, with the results that the discs tend to wedge and do not release as they should.

LIMBERING UP COLD ENGINE

D. W. P. writes: After my car has stood in my unheated garage for several days, I sometimes find that it is almost impossible to turn the engine over. Is there anything I can do to loosen it up, upo nsuch occasions?

Answer: You might try this procedure: Remove the spark-plugs and



inject quite a little gasolnie on top of each piston, which should loosen up their oil films. Follow this up with an injection of light machine oil in each cylinder, which will not thicken at the temperature of the engine. If most of the resistance is in the pistons you ought then to be able to turn the engine over but, if the main bearings are very stiff, cranking may still be difficult. With an engine fitted with crank case hand holes, the removal of which exposes the main bearings, these can be loosened up by squirting them with machine oil.

PREIGNITION FROM UNSUITABLE SPARK-PLUGS

The Engine Builder Usually Recommends The Best Adapted Type of Plug

A not uncommon cause of knocking from preignition of the charges is the use of spark-plugs ill adapted to the particular engine. Some plugs are made with very long shells, which are required in certain engines to bring the spark points properly into the combustion space. However, when such plugs are used in other engines, the shell may protrude so far into the combustion space that it becomes hot enough to fire the charges prematurely, under continuous, full throttle operation. Some plugs have thin porcelain cores of the petticoat type, designed to give a soot-proof effect. These cores do not always cool effectively and the porcelain may become hot enough to cause premature firing or to cause missing by failure of its insulating properties when heated. Other plugs are made with quite massive spark points of considerable length and it sometimes happens that the heat retained by these, under high speed open throttle conditions, is sufficient to raise them to a preigniting temperature. These troubles, naturally, are met with especially in engines which are running close to the safe limit as to compression pressure. While it is by no means necessary for a motorist to stick to the same make of spark-plug that is supplied with his engine, it is generally a safe practice to adhere to the use of plugs of the same general type and proportions. Nearly every large manufacturer of plugs makes a number of types, one of which will be found to conform closely to that found best by the manufacturers of each particular engine.

DANGER FROM TIRES BLOWING OFF

A. L. G. asks: Is there any danger that a tire may blow off the rim and hurt someone, while air is being put into it?

Answer: There have been a few bad accidents and numerous narrow escapes caused by the outer ring blowing off the rim during inflation, the ring being projected with very dangerous force. Such an accident is caused

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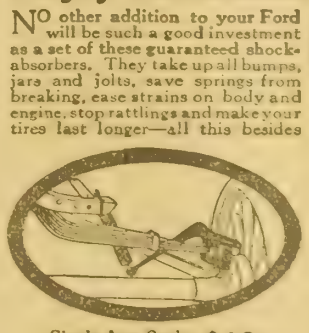
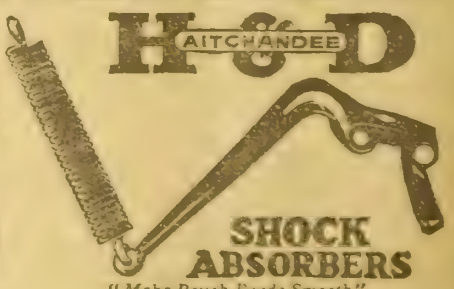
NO other addition to your Ford will be such a good investment as a set of these guaranteed shock-absorbers. They take up all bumps, jars and jolts, save springs from breaking, ease strains on body and engine, stop rattlings and make your tires last longer—all this besides giving you utmost ease and comfort in riding. These are the original cantilever-principle shock-absorbers, protected against imitation by Canadian Patent 172892.



Single Arm Style, Set of Four - - $10

Twin Arm Style, Set of Four - $12

H & D HAITCHANDEE



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"Make Rough Roads Smooth"

Over 200,000 in use to-day. We take all risk. Remit by Money Order or Postal Note. Use for 30 days. If not satisfied, send them back and we refund your money at once.

Richards-Wilcox Canadian Co. (Limited)

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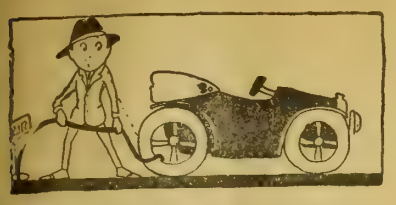
(2)

y the failure of the locking device to hold the outer rim securely and can be avoided by seeing that the ring is securely in place and the locking device acting properly before air is put in.

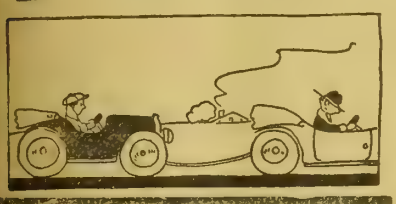


After very slight inflation, the locking arrangement can again be inspected to make sure that it is going to hold. Standing out of the way of the ring, should it blow off, is always a safe precaution.

STIFF ENGINE RESISTS CRANKING

J. R. writes: After taking up on the main bearings of my engine, I find that I cannot crank it. I am almost certain that none of the bearings are dangerously tight, as I took great care in the adjustment. I can exert enough force to spring the starting crank, but the engine does not budge. How can I turn it over?

Answer: By hitching your car behind another and allowing the latter

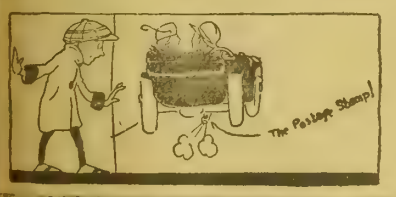


to tow it, putting your car into high gear and then gradually letting in your clutch, your engine can probably be turned over, but this must be done cautiously or your engine bearings may suffer. If you jack up one rear wheel of your car, throw in the low gear and clutch and turn the free rear wheel in the forward direction, by hand, you will exert great cranking power on the engine and start it, unless the bearings are altogether too tight for safety.

PREVENTING UNAUTHORIZED USE OF CAR

C. B. L. writes: I have a very strong suspicion that my car, which I keep in a public garage, has several times been used by someone, without my knowledge or consent, but I have no absolute proof of this. Is there any way I can get a check upon this sort of thing?

Answer: The most natural thing to do is privately to read the odometer and the gasoline gauge every time the car is left and screw on the gasoline filler cap to a secret mark. If any change is noted upon your return, the car has presumably been used. You can write your initials on a postage



stamp and stick it upon some inconspicuous part of the exhaust pipe when it is cold. If the stamp has been removed or is found charred, it is a pretty sure sign that the car has been upon the road. It is possible to leave the brake set and the lever sealed with a private seal, but if this is found broken, the excuse probably will be made that the car had to be moved to make room for others. The unauthorized use of cars has sometimes been discovered by the owners finding the engine warm, when he has not used it for days.

Unity–Stability–Prosperity

are the aims of the

Canadian Reconstruction Association

Industrial Stability
is essential to
Agricultural Prosperity

Farm and factory are linked in a national economic chain. Without the agricultural West there would be diminished markets for manufactured products, unemployment, and national depression. Without the industrial East prices for farm produce would decline, agriculture could not flourish, and "hard-times" would follow. During the war, agriculture and industry have prospered. During the reconstruction period, it is imperative that there should be no rash change in economic policy. Tariff uncertainty is already retarding the readaption of industry to peace conditions. Any revolutionary change in fiscal policy will produce industrial depression. With industrial depression, there will be diminished markets for agricultural produce, low prices for foodstuffs, and hard times for the farmer.

The Canadian Reconstruction Association urges
A NATIONAL POLICY IN THE NATIONAL INTEREST

EXECUTIVE

Rt. Hon. Lord Shaughnessy, K.C.V.O. *Honorary President* — Sir John Willison, *President* — C. H. Godfrey, Montreal, W. K. George, Toronto, W. J. Bulman, Winnipeg, *Vice-Presidents*

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E. W. Beatty, K. C. — Huntly R. Drummond — Sir Augustus Nanton — S. J. B. Rolland
W. A. Black — J. F. Ellis — Hon. Frederic Nicholls — T. A. Russell
A. N. Worthington, *General Secretary* — H. D. Scully

WESTERN COMMITTEE 510-11 Electric Railway Chambers, Winnipeg
HEAD OFFICE Royal Bank Bldg., Toronto
EASTERN COMMITTEE 603-4 Drummond Bldg., Montreal

THE NOVA SCOTIA FARMERS' ASSOCIATION

(Continued from page 685)

Friday 9 a. m.

Meeting opened with President in the chair. Report of credentials Committee received and accepted, after which the following officers were elected for the ensuing year:

President, D. R. Nicholson, Coxheath.

Vice-President, J. Howe Cox, Cambridge Sta.

2nd Vice-President, Johnson Cameron, Stellarton.

Directors: W. A. Bacon, Digby; Rev. R. L. McDonald, P. P., St Peters; A. N. Griffin, New Minas; A. G. McKay, Stellarton; Capt. Hugh Dickson, Onslow.

Exhibition Commissioners: H. S. Kennedy, Stellarton; Wm. O'Brien, Windsor Forks.

Auditors: J. P. Landry, J. M. Trueman.

Resolution re exhibition buildings, Halifax, read and accepted.

Report of committee in regard to the purposed cold storage plant.

Mr. Griffin speaking to the resolution said he considered it one of the best if not the best ever put before the Association. It should be boosted.

Mr. Corning then spoke on resolution, emphasizing the benefit to the consumer as well as to the producer. All should join hands to get the erection of this plant.

After several others had endorsed this resolution which found favor with all, it was received and accepted.

Resolution re inspection of wool passed.

J. D. McKenna, Manager of the Maritime Farmer, Sussex, N. B., then addressed the meeting on Co-operation. Mr. McKenna is thoroughly conversant with his subject and brought it before his audience in a very clear and concise manner. He spoke of the antagonism met with when the Maritime Farmer took up co-operative buying for the farmer, but things have progressed along this line until $150,000 worth of feeds alone were brought in to the farmers of New Brunswick this year at cost price. Mr. McKenna said it was no wish of his to advocate any particular line of co-operation. He did not wish to interfere in any way but to those who would care to take up this project that is so benefiting the farmers of New Brunswick he would be glad indeed to render any assistance along that line if they would just write him to that effect.

The benefits that would accrue in uniting the buying capacity of Nova Scotia, New Brunswick and Prince Edward Island could not be overestimated. Mr. McKenna cited the great benefits in the West derived from co-operative buying. Consider the asset of combined buying; the farmers should capitalize this asset for themselves and thereby save. Buy in car lots, pay cash and save huundreds of thousands of dollars in the Maritime Provinces. Orders amounting to $350,000 had passed through the Maritime Farmer to the Agriucltural Societies in the past year. He explained fully the workings of this co-operative buying through the Agricultural Societies. Through the Agricultural Societies the farmers also gets satisfactory banking accommodation.

In the Province of New Brunswick and through the pages of the Maritime Farmer, Banks now appeal to the farmer to come for credit, knowing this safe channel in lending to the farmer. The Banks being thus anxious to do busines with the farmer makes buying now easier. Make up your estimates for the year, buying unmixed goocs. Your society takes the orders, sends them to your Secretary-Treasurer, and he makes the Banking arrangements. New Brunswick has found this an excellent system. Mr. McKenna stated that next year they would be prepared to supply fertilizer to Nova Scotia at the same price as in New Brunswick.

In New Brunswick in the past year good seed, not fancy, but good, was purchased in this way. Some trouble has been had with regard to feed, the retailer making things rather unpleasant. Ground special at $34.90 a ton gave very satisfactory results in the County of Kings, very little bran and sorts being sold. Feed prices, Mr. McKenna stated, have certainly been brought down through the medium of the Agricultural Societies being in the business. In concluding Mr. McKenna said that although co-operation is not all sunshine, we have learned in the last four years what co-operation really means. It meant everything to the British Empire and now we are facing the bigest co-operative movement of all, "The League of Nations." Everything is organizing now and the man who is last organized seems to be the farmer. "Too much politics, and too little farmer," as Premier Foster remarked during his address to the New Brunswick Farmers Association this past week. At Fredericton there is a labor representative there during the whole session. At Ottawa the manufacturers and labor union have a permanent man there looking out for their interests, but did you ever hear of a Lobbyist from the farmers at Ottawa or Halifax? Why not? My suggestion to the farmers of the Maritime Province would be to get together and organize effectively and get down to business and don't stop at the Lobby. Send your men right into Parliament to represent your interests. In the Maritime Provinces we have farmers with quite as many brains as some others sitting around Legislative bodies. The time is here when the farmers should assert themselves.

Mr. McKenna closed his remarks by renewing his offer of all possible assitance should they wish to organize for co-operatinve buying.

Prof. Cumming in commenting on the address said he approved in general of the idea. Ontario and the West have done this and what they have done we can do also.

Lieut. Robertson wished to ask if Nova Scotia had a representative in the Canadian Council of Agriculture. On being told that they had not Lieut. Robertson said he thought they should have one. This Council is supposed to represent the farmers of Canada and if the Provinces of the West have a voice in that body, why not Nova Scotia? If they have, as some think, too advanced ideas, it is up to the farmers of Nova Scotia to have a representative to bring forth their views. Mr. Ells said their platform was a non-partisan one and worthy of being studied.

Mr. O'Brien moved a hearty vote of thanks to Mr. McKenna for the highly instructive and interesting address which he had given. He heartily agreed with Mr. McKenna's views on co-operation. This was seconded by Mr. Frank Foster, who said he knew something of co-operation and had benefited by it. Motion was unanimously carried.

The Legislative Committee was then appointed for the ensuing year: R. J. Mesenger, Lawrencetown; S. A. Logan, Amherst.

Mr. Nicholson, the newly elected President, was then called to the chair. Mr. . Freeman in vacating spoke of the pleasant relations during his term of office with the farmers of Nova Scotia and congratulated the Association on the appointment of their President for the ensuing year.

Mr. Messenger called for three cheers for the retiring president which were given with a right good will, followed by the singing of "For he's a jolly good fellow."

Lieut. Robertson referred to the passing of the Resolution re the Soldiers Settlement Act, on the previous day, and wished to know if it was a criticism of the Settlement Board. Mr. Corning, as seconder of that resolution, the mover being absent, assured Lieut. Robertson that no criticism or reflection was intended on the pe

PAROID
A NEPONSET ROOF

THE economy of roofing with Paroid is apparent when you consider:—

It can be laid quickly, and at half the cost of new shingles.

When put on, Neponset Paroid forms the ideal roofing—fire, weather and wear-resisting.

Neponset Paroid Roofing lives long, stands up, and pays for itself yearly by giving absolute protection and satisfaction.

Neponset Paroid Roofs have proven their durability and economy for twenty years.

Neponset Paroid Roofing can be applied over old shingles without the added expense of tearing them off.

A full set of the tools required for laying Paroid is shown below.

Roof with Neponset Paroid—it Pays.

Neponset Paroid Roofing is made in three colors: red, green and slate grey.

Sold by Hardware and Lumber Dealers.

BIRD & SON, LIMITED
HAMILTON, ONT.

MILLS: Hamilton, Ontario; Pont Rouge, Quebec
WAREHOUSES: Toronto, Montreal, Winnipeg, Calgary, Edmonton, St. John

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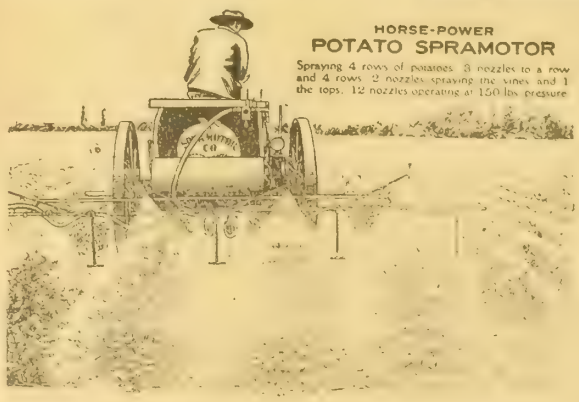
Getting Double and Triple the Crop with a Spramotor

It isn't a SPRAMOTOR unless we made it


HORSE-POWER
POTATO SPRAMOTOR
Spraying 4 rows of potatoes 3 nozzles to a row and 4 rows 2 nozzles spraying the vines and 1 the tops. 12 nozzles operating at 150 lbs pressure

TO GET twice and three times the yield from row crops, fruit trees and plants is the common experience with Spramotor users. We hesitate to mention the increases some farmers have secured—they are so great as almost to be incredible.

Buy a spray outfit—morover, buy a Spramotor; because it is the world's best, made right here in Canada, no duty to pay, has met and beaten the pick of all makes in Government contests and at the World's Fairs and Expositions. Every machine guaranteed.

FREE:—We have a valuable illustrated work on "Crop Diseases" to send you, postpaid, for the asking. Also catalogue showing our complete line of hand, horse, knapsack and power machines. Write to-day for your copy.

THE LONDON SPRAMOTOR, 6035 King Street, London, Canada

sonnel of the gentlemen on these boards. The idea was rather that the farmers felt the handicap too great, as presented by Mr. Robertson. Mr. Messenger said in interviewing different returned men, that he found that the intelligent soldier sees it differently than he did at first glance, and feels it is better to keep off.

Lieut. Robertson pointed out the fact that the Board has to consider the facts that a too easy proposition would mean a great rush of men, who perhaps had no particular aptitude for this line, and would throw up the sponge in a few years. He had neglected to state in his previous address that the Government has secured all erturned soldiers wholesale rates on purchases.

Mr. Bacon suggested that exemption from interest for a period of years would lessen the burden ocnsiderably. Lieut. Robertson considered this an excellent idea.

Prof. Cumming considered the general idea of Resolution passed was not far astray. Don't make the whole view of the farm proposition too rosy, give them the right idea. He was glad to know the general form of the resolution went through.

Prof. Trueman thought there was no need to worry if some were discouraged. As a member of the Qualification Board, he knew many had to be turned down.

The criticism of the Association he fully understood was of the Act, not of what is being done in Nova Scotia under the Act.

Mr. Corning felt that in justice to Lieut. Robertson, that a rider should be attached to former resolution, correcting any wrong impression made, and a committee was appointed to draw this up.

Mr. Burchill, Windsor, thought the Association could render invaluable help in guiding the choice of the soldier and looking out for his interests.

There being no further business the meeting adjourned to inspect the N. S. A. C., it's live stock and surroundings, a feature which the delegates found both pleasant and profitable.

Following are the resolutions passed during the session.

Resolved that this Nova Scotia Farmers' Association approves of any policy rendering practical assistance to the settlement of returned soldiers on the land.

We record our conviction, however, that the present Soldiers' Settlement Act while well intended, fails to the extent hoped for and may even result in injury to him.

We would strongly recommend that the soldier take no advantage of the Act as it stands at present, until such time as the price of building material, machinery, etc., becomes more nearly normal than such now are, and we recommend as a body that a sum not less than the value of the free grants of land given the veterans of the Boer war be first alowed each soldier land settler, either in cash or as a credit against any sums borrowed by him under the Soldiers Settlement Act.

And further resolved that copies of this resolution be sent to the Rt. Hon. Sir Robert L. Borden, to the Minister of the Soldiers Settlement Department and the Chairman of the Soldiers Settlement Board. Mover, R. L. McDonald, P.P.; seconder, H. W. Corn-

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Whereas the Exhibition Buildings in Halifax were destroyed by the explosion and therefore it is impossible to hold an Exhibition this year, which is a great loss not only to the Live Stock Breeders but also to the farmers of the Province of Nova Scotia

Therefore resolved that the N. S. Farmers' Association urge the Halifax Exhibition Commission to make every effort to re-estalish the Exhibition in Halifax, by the erection of permanent buildings for that purpose. Mover, Wm. O'Brien; seconder, N. Caldwell.

Whereas deer were some years ago imported into this Province and for a long period killing of said deer was prohibited by Game Laws for the Province,

And whereas the said deer have increase in number until they have become quite plentiful,

And whereas the said deer have been a great menace to the farmers, frquently entering their crops of vegetables and grain and destroying them wholly or in part and they are also gurdling and browsing and destroying young orchards,

And whereas there is a fine, running from fifty to two hundred dollars, on the Statute Books of this Province for killing deer out of season.

Therefore be it resolved that this Nova Scotia Farmers' Association now in annual session respectfully petition the Government of this Province to pass legislation whereby the Farmers of the Province be fully and substantially protected against the great amount of destruction done their crops and young fruit trees by the said deer. Mover, W. A. Becon; seconder, H. S. Kennedy.

(Continued next issue.)

"Would you step on a cockroach---or would you refrain from staining the floor ?"—*Roosevelt*

THE "ethics" of business call for courtesy between competitors—and the "ethics" of advertising also demand "truth in advertising." After observing the former, we find it absolutely necessary to "step on" some of the false claims and untrue propaganda of several separator manufacturers in an attempt to preserve a semblance of "truth" in their advertising.

We owe it to the dairy people of this country to present the real facts regarding cream separators. Propaganda based on the falsest of claims has been spread in an attempt to mislead American farmers. In presenting these facts, we stand ready to prove every assertion; they are based on actual records of dairy history.

Official records show that the first cream separator was invented by the French, and that patent No. 105,716 was granted to the company of Fives-Lille, of France, November 19, 1874, for a "system of continuous centrifugal separation." A little later the Danes developed the cream separator and were the first to introduce cream separators into America. Four years later, in 1878, a Swedish concern took advantage of the French invention and built a cream separator.

Looking for American business, this concern contracted with Mr. P. M. Sharples, an inventive genius of West Chester, Pa., to manufacture, install, and repair their machines in America. The first machines were decidedly impractical and unfitted for efficient use in American dairies and creameries.

Mr. Sharples attempted for a few years to make of this foreign machine a satisfactory separator, and during this time invented all the great improvements that have since been used by this type of machine. Among his invented improvements were the discs in the bowl, the splash oiling system, the detached spindle, the lowering of the supply can, and the concave bottom bowl, which permitted a part of the weight of the bowl to be suspended below the bearing. The complication of the machine, however, soon caused him to give up this manufacturing contract entirely, and, with true American ingenuity, he built a real American separator, adapted to American dairy needs and entirely different in that it was a most simple and efficient machine.

The Sharples factories are the oldest and largest separator factories in America. They have always been entirely American-owned. During the thirty-eight years of its existence, The Sharpels Separator Company has manufactured more separators than any other factory in America, and the output of the Sharples factory today exceeds that of any other separator factory in the world. More Sharples machines are being sold than any other, and a much larger percentage of those sold are today in actual use.

Every American dairyman should know these facts, and has the right to, and should, on buying a machine, ask the following questions of any separator manufacturer:

"Will your separator skim clean and deliver a cream of even density at any speed at which it may be turned ? Is the bowl free from troublesome discs or blades ? Has the separator an entirely automatic oiling system and do you guarantee your separator for durability to the extent that you guarantee a repair expense not to exceed $2.00 per year ?

"Is your separator built in American factories, by American manufacturers, by American labor, of American material, and entirely owned by Americans ? Is it truly an American separator, encumbered by no suspicion of taint of Hun propaganda ?

It is due to Mr. Sharples' untiring efforts during the thirty-eight years of his separator manufacturing experience—not to any foreign makers or inventors—that the American farmer owes the modern efficient cream separator. The Sharples Suction-feed Separator is the perfected machine; all other separators are today where Sharples left off years ago—old style, bucket bowl, fixed feed machines.

We say, without fear of contradiction, that the modern Sharples Suction-feed Separator

—is the *only* separator in the world that skims clean and delivers a cream of even density at widely varying speeds;

—is the *only* separator in the world with a controlled varying capacity;

—is the *only* separator in the world with a knee-low supply can, easy to fill;

—is the *only* separator in the world with a perfect automatic splash oiling system, not a single oil cup;

—is the *only* separator in the world with a hollow tubular bowl—no discs to wash.

Write today for the complete Sharples catalog on cream separators.—Address Dept. 79.

The Sharples Separator Co.

TORONTO, ONT. REGINA, SASK.

The Lounsbury Co., Newcastle, N. B. J. Clark & Son, Fredericton, N. B.
Distributors thorugh all their Branches

"OVER 2,425,000 SHARPLES SEPARATORS IN DAILY USE"

CO-OPERATIVE BULL ASSOCIATIONS

(Continued from page 659)

"I am more interested, and I am going home to see what can be done to organize an association; but tell me, how do you arrange for the keep of the bulls?"

"That is arranged by the members of each block. They find one man who will take care of the bull and then agree to pay him a stipulated amount for furnishing all or part of what is necessary to properly care for the bull. The members of each individual block can arrange this to suit themselves with only this condition to observe, that the bulls are the property of the whole associaion and must be kept according to the requirements of the association. It is in the hands of all the directors to see that the bulls are properly kept and the director in each individual block is held responsible for the proper care of the bull in his block."

"We will have to figure that out for ourselves, I suppose. I have been waiting for you to say something about contagious abortion. Is it not going to spread this disease, having the bulls used in so many herds?"

"That is what so many think when they first hear of this plan; but in reality the bull association makes better conditions. The objection is in the same class with the objection that you undoubedly have heard put up against the use of ensilage, that feeding ensilage to the cows will rot their teeth and burn out their stomachs. Observations with bull associations show that there is less trouble, if anythng, with this disease in bull associations than outside of them. The members in a bull association are working together under the best regulations in their by-laws for avoiding this disease, and it is very apparent that the organized condition of the farmers helps to control not only abortion but also other infectious diseases."

"I feel that this information has shown me a way out of one of my farm problems, and I am glad I came. May we come back with some more questions about how to organize a bull association if we find that there is enough interest in our district to organize one?"

"To be sure, but you may find this information nearer home by going to your state agricultural college. Remember this, however, such an organization does not organize itself. It takes some time to gather up your material and perfect the association; it does not build itself. You may find that your neighbors do not take hold of this matter at once. Some may feel that such an organization may not be practical, but there are 1,000 men in the United States who have proved the bull association to be very practical and successful. They are found in 18 states, and are members of 44 associations, and each association has, on an average, five blocks; nd I hope that also you and your neighbors, Mr. Dewitt, will be the beneficiaries of such an association.

"The state or federal extension worers, or both, will give you assistance, if you ask for it; and here are several copies of a sample constitution and by-laws that may be useful in drawing up a constitution for your association. Call again."

DESIRABLE CHARACTERS IN GRAIN VARIETIES

(Experimental Farms Note.)

The desirable characters of any variety are those that enable it to thrive in the environment in which it is placed, or give it commercial popularity. The undesirable ones are those that prevent it from achieving its best whether on the farm or in the market. According to conditions a desirable character in one locality may be an undesirable one in another.

In any kind of grain, yield is, and always will be, a desirable character, but in many localities the variety must primarily depend on other characters, such as drought resistance, early maturity and tightness of chaff, to give it value. In localities where conditions are less severe, these again may be of actual harm, as a larger yield could be obtained with a variety that was later in maturing, having a loose chaff and being more adapted to a humid climate.

Earliness exceeds yield in importance in all of the northern districts of Canada, and wherever it is a question of maturing grain before the time of frost.

Tightness of chaff in wheat is necessary wherever high winds prevail at the time of ripening as on our prairies. In eastern Canada, however, where no loss is experienced from winds, and the threshers are not used to threshing tight chaffed wheat, considerable grain may be lost over the rear of the mill.

Varieties that have the ability to resist drought do not, as a rule, succeed where there is an abundance of moisture.

High baking strength is absolutely essential wherever wheat is grown for export, but for domestic use a variety may be grown to advantage that has only moderate baking strength, if it gives a high yield.

Thinness of hull in oats is a desirable character under all conditions. Hullessness in oats is only desirable for a few special purposes. The husk facilitates the commercial handling of the grain and protects the kernel from injury.

Beards on wheat and barley are most undesirable, but in the case of barley it has not as yet been possible to produce a beardless variety giving a yield that will equal the best of the bearded sorts.

Awns in oats are unnecessary and are not in any way connected with yield.

The colour of grain is most important, not that it has any intrinsic value, but because the market demands a certain colour of kernel in wheat, oats and barley. This demand has arisen from the association of a certain colour with an outstanding variety such as the red colour of the Red Fife and Marquis wheats, etc.

Enough has been said to show the fallacy of the idea that any variety of wheat or oats or barley is superior under all conditions, to all other varieties. The truth is that every variety has its limitations, and it is up to the grower to procure a variety which possesses the characters that will enable it to thrive under his conditions. If in doubt, consult the superintendent of your nearest Experimental Station, or write directly to the Dominion Cerealist, Central Experimental Farm, Ottawa, describing your climatic conditions and requesting his advice as to the variety that will succeed best in your locality.

DUST "SPRAY" FOR FRUIT TREES

While a number of Canadian orchards have been treated with a dry dust instead of a wet spray, the operation is not general practised or understood. In a recent issue of Rural New Yorker reference is made to the work done along this line by the editor. "Our use of the dust," he says, "is confined to one season's work. We used it in fighting the codling worm and scab and similar diseases. We made no scientific experiment or exact measurement or weighing, but it was evident to all that the dust was fully as effective in killing the worms as the liquid poisons. As for apple tree diseases, the dust held them in check, but not quite so effectively as the liquid. The experience was so satisfactory that we shall continue to use the dust for the worms. When it comse to fighting the scale, plant lice and some other pests we shall depend on the liquid. We think there is little sense in claiming that this dust will destroy the scale. From the very nature of that insect and its manner of protecting itself it is evident that some penetrating and slow-spreading liquid must be used to coat the entire tree. We shall continue to use soluble oil or lime-sulphur put on with the liquid sprayer to keep the scale in check. If you have scale in your orchard, or if you need to spray for plant lice, you cannot reasonably expect to keep the trees clean and uninjured by using dust alone. If your object merely is to kill the codling worms and keep ordinary tree diseases in check the dust alone will do it.

"The dust is more expensive than the liquid. The power machinery will cost nearly as much as a power sprayer. We can put the dust on almost three times as fast as the liquid can be wel laplied. That was our chief reason for using the dust. The orchard is on a hilside, with a long haul for water. We can run down into the orchard with a half day's supply of dust and stay there until the job is done. This is the chief argrument in favor of dusting. In all large orchards there are times when the weather and the wind conspire to delay spraying. The buds mature rapidly, and in order to do effective work the poison must go on at once. In such cases the dust is invaluable, for it can be used rapidly so that the poison is put just where it is needed. Thus the dust will not entirely displace the liquid. It will take care of the worms and save labor and time, but in any section where the scale is found some liquid spraying will be needed.

GROWING CLOVER FOR SOIL IMPROVEMENT

One of the most interesting experiences on record, which had for its purpose the determination of the value of clover as a soil-improving crop, is that reported by Frank Shutt of the Canadian Experimental Farms at Ottawa. In the spring of 1897 an area of land, divided into plots of one-twentieth of an acre each. was sown

Old Dutch Cleanser
Pots and Pans are easy for Old Dutch. It cuts the burnt-in grease like nothing else can do. Just try it once on something hard to clean.
Old Dutch Cleanser
Chases Dirt

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To avoid Bugs and Blight—It Pays

The O-K Canadian 2-Row Sprayer works like a wheelbarrow and thoroughly sprays two rows at a time; agitator keeps mixture stirred. Nozzles adjustable for both height and width of row; can be used for spraying trees, whitewashing, etc., built for long service.

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THE O-K-SPRA
for hand spraying

Keeps going without cleaning longer than any other compressed air sprayer, owing to the "efficiency" non-clog nozzle with special thimble-shaped strainer; has special curved lance that saves you from backaches—no stooping to reach the under side of leaves; directs spray into otherwise hard to reach corners

Write for full particulars about O-K-Spra, and our 2-row and 4-row sprayers for large acreages. Also special information about spraying materials. Write to-day.

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O-K CANADIAN 2-ROW SPRAYER

partly to wheat, partly to barley and partly to oats. The osil was a sandy loam in a fair state of productivity. It had received an application of 15 tons of fresh manure in 1896 which had been followed by the growing of a crop of roots.

On May 5, 1897, the plots were sown to the grains above mentioned. One half of the number of plots devoted to each of the cereals was seeded to mammoth clover. The yields of crops in 1897 were as shown in the following table:

Yield Per Acre of Crops, 1987

Crop	Without Clover Bushels	With Clover Bushels	Gain for Clover Bushels
Wheat	19	16½	— 2½
Barley	36½	39½	X 3
Oats	61	57½	— 3½

The plots seeded to clover produced a rapid growth and had formed a heavy mat of foliage by October, at which time the area was plowed to a depth of 8 inches. On April 27, of the spring following, the plots were seeded to oats. The difference in the growth of grain was very noticeable and the resulting yields gave evidence of the effect of the clover.

Yield Per Acre of Oats, 1898.

Crop followed	Without Clover Bushels	With Clover Bushels	Gain for Clover Bushels
Wheat	37	56	19
Barley	37	44	7
Oats	44	55	10

In 1899 these plots were sown to barley. The effects of the clover were still evident both in the apparence of the crop and in the yield.

Yield Per Acre of Barley, 1899

Crop followed	Without Clover Bushels	With Clover Bushels	Gain for Clover Bushels
Wheat and Oats	25	40	15
Barley and Oats	28½	33	4½
Oats & oats	33½	44½	11

These increases in yield are considerable. Yet the experiences of many farmers would seem to indicate that they are not excptional. This does not necessarily mean that the effect was due entirely to the nitrogen secured from the air by the clover, but it does mean that ti was due to the clover having been grown.

Nitrogen organisms aid in increasing yields. The nitrogen collected by the nodule organsms and their associates, especially Azotobacter, must certainly be credited as being responsible for a part of the increased yield. That the nitrogen so fixed may be considerable is indicated by another experiment conducted on the Ottawa Experimental Farm to determine this point. A plot of ground was set aside for this purpose on which clover was grown for 10 consecutive years, each year's crop being cut and allowed to decay on the plot. The clover was reseeded every 2 years to insure a good stand. The soil, at the beginning of the experiment showed a nitrogen content of 533 pounds per acre to plow depth. At the end of 5 years the soil contained 841 pounds and after 10 years, 1,044 pounds of nitrogen per acre. This represents a gain of 51 pounds per acre each year in addition to that lost in the drainage water.

Where did the nitrogen come from? Some very important circumstantial evidence of the value of the clover crop is contained in the 35-year test which has been conducted at the Pennsylvania Experiment Station. In this test the rotation has been corn, oats, wheat and hay, the hay being a mixture of clover and timothy with clover predominating in favorable years with good treatment. In this experiment, by the use of what would correspond to 300 pounds of 16 per cent acid phosphate and 200 pounds of muriate of potash, the yield of crops has been maintained during the entire period at an average of 52 bushels of corn, 42 bushels of oats, 19 bushels of wheat and 2 tons of hay per acre.

A study of the yields by periods does not indicate that they are decreasing. The question arises, "Where did the nitrogen for these crops come from?" No manure was applied and all the crops were harvested and removed from the field. We can only say that apparently the nitrogen content of these soils has been maintained at the expense of the nitrogen in the air in which the clover nodule organisms played an important part.

Similar evidence is available at Wooster in the experimental work with fertilizers on the 5-year rotation of corn, oats, wheat, clover and timothy. The records on Plot 8, which has received 320 pounds of acid phosphate and 260 pounds of muriate of potash in every rotation during the 25-year period, covered by the test, indicate that the yields on this plot are being maintained. The nitrogen content of the crops removed in 25 years is estimated to be 1100 pounds per acre. It would appear that this amount of nitrogen, together with that lost in the drainage, must be accounted for largely, if not entirely, in the nitrogen-fixation process going on in the soil.

Canadian Ad. No. 1—131 lines x 6⅛ in.

No. 306 Hill or Drill Seeder, furrowing, planting, covering, rolling and marking next row in one operation.
HILL DROPPING DEVICE

Save Seed

Whenever practicable, *plant in hills*—save the seed that would otherwise be wasted in crops which are widely thinned

—avoid useless buying of high-priced seed, and conserve the world's supply by using the hill-dropping feature on the Iron Age Hill and Drill Seeder. This saves from a half to three-quarters of the seed used by drilling and very greatly reduces cost and the labor of thinning.

Last year we all gardened as a matter of patriotism. We learned what a fine thing it is to have *our own* fresh, succulent vegetables, and also that it pays! Now—the boys are coming home! New nations are in the making—new nations to be lead and fed! More urgent than ever is the need for

Bigger Better Gardens

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Otherwse, the yields would certainly be on the decline.

The value of clover as a protein feed alone should insure the growing of an extensive acreage of this legume on every farm in Maritime Canada. When, in addition, we consider its effect on the soil, both direct and because of the greater plant food content of the manure produced from feeding the clover crop, we are led to believe that clover should find a most prominent place among Maritime Province farms. If there is a failure to grow clover owing to the difficulty of getting a stand, try to locate the reason why.

When the soil fails to grow good crops of clover it is under suspicion. Drainage, limestone and a light application of barnyard manure or fertilizing chemicals are the remedies. A close observation of the conditions and the clover plant's answer to your questions will give you a clue as to which remedy you should apply.

MARKETS.

CHARLOTTETOWN

Beef market easy. Carcass 14c to 16c; ;retail 20c to 24c.

Veal, scarce, Carcass 12c to 14c; retail 18c to 20c.

Hogs, market firmer, selects, carcass includes organs 18c.

Lamb carcass, 20c to 24c; retail 24c to 28c.

Mutton carcass, 16c to 18c; retail, 20c to 24c.

Beef Hides, unchanged, at 16c.

Sheep Skin, market dull at 16c. $3.00 each.

Calf Skins, 25c per lb.

Potatoes, market dull, 40c per bus.

Carrots, very few offered, price nominal, $1.50 per 100 lbs.

Turnips, 20c to 25c per bus., no demand.

Parsnips, very few available, $2.00 per 100 lbs.

Oats, market quiet at 60c to 65c per bushel.

Cornmeal, feed, $4.00 to $4.25; table, $4.50 to $5.00 bag.

Bran, $2.20 to $2.30 bag.

Oatmeal, 5.50 to $6.00 bag.

Middlings, $2.40 to $2.60 bag.

Cotton Seed Meal, none.

Oil Cake, $3.50 to $4.00 bag.

Ontario Flour, $12.00 to $12.25, wholesale in wood.

Manitoba Flour, $12.25 to $12.50, wholesale in wood.

Chickens, 20c to 30c, very few offering.

Fowl, 16c to 24c per lb.

Turkeys, none.

Geese, none.

Butter, Creamery, 50c to 52c per lb. wholesale.

Butter, Dairy, 40c to 45c per lb.

Cheese, very scarce, 62½c to 27½c.

Eggs, market declining, present price 35c.

Hay, market firmer, pressed, $15.50 to $18.00 ton; loose, 80c to 90c per 100 lbs.

Straw, loose, 45c to 60c per 100 lbs. Pressed, $12.50 to $14.50 per ton.

THE LOCAL GRAIN MARKET

Montreal, March 15.—The feature of the grain trade today was the pronounced strength which prevailed in the option market for corn at Chicago and prices scored a further advance of 3 ⅞c to 5c per bushel, which makes a net gain so far this week of 8¼c to 9c. The market today was excited on the advance in prices for hogs, which forced shorts in corn to cover. The Winnipeg market was also stronger in sympathy with the above and oats closed ½c higher and barley ¼c. A much stronger feeling also developed in the domestic market for cash grain and prices for Canadian western oats were advanced 1c per bushel, Ontario grains 2c, and barley 1c to 2c. This strength was entirely due to the conditions of the above markets, as there was no improvement in the local or outside market to warrant any change in prices, and business generally was dull with car lots of No. 3 Canadian western barley quoted at $1.10, No. 4 C. W. at $1.04, extra No. 3 Ontario at $1.11, No. 3 at $1.10 and sample grades at $1.04, No. 2 Canadian western oats at 86c, No. 3 C. W. at 81c, extra No. 1 feed at 78c, No. 2 feed at 74c, Ontario No. 2 white at 76c and No. 3 white at 74c per bushel ex-store.

DAIRY PRODUCE TRADE

The receipts of butter today were 12 packages as compared with 37 for the same day last week, and 57 for the corresponding date a year ago. The feature of the trade today was an advance of 1c per lb. in prices for job-

FARMERS FRIEND FENCING
FROM FACTORY TO FARM
PLOW TO THE FENCE LINE
Because of the present high price of living and farming, every farm owner should utilize every available foot of ground to the best possible advantage. You cannot do this with the old rail fence. You are bound to have a lot of waste land in the fence corners, growing obnoxious weeds, infesting the whole farm and making an unnecessary expense and a waste that should be obviated. You are interested in making money—not wasting it. A farm to bring a return for the money invested and the labor expended must be farmed thoroughly —all of it farmed thoroughly. There must be no waste fence corners and no weeds to contaminate the land. A farm to be profitable must be clean.
When you plow to the fence line, as is shown in this illustration, you reach a maximum efficiency. A full hundred per cent fence satisfaction is realized. These are all important considerations. A good fence must be well made. Not only must the material—the wire that is used—be of the best, but the knot that ties the stays and lateral wires together must be of the best. Then you have a fence that stays where you put it. Same even tension winter or summer—strong—durable.
There is great satisfaction in constructing a good fence like the
SARNIA
Fence for these reasons. The strong line wires have a wave or crimp which gives elasticity and spring to the fence and also provides for expansion and contraction caused by heat and cold. Great care is given to a uniform tension on each wire, so that there will be no long wires to make the fence sag, nor any short wires to take up all the strain and break. The strain is evenly distributed on each wire. The Sarnia Knot fastens the stay wires to the line wires in such a manner that they cannot be slipped in any direction. At the same time permits easy erection over rough or uneven ground without kinking or bending either the lines or the upright wires.
We sell direct; prepay freight on all shipments in Old Ontario. New Ontario, Quebec and Maritime Provinces, 4 cents per rod extra. Our office at Winnipeg takes care of all Western Canada business, quoting F. O. B. Winnipeg, thus effecting a splendid saving in that part of the Dominion. Sarnia Fence is made in Canada for Canadian farmers. Sold direct on our "save-you-money" plan. Order now. Have your fencing on hand when you need it and at our exceedingly low prices. Send for descriptive literature, price list and order blank.
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"You'll like the Flavor"
The Big Value Package that is Guaranteed.
Perfectly packed in bright lead foil, and price marked on every package.

bing lots, which was attributed to the recent strength in the wholesale market, and sales of finest Eastern Townships creamery were made at 54c per lb. in solid packages, and at 55c in 1 lb. blocks. There was a very firm feeling in the wholesale market with a stedy trade passing in finest New Zealand creamery at 55c per lb., finest Eastern Townships at 53½c, and finest western at 53c, while undergrades sold at 51½c to 52½c.

We quote wholesale jobbing prices as follows:

Finest creamery solids....00c to 54c
Finest creamery blocks...00c to 55c
Fine creamery, solids....52½c to 53c
Finest dairy .....45c to 46c
Fine dairy .....44c to 44½c

The receipts of cheese today were 20 boxes as against 84 for the same day last week, and 16 for the corresponding date a yera ago. There was nothing new to note in the market today business being quiet and prices unchanged.

THE FLOUR MARKET

Montreal, March 15.—The flour market was without any new feature to note, busines in all directions being quiet, and the prospects anything but encouraging for any improvement in the near future. The tone of the market remains steady and prices unchanged with car lots of Government standard spring wheat flour quoted at $11 per barrel in jute bags, ex-track, Montreal freights, and to city bakers at $11, ex-track, or at $11.10 delivered, while smaller quantities are selling to city bakers at $$11.10 ex-track, and to grocers and other dealers at $11.20 ex-track, all less 10c per barrel for spot cash. The condition of the market for winter wheat flour is unchanged with only a small trade passing at $10.20 to $10.30 per barrel in new cotton bags, and at $10 in second-hand jute bags, ex-store. The demand for white corn flour is dull at $8.50 to $8.70, and rye flour at $8.50 to $9 per barrel in bags, delivered to $8.50 to $8.70, and rye flour at $8.50 the trade.

MILLFEED AND ROLLED OATS

Montreal, March 15.—The condition of the market for millfeed was unchanged, the demand for all lines being still somewhat limited and business was slow for the season of the year. Car lots of bran were quoted at $40.25, and shorts at $42.25 per ton, including bags, ex-track, and small quantities of the former sold at $43.75, and of the latter at $45 to $46, pure grain moullie at $64, pure oat moullie at $60 to $62, pure barley feed at $52 to $54, mixed grain moullie at $47, and dairy feed at $43 per ton, including bags, delivered to the trade. There was no improvement in the demand for rolled oats and prices for broken lots of standard grades were steady at $3.90 to $4 per bag of 90 lbs., and Golden cornmeal sold at $4.50 to $4.75 per bag.

THE BALED HAY MARKET

Montreal, March 15.—A fair trade continues to be done in baled hay and the tone of the market is firm with supplies coming forward ample to meet all requirements, and sales of car lots of No. 1 timothy hay were made at $25, No. 1 light clover mixed hay at $24, No. 2 timothy hay at $24, No. 2 clover mixed hay at $23, and No. 3 timothy hay at $22 per ton, ex-track.

THE PROVISION MARKET

Montreal, March 15.—The feature of the live hog situation was the decided feeling which prevailed in the Toronto market yesterday, and prices scored an advance as compared with last Thursday of 75c to $1.15 per 100 lbs. which was attributed to the keener demand between packers for supplies owing to the prospects of further evxport orders for hog products, and sales were made at $19 per 100 lbs. weighed off cars, and at $18.75 fed and watered. The Winipeg market was firm and unchanged with sales of selected lots at $17.25 per 100 lbs. weighed off cars. The local market today was stronger in sympathy with the above and prices made a further advance of 25c per 100 lbs. under a good steady demand for all offerings, and selected lots sold at $18.50 to $18.75 per 100 lbs. weighed off cars. The market for dresed hogs was firm with a fair trade passing in a jobbing way in abattoir fresh-killed stock at $25 to $25.50 per 100 lbs.

There were no new developments in the condition of the market for smoked or cured meats, but the feeling is very firm, and the prospects are that that if prices for hogs advance much further there will be a readjustment of values for all the above lines in the near future. The demand continues steady for small lots for domestic account and fair trade was done in a jobbing way in 8 to 10 lb. hams at 35c per lb., 12 to 15 lbs. at 33c. to 34c., and heavier weights at 31c to 32c, while breakfast bacon sold at 40c, Windsor selected bacon at 42c to 43c and Windsor boneless bacon at 44c to 45c. The market for barreled pork was quiet but firm with sales of small lots of Canadian short-cut at $54, short-cut fat back pork at $52, mess pork at $45, and bean pork at $43 per barrel.

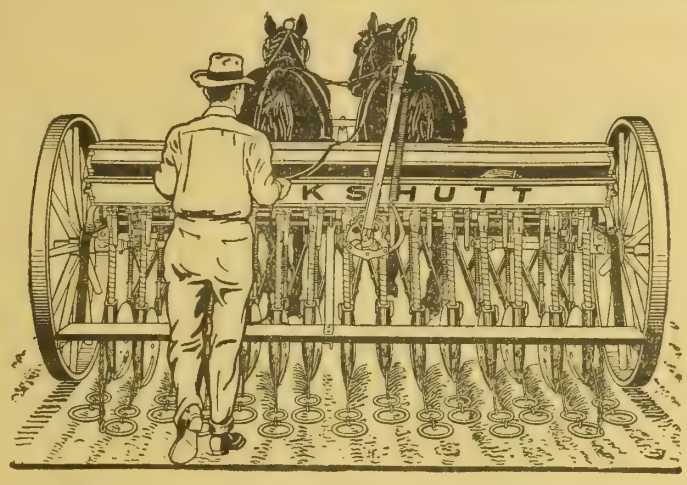
The tone of the market for lard was also firm with a fair trade passing in a jobbing way in Canadian pure leaf grades at 28c per lb. in 20 lb. wood pails, and at 29c to 29½c per lb. in 1 lb. blocks. hTe receipts today were 58 packages lard, and 234 tinned mets.

Pep is the thing which causes us to think clearly and act quickly.

COCKSHUTT SEED DRILLS

To buy good, vigorous seed—to faithfully put the land in good tilth and then fail to see that the most important operation, Seeding, is correctly done would seem to be inexcusable yet many a poor crop is traceable to that very thing. The Drill you use may be hopelessly out of repair and out of date. Better scrap it and go in for a Cockshutt and you get

Accurate, uniform, reliable Seeding absolutely assured



Here's a light draft Drill built with superior Canadian workmanship and materials and many years of practical field experience behind it.

It has the rugged strength that makes for hard, steady, repair-free servicee over a long life time. Its immensely strong I beam and frame mean absolute rigidness, with lightness. Wide, strong wheels with self-aligning axles, give splendid traction—no sliding on rolling ground. The feed is absolutely positive, harmless to seed, and can be quickly regulated to sow any desired quantity. Discs, in two seections, cultivate ground as well as giving an even channel for seed. Each disc is independent and will rise at an obstruction; when disc sections are raised feed is cut off.

The Cockshutt Drill doesn't need ideal soil conditions—it's built to do good work in any field, clean or trashy, wet or stone hard.

We have a special Drill Folder you ought to read. It's a very important subject. Write our nearest Branch for a copy today.

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Keep your live stock healthy. Your horses, cows, hogs and sheep will repay you in increased production and work.

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added to a good, nutritious ration every day, supplies just what's needed to turn all the nourishment in the feed into firm flesh, rich milk, etc. "Pratts" is a mild, vegetable tonic and conditioner. Not a stimulant. Contains no injurious chemicals. Try it now.

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PRATTS DISINFECTANT keeps the stables and pens clean and free from disease germs. Destroys lice and ticks. Preserves health. 1 gal. and 1 qt. cans at your dealer's.

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Pratts

1279 SPECIAL TRAINS ON C. G. RAILWAYS

Up to March 1st 767,400 Troops Have Travelled Over Government Railways.

Thousands Arrive Each Week at Halifax and are Sent Forward to Dispersal Areas.

Since the war began in 1914 up to March 1st, when S. S. Belgic disembarked her returned soldier passengers at Halifax 767,000 troops have been carried on special trains over the Canadian Government Railways.

The first train which carried troops over the Government Railways the year the war was declared was numbered one and all special troop trains to and from Halifax since that time have been numbered consecutively. The last train from the "Belgic" on Saturday was No. 1279. Each train averages about twelve cars with an average of 50 men to a car, which figures up to a total of 767,400 men carried. Of course in addition to this thousands of soldiers have journeyed between Montreal and Halifax by regular trains during the past four years.

The movement of troops back to Canada is now approaching its greatest activity. Last Saturday nearly 6,000 arrived at Halifax by the transports "Lapland" and "Belgic" and fifteen special trains were dispatched westward inside of fourteen hours.

S. S. Megantic with soldiers and dependents arrived Wednesday and S. S. Adriatic is due Sunday. The movement of returning men is to be kept up actively all summer.

The process of disembarkation at Halifax is being carried on without a hitch and there is a fine system of co-operation between the Military and Railway officials.

87 YEARS OF PROGRESS

It is typical of the solid progress of the Maritime Provinces and of their sterling integrity in financial matters, that their most representative bank, the Bank of Nova Scotia, should be today one of the foremost financial institutions, not only in the Maritime Provinces but in the whole of Canada. The splendid growth in assets and resuorces of this Bank are, however, merely a measure of their ability to serve the farmers, the merchants, and the public generally, for the growth of such assets is only possible as a result of public confidence in the Bank. With a paid up capital of $6,500,000, a reserve fund of $12,000,000 and total assets over $150,000,000 it will be seen what a powerful aid to Canadian trade the Bank of Nova Scotia is. Its assets have practically doubled since the end of 1913.

The Bank of Nova Scotia has shown steady progress since it was founded in 1832 and now has 33 branches in New Brunswick, 30 in Nova Scotia, 7 in Prince Edward Island and 85 in the fest of Canada. It has also 20 branches in Newfoundland, also many branches in the West Indies and correspondents in the Uited States, Greot Britain and France.

The Head Office of the Bank of Novo Scotia is at Halifax and a deep interest in the welfare of the Moritime Provinces is and olways has been one of its first considerations.

There is probably a branch of the the Bank of Nova Scotia near you ond your occount would be much appreciated. Your sales cheques, personal cheques will be cashed, your drafts collected and the proceeds sent to you by mail if ncessary—in fact all your banking with us can be done by mail if convenient to you. Our Branch Managers also stand willing to give you friendly disinterested advice at all times on any financial or business matter.

ANNUAL REPORT OF CANADIAN SEED GROWERS' ASSOCIATION

The Fourteenth Annual Report of the Canadian Seed Growers' Association covering the work of that organization for the year ending March 31st, 1918, has just been published and is now available for distribution to those who apply for same to the Publications Branch, Department of Agriculture, Ottwa. The Report opens with a brief statment regarding the origin, constitution, aims and methods of the Association. This is followed by a list of officers and active members.

The Director's Report reviews the conditions of the preceding season and their effects upon the production of seed. It exprsses the Director's appreciation of the continued co-operation of Departmental officials in the different Provinces. The methods of the Co-operative Society at Ste. Rosalie Jct., P. Q. are pointed to as a model worthy of emulation by the other Provinces.

The Report of the Secretary, L. H. Newman, Ottawa, indicates that 285 farmers have aplied for membership during the previous Association year. Of this number 65 have qualified for full membership. Work aiming at the improvement of various crops is dealt with briefly special reference being made to the good work being accomplished by various competitions.

Important amendments made in the Regulations on the occasion of the last annual meeting are published. These amendments make it possible for any farmer to secure seed known as first or second generation Registered Seed and have the imediate progeny of this registered providing the growing crop is inspected and the harvested crop is up to standard. The hope is expressed that this amendment may result in increasing the quantity of good seed in Canada very largely.

SETTLING RETURNED SOLDIERS ON THE LAND

The Soldier Settlement Board has recently increased its activities to a marked extent in the Maritime Provinces. Three new offices have been opened at St. John, Charlottetown and Halifax. The work in the Maritime Provinces is under the direction of Lieut. J. C. Robertson, who has a local representative stationed at each office. Under the new regulation, soldiers who have been discharged from the army, and who make application will receive assistance from the Soldier Settlement Board in the purchasing and equipping of farms, providing that they are adequately qualified. An Agriclutural Qualification Committee has been appointed for each province. This Committee consists of practical men who are qualified to determine the experience necessry in order for the men to make a success of farming in their respective provinces. Wherever possible a returned soldier farmer is a member of this committee. For the province of Nova Scotia, a very strong committee has been appointed, which consists of Prof. J. M. Trueman, of the Nova Scotia Agricultural College, Truro; Mr. F. H. Johnson, Ex-President of the Nova Scotia Fruit Growers' Association, and a prominent farmer, and Capt. Hugh Dickson, who has seen service overseas, and is a well-known stock-breeder and a large farmer. This committee has held one meeting at the Nova Scotia office of the Soldier Settlement Board, and they dealt with all applications that have been received to date. Their next meeting will be held on March 18th, and apparently they will have a very busy time of it, for enquiries and applications are pouring in at a rapid rate. It should be clearly understood by a returned soldier who wishes to take up land, that it will be necessary for him to have at least 10% of the purcahse price of the farm he has in mind, and if he has considerable more than this, it will increase materially his chances of becoming a successful farmer.

The Qualification Committee in the province of New Brunswick consists of Mr. T. W. Caldwell, of Florenceville, Carleton Co., a prominent farmer who is actively interested in the United Farmers' movement, Major Guy Kinnear, of Sussex, and Major J. J. Bull, of Woodstock, both of whom were practical farmers before serving their country on the battlefields of France. At the last meeting of this committee, seventy-two applications were dealt with, showing that much interest is being taken in this movement. The second meeting is being held in Fredericton on March 18th.

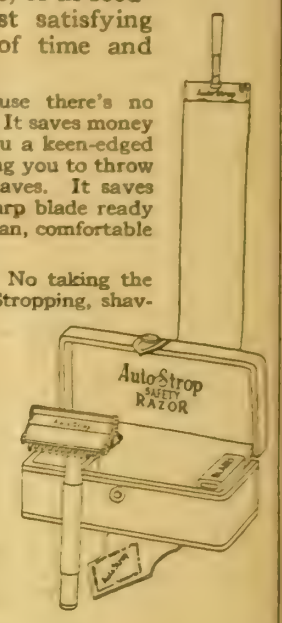
The work of the Board in the province of Prince Edward Island has, up to the present, been looked after by

The progressive farmer naturally prefers an AutoStrop Razor

He prefers it for the same reason he chooses the latest idea in tractors, in separators, or in seeding, because it gives him the most satisfying results with a distinct economy of time and money and effort.

The AutoStrop Razor saves time because there's no fumbling with parts; it's all in one piece. It saves money because its self-stropping feature gives you a keen-edged blade for every shave, instead of compelling you to throw away a blade after only three or four shaves. It saves effort because since there is always a sharp blade ready for use—it enables you to get a close, clean, comfortable shave with the least number of strokes.

To clean, simply dip the razor in water. No taking the razor to pieces and assembling it again Stropping, shaving and cleaning are all done without removing the blade from the razor.



An AutoStrop Razor complete with strop and 12 blades sells at $5; but the dealer will hand you back your money without argument; if the AutoStrop Razor doesn't give you the coolest and cleanest shave you ever had from any razor.

AUTOSTROP SAFETY RAZOR CO., Limited
AutoStrop Building, Toronto, Canada

F

AutoStrop Safety Razor

FOR MAPLE SYRUP AND SUGAR

Every maker of Maple goods in Eastern Canada should be interested in this remarkable contest. It will help all makers of Sugars and Syrup on the Grimm Champion Evaporator to have an expert opinion of their goods, whether they win a prize or not. The GRIMM CHAMPION OUTFIT is built with one idea—the best syrup and Sugar at the least cost. Start wtih good, clean sap and the Grimm Champion does the rest. Put a Champion in your grove as early as possible. We can give you the right size at the right price. Write

GRIMM CHAMPION OUTFIT

THE GRIMM MANUFACTURING CO.,
LIMITED
45 Wellington Street, Montreal, Que.

the Minister of Agriculture, Hon. Murdoch MacKinnon, and the legal representative has been J. D. Stewart, Esq., K. C., who will continue to assist. A very efficient Qualification Committee has been appointed consisting of Mr. A. E. Dewar, Charlottetown, Queens Co., Mr. E. B. McLaren, Georgetown, Kings Co., and Mr. Jeremiah Noonan, Prince Co. These gentlemen are practical, every day farmers, who represent every county in th Island and understand thoroughly the factors governing success in farming. A meeting of of this committee will be held in the new officcs, Relief Building, Charlottetown, on March 20th or 21st.

The Maritime Supervisor, Mr. J. G. Robertson, son of R. S. Robertson, Esq., native of Pictou County, being born on a farm in Churchville, Pictou Co., educated in New Glasgow High School, MacDonald Agricultural College and McGill University, from which he received the degree of B.S.A. After graduation he went west and when war broke out, he was General Manager of the Detchon Farms, consisting of 14,000 of land in Saskatchewan, on which they raised over one hundred and thirty thousand bushels of wheat per year, besides large quantities of other grains. His service in France has been with the 44th Battalion and he was severely wounded on the famous Vimy Ridge.

Lieut. Robertson is working in close co-operation with the Provincial Goverments, with the Experimental Farms and with the Great War Veterans' Associations. His assistant in the Halifax office is Sergt. H. H. Congdon, who is a graduate of the Nova Scotia Agricultural College and has seen considerable service in France. In St. John an able assistant has been found in the person of Mr. William Kerr, who was formerly Secretary of the Provincial Farms Settlement Board, and who is well qualified for the position, being thoroughyl acquainted with the farming situation in the province. In Charlottetown, he has associated with him Sergt. N. W. Lother, a native of the Island, who was severely wounded, losing a leg in the service of his country.

It is highly advisable that all returned men who are interested in this work, should make application to any of these offices as soon as possible. Certain procedure has to be followed, preliminary informbtion given, copies of their discharge taken and then farms will have to be inspected by the Board's farm inspector. All officials are anxious to place as many men as possible on the farms this spring providing they are genuine farmers, qualified to farm successfully and have at least ten per cent. in cash of the value of the farm they are settling on.

BROOD MARE BEFORE FOALING

Prior to the birth of the foal, mares should have enough of good wholesome food and water; plenty of exercise; clean, light and altogether sanitary quarters, along with regular attention directed or given by a man who likees the horses and who looks after this matter, not from a sense of profit and loss alone, but because of human interest and duty. On the average farm the problem of exercise is not troublesome. The great difficulty is to find help that will handle brood mares carefully. Brood mares may work up to within two or three days of the date of foaling, and be benefited by it. They should be given moderate but steady work. Such mares should not be given work which requires backing heavy loads, or where there is a chance of slipping. But they can and should be worked. As a ageneral rule, mares doing light work should eat approximately one pound of hay and one pound of grain per day per 1,000 pounds live weight. This matter should be governed, however, by the condition of the mares and they should be gaining in condition with digestion in best of condition as the critical time appraches.

The habit of halter pulling is frequently brought about by the animal becoming frightened in the stall.

Tell the advertiser, when you write, that you saw it in The Maritime Farmer.

Th practical way in which to take care of the plant food fund and to see that there is al ays a balance in favor of the soil, is to feed the greater part of the crops to live stock that will permit the return of the greater proportion of the fertility to the soil from which it was removed.

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VICTORY LOAN

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War-Savings Stamps

When you take your Victory Loan or other interest coupons to the bank, ask the teller for the equivalent in War-Savings Stamps and Thrift Stamps.

MAKE THE INTEREST EARN INTEREST.

At the rate of interest paid on War-Savings Stamps your money doubles itself in less than 16 years.

Thrift Stamps cost 25 cents each. A Thrift Card is provided free of charge, and when 16 Thrift Stamps are affixed to it, it represents $4.00 on the purchase of a War-Savings Stamp.

With your first War-Savings Stamp, a Certificate is provided with spaces for 10 W-S.S. When filled, this Certificate is a Dominion of Canada "Bond" worth $50.00 on Jan. 1st, 1924.

Buy War-Savings Stamps at any Money-Order Post Office, Bank, or other place displaying the Beaver-Triangle sign.

Price in March, 1919	$4.02
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" " May, 1919	4.04
Redeemed on Jan. 1st, 1924	$5.00

"War-Savings Stamps will provide financial assistance to the Government; an excellent investment for small savings; and a strong incentive to every-day economy".

—SIR THOMAS WHITE,
Minister of Finance.

73

Fruit Packages

We Manufacture Strawberry Boxes and Crates for same, 6 qt. Baskets, Apple Boxes, Box Shooks, Apple Graders, Wheelbarrows. Now is the time to lay in a supply of Fruit Packages for the coming season. We have a good stock on hand, order early and ensure prompt shipment. Price on application to

Hantsport Fruit Basket Co., Ltd.
HANTSPORT, N. S.

Practical Books for Practical Men

RUN IT YOURSELF—You can quickly learn to run steam engines by studying Young Engineer's Guide. Save the expense of hiring an engineer. Book recently revised to 254 pages, illustrated. Endorsed by engine manufacturers and leading engineers everywheer. Price, bound in cloth, postpaid, $2.00. Write for Catalogue of latest and best practical and mechanical Books.

Windsor Supply Co., Windsor, Ont.

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Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The address must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issue. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

WANTED—A gander over two years.—R. HUNT, Halifax, N. S., P. O. Box 567.

WANTED—A Gander over 2 years. R. HUNT, Halifax, P. O. Box 567.

FOR SALE—Pure herd Percheron Stallion, age, 3 years. Apply LEO MILLER, Linville, Carleton Co., N. B.

FOR SALE—Yorkshire pigs. Four weeks and upward, from sows due to farrow in March and April. JOHN OGILVIE, Elderbank, N. S.

NEW BRUNSWICK GROWN TREES. Nursery stock of all kinds at reduced prices. Ten per cent. discount. Write for list. R. A. FILLMORE, Burton, N. B.

FOR SALE—Four pure bred Aberdeen Angus bulls, ages, one 15 mos., two one year, one 4 mos. F. T. PUGSLEY, Tregothie Farm, Windsor, N. S.

EGGS FOR HATCHING from pure bred White Wyandottes. Splendid layers. $2.00 for 13. THOMAS SEELY, Hampton, Kings Co., N. B.

FOR SALE—One registered Holstein bull calf, sired by "King Korndyke's Johanna" No. 32915. His dam and grand dam have each milked over 100 lbs. per day. For further reference write HENRY McINTYRE, Campbellton, N.B., Box 525.

LADIES WANTED to do plain and light sewing at home, whole or spare time, good pay, work sent any distance, charges paid. Send stamp for particulars. NATIONAL MANUFACTURING, COMPANY, Dept. A. Montreal.

FOR SALE—Registered Ayrshire Bull, 3 years old, "Lakewood Prince," No. 52147. Price reasonable. Apply to T. E. DESMOND, R. F. D. No. 1, Lakewood, St. John, N. B.

HATCHING EGGS from prize and record laying White Wyandottes, Reds and Barred Plymouth Rocks. Get our 1919 mating list, it will pay you EVANGELINE POULTRY YARDS, Wolfville, N.S.

FOR SALE—One registered Holstein bull calf, sired by "King Korndyke Johanna" No. 32915. His dam and grand dam have each milked over 100 lbs. per day. For further reference write HENRY McINTYRE, Campbellton, N. B., Box 525.

FOR SALE—Registered Large English Yorkshires. We have several sows bred for April litters. First orders get the choice. EDWIN ESTEY & SON, Woodstock, N. B., Route 6. Pleasant Valley Farm.

FOR SALE—Pure bred Percheron Stallion "Kerlogoden Imp" (4002) a kind, quiet, sure foal getter, light grey in color, foaled 1910. Am selling for no fault whatever. Apply C. P. ROY, Pine Tree, N. S.

FOR SALE—One 1 H. C. 6 H. P. 16 x 18, motor hay press. This machine is in perfect working order, only being run about four months. Will sell at half the present day price. Apply C. P. ROY, Pine Tree, N. S.

CUDMORE'S—S. C. B. Minorcas, Four grand pairs mated up for this season. Winners at Moncton and Charlottetown If you want something choice in Minorcas, try a setting. Eggs $2.00 and $3.00 per 15 setting. WILLIAM J. CUDMORE, 82 Elm Ave., Charlottetown, P. E. I.

Springbrook Farm Ayrshires !

PRESENT OFFERINGS: Four nice young Ayrshire bulls ranging in age from 12 to 18 months. These animals are exceptionally fine and in fact the best we have had to offer for some time.

McINTYRE BROS.
SUSSEX CORNER, - - N. B.

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BREEDERS' DIRECTORY

Our charge for insertion names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up. Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T. D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B.

Ayrshire Cattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.
C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE PIGS

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C. A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

HE IS LESS DANGEROUS

Eliminate the danger and increase the value of the young bull by dehorning him. The most successful dairymen, drovers and shippers use and recommend the KEYSTONE DEHORNER. Write for booklet. R. H. McKenna, 219 Robert Street, Toronto.

QUALITY BRAND
Rabbitry and Poultry Yards
Amherst, Nova Scotia
E. I. PEEL & SON, Proprietors

Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

Black Siberian Hares, the most profitable fur bearing animal living, price per pair..$25.00
Silver Siberians, price per pair..... 5.00
Belgians, price per pair 3 00
The above prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each
D. W. Young's stock, as good as money can buy.
White Leghorn 260 egg strain for hatching.....$2.00 per 15
White Leghorn, No. 1 exhibition stock for hatching.....$4.00 per 15
We Guarantee Safe Delivery. Terms Cash with Order

FOR SALE !

Ayrshire bull calves, nine to twelve months. R. O. P. ancestors and best of breeding.

A. A. H. MARGISON
EAST CENTREVILLE - - N. B.

S. C. BROWN LEGHORNS

At the recent N. B. Provincial Poultry Show, every first prize was won by my Browns, exhibited by myself and my customers. They also won the American Brown Leghorn Club gold medals and the Reilly Silver Cup for the second time. I have two beautiful cockerels for sale at one half their value. Both were in my exhibit at Fredericton. Prices and particulars upon application to
H. M. McMONAGLE,
Box 652, - - FREDERICTON, N. B.

FOR SALE !

Four pure bred Aberdeen Angus bulls, ages one 15 mos., two one year, one 4 mos.

F. T. PUGSLEY
Tregothie Farm - - Windsor, N. S.

Cockerels and Eggs

Barred Rock White Leghorn and Rhode I. Red cockerels for sale. Also eggs for hatching from these varieties. Also White Wyandotts.

S. JONES
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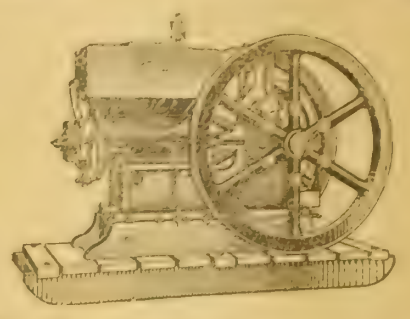
Stationary or Mounted

An Engine for Every Need

Kerosene Traction Engines



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Wind Mills, Grain Grinders, Wood Sawing Outfits, Pumps, Tanks, Water Boxes, Concrete Mixers, Power Spraying Outfits, etc.

Agents Wanted in Unrepresented Territory

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A. McCAUSLAND, Victoria Hotel, St. John, N. B., Maritime Representative

AYRSHIRES!---FOR SALE---AYRSHIRES!

Bulls—two eighteen months old. Just the right kind for Agricultural Society, from good record stock back two generations.
One calf two months old. Same breeding. Price easy for quick sale.
Females—any age. Write your wants.

THOMAS J. HAWKINS
LONE PINE FARM STEWIACKE, COL. CO., N. B.

FOR SALE !

SHORTHORN CATTLE AND BERKSHIRE SWINE—Males and females, different ages. Several young cows freshening in early spring, also for sale. In Berkshires a litter just farrowed. Remember our Berkshires have length, size and quality. Intending purchasers please get in touch with us.

L. M. ANDERSON, Sackville, N. B.

Milking Shorthorns for Sale

We are offering some choice young Shorthorn bulls of the milking strain, ages 3 months to 15 months.
Also a limited supply of heifers, one and two years of age.
For particulars apply to

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett
Upper Sackville, - - - N. B.

SHORTHORNS

BULLS and HEIFERS FROM the CHAMPION HERD of QUE.

I have a choice lot of young bulls and aged bulls for sale. All show animals. Bred from Oak Buff Monarch No. 102905. The Champion of this province. This bull is for sale at $1600. I can spare a few heifers. Come or write your wants.

GEO. REG. MOONEY, Inverness, Que.

FOR SALE !

French Coach Stallion Jadis Imp. (34' foaled 1909, color, dark brown. Champion Carriage Stallion at Charlottetown Exhibition the last two years. For particulars apply to

DAVID REID
Montague, R. R. No. 3, P. E. Island.

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,
AMHERST, - - - N. S.

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

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THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 24. SUSSEX, NEW BRUNSWICK, APRIL 1, 1919. Number 13.

APPLE SPRAYING IN 1919

An Address by G. E. Sanders at the N. S. Fruit Growers' Association, Dominion Entomological Laboratory, Annapolis, N. S.

Mr. President and Gentlemen:

It is a pleasure to again be called upon to address your annual meeting, and to know that in spite of the greatest handicaps for the past four years, you have so cared for your orchards that they are to-day in practically as good condition as before the Great War broke out in 1914. Every grower, dealer and handler of apples in Nova Scotia to-day realizes the immense opportunity now open to the Nova Scotian apple grower. Even the loud lunged pessimists, who, during the war, have advised you to neglect orchards, and to allow your big permanent asset to deteriorate, perhaps beyond repair, now believe that the Nova Scotian apple grower is on the eve of a great period of prosperity, and they are now preaching care of the orchard as loudly as they preached neglect during the past four years.

I have to deal to-day with the most profitable, as well as the most important, of all orchard practices in Nova Scotia, viz., spraying. We have for the past five years had much uncertainty and unrest in Nova Scotia in regard to the proper material to use in spraying apples, and even yet some are not quite decided as to where lime and sulphur fits as a spraying material. As far as I can see, we will not know all about spraying for some time to come. There are many changes and improvements to be made in the spraying program. Some changes we are sure will come, others will come if we can find new materials that do not possess the defects of those now in use. For instance, we have in prospect a safe insecticide for use in Bordeaux that will cost just half as much as arsenate of lime, and arsenate of lime costs only one half as much as arsenate of lead. We are not sure of it yet, but if it proves up in large tests as we hope, that will be another change that we will recommend you to make. You, as growers, have us at the Dominion Entomological Laboratory at Annapolis, employed to work at sprays and spraying material for you. You want us to help you in cutting costs, increasing efficiency, increasing safety or saving labour in handling spraying material. So long as you have me empolyed, and our tests show us where you can save in cost, time or material or can in any way change your present practices, so as to get greater net returns, I am going to recommend those changes to you. Every change that we have recommended in the past has proved profitable to you, and we do not propose to recommend any new methods or materials to you in the future, until we have satisfied ourselves that the change is to your advantage. Many have criticized us in the past for advising you to change your program of spraying, and have been horrified when the next season we recommended more drastic changes, and the next year even more drastic changes still.

The use of arsenic, in the killing of nsects, began about fifty years ago. The use Bordeaux dates back only thirty five years; while lime sulphur, as we know it as a summer spray, was first used only ten years ago. Knowing this and also knowing that the horticulturists who have experimented with spraying material have known very little chemistry, entomology, plant pathology, and that chemists, entomologists, and plant pathologists who have attacked the problem have for the most part been similarly handicapped. We can account for the survival even to-day of such formulae as equal part lime and copper sulphate Bordeaux with Paris green, lime sulphur and lead arsenate for a summer spray for the apple, and the addition of lime to Paris green to make the latter more safe on foliage, etc.

For the reason given and also for the reason that the science of combining and applying spraying material is more recent than the applying of electricity, and almost as recent as the discovery of the automobile, we do not think that the limit has been reached in the combining and applying of material for the control of insects and plant diseases any more than it has been reached in the applying of electricity or the building of automobiles.

In 1913 when we started the study of spraying material, lime sulphur and lead arsenate were almost universally used for apple spraying in Nova Scotia. The years 1910-11-12-13 when lime sulphur was being introduced, were on the whole bright, warm and sunny and in only a few cases did the combination give the least injury. Nova Scotia is, on account of its maritime location, somewhat deficient in sunlight. On account of temporary climatic changes which we best realize by the cold winters, that we have experienced since 1913, the summers of 1914-15-16-17 were colder and more deficient in sunlight than normal. Last year we showed you that injury from lime and sulphur was greatest in seasons that were deficient in sunlight. This explains the small amount of trouble from lime and sulphur for the first few years after its introduction as a summer spray and the great amount of damage that it inflicted in Nova Scotia during the four years of 1914-15-16-17.

In 1915 when we first became convinced as to the damage caused by lime-sulphur, we knew of no other widely used spray for the apple than 4-4-40 formula lime and copper sulphate Bordeaux. During the past four years we have done a great deal of experimenting and as the matter was urgent in that some men were removing the major portion of their crops by the use of the old formula of lime sulphur and paste lead arsenate, we have recommended changes with a view to safety. First we recommended the weakening of lime sulphur, then the changing from arsenate of lead to arsenate of lime, then the substituting of 7-7-100 Bordeaux for the lime sulphur formula on the fourth spray and finally—for the season of 1918 we recommended that you test a new program in a small way. This program as recommended was as follows, 1st spray, 3-10-40 Bordeaux, 2nd spray, 2-10-40 Bordeaux, 3rd spray, either soluble sulphur or sulfocide, 4th spray, 3-10-40 Bordeaux. We have yet to hear of any damage, other than occasional traces of slight russetting, following the application of this formula. Personally I was convinced as to its value last winter, but did not want to recommend it above all others without at least one seasons trial in a very large way. My own orchard was sprayed according to this formula, as were those of my assistants who have orchards. We also persuaded many of our friends to use it. As a result Prof. Brittain and I are recommending as our 1919 calendar.

1st spray 3-10-40 Bordeaux, Arsenate of Lime 1 lb. to 40 gals.

2nd spray 2-10-40 Bordeaux, Arsenate of Lime, 1 lb. to 40 gals.

3rd spray, Soluble Sulphur, 1 lb. or Sulfocide, 1 quart to 40 gals. Lime, 5 lbs. to 40 gals.; Arsenate Lime, ½ lb. to 40 gals.

4th spray, 2-10-40 Bordeaux, Arsenate of Lime, 1 lb. to 40 gals.

For the-after blossom spray we have reduced the quantity of lime with Soluble Sulphur from 10 lbs. to 5 lbs. to every 40 gallons. The 5 lbs. we find sufficient and more desirable. For the 4th spray, we have reduced the amount of blue stone down to 2 lbs. to 40 gals., as that is sufficient in most seasons for the last spray. There is, however, no objection to making the lats spray 3-10-40 Bordeaux should one have an exceptionally bad orchard in which to control fungous diseases. We have found that at least 3 parts of lime must be used to one part copper sulfate in a Bordeaux intended for apple foliage. If less than 3 parts of lime is used to 1 part of copper sulfate, leaf yellowing and leaf dropping is likely to follow. We do no find any advantage in using more than 5 parts of lime to one of copper sulfate. The use of the Thomson Bordeaux, the eliminating of Bordeaux for the after blossom spray and the making of the pre-blossom spray 2-10-40 Bordeaux practically eliminates rusting in most varieties. After numerous tests we have found arsenate of lime more desirable than arsenate of lead for use in Bordeaux; the most important consideration is cost, Arsenic in Nova Scotia now costing just twice as much in the form of arsenate of lead as in the form of arsenate of lime.

We believe that the spray calendar for 1919 that we are now recommending will remain unchanged for some time, so far as its essential points are concerned. Our previous spray calendars have been put out as emergencies to cut down loss which was following the use of the old formulas; but we did not regard them as final in liquid spraying by any means. There may be some improvements possible in our present system of liquid spraying both in material and cost in the arsenicals for use in Bordeaux. It may be more desirable to have the 4th spray a 3-10-40 instead of a 2-10-40 Bordeaux; it may be also that we can find a third spray that is better than soluble sulphur; but we are satisfied that this calendar will stand in its essential points as a liquid spray calendar in Nova Scotia for several years at least.

We must give to Mr. G. L. Thomson of Berwick, N. S., the credit of first having used in Nova Scotia the excess lime-Bordeaux which is now generally known as Thomson Bordeaux. To Mr. John Buchanan we are all indebted for having demonstrated the value of the formula in a large orchard way. For the past three years the men who have used Thomson Bordeaux have with few exceptions had large crops of apples, while those who used lime-sulphur have generally suffered. With the substituting soluble sulphur for the after blossom spray, the russeting of the fruit is practically eliminated, and where our 1919 spray calendar was used in 1918 the foliage to all appearances was perfect.

I am not gonig to weary you with an exhortation to spray your trees; that to this audience, in fact to any representative Annapolis Valley audience would be superfluous. You have had it demonstrated to you in every section that sprayed orchards give larger and more even crops, and cleaner crops; that spraying even in the old way, would on an average about double the value of the crop of apples. What has been troubling you is the thin and in some cases very light crops that you get on some varieties when you spray with lime-sulphur and the inefficient control of fungous that you get in some seasons and on some varieties. You do not need nor want to be told to spray; you even found spraying with lime-uslphur a profitable opeartion on most varieties and in most seasons. You were all satisfied that you could not afford to drop spraying even if nothing better ever developed than lime-sulphur, but knowing from experience and observation that lime-sulphur would often appreciably reduce your crops of Wagner, Blenheim, King, Ben Davis, Bald-

(Continued on page 714)

N. B. Potato Growers Convention

The New Brunswick Potato Growers Association held its fourth annual convention in the Fisher Memorial School, Woodstock, on March 19th and 20th. Despite the fact that the cost of production in all its phases was abnormally high during the past year so that many of the growers who have already sold their crops will have only a very small margin of profit and while it is doubtful if present holders will barely realize the amount of their fertlizer bills, there was no whining but a seeming determination to go forward, building solidly on the sure and safe foundation of producing quality products.

A. A. H. Margeson, one of Carleton County's progressive potato growers, was president of the Association during the past year. His re-election to office by acclamation, for the ensuing years met with hearty approbation.

James Bremner, one of the live wires in the agricultural life of the Province, is secretary, having been appointed to office on the resignation of Mr. A. C. Taylor last fall. Mr. Bremner, as agricultural representative for the counties of Northumberland, Gloucester and Restigouche, has been doing good work in encouraging the production of a better class of seed potatoes by the organization of seed centres in the district.

The convention opened with a few appropriate remarks by the President followed by a resume of the year's work and the Treasurer's report, submitted by the Secretary.

The Treasurer's Report

Balance from last year and receipts	$891.71
Expenditures	707.20
Balance on hand	$184.51

Committees

Resolution.—W. W. Hubbard, J. C. Cook and Alex Brewen.

Nominating.—T. H. Manzer, T. J. Hart and Murray Hajerman.

Membership. — Jas. Bremner, E. Palmer and John Inch.

Fungicides and Insecticides

The last word on fungicides and insecticides was given to the convention by Geo. E. Sanders, officer in charge Dominion Entomological Laboratory, Annapolis Royal, N. S., in a carefully prepared paper. Mr. Sanders is considered by all who know the good work he is doing and the results he is accomplishing in research work on insecticides and fungicides, to be one of th ebest authorities on the subject in America. He is a born investigator of the type that is always looking for something better. He has saved the fruit growers of the Maritime Provinces thousands of dollars by some of his discoveries. The potato growers of New Brunswick will be well advised to make the utmost use of Mr. Sanders and his fund of practical experience. He purposes carrying on a number of investigations and demonstrations in New Brunswick this year. The potato grower, like the fruit grower ,must spray in order to produce quality products. There must be a constant warfare against fungus and insect pests. To successfully combat these pests with maximum efficiency and minimum cost is Mr. Sanders' life work. The success he has already attained and the reputation he established by dint of thorough, practical work, evokes the hearty congratulations of myriads of his friends in the Martime Provinces and every other part of the North American continent. Extracts from Mr. Sanders' address will appear in a future issue.

Potato Diseases

"Potato Diseases and the Policy of the Pathological Laboratory in Regard to Better Seed Potatoes," was the subject of an interesting talk, illustrated by lantern slides, by P. A. Murphy, officer in charge of Dominion Field Laboratory, Charlottetown.

Condition vary in different sections of Canada in the degree of success in potato growing that necessitated the importation of clean, vigorous seed potatoes into districts where the potato does not grow so vigorously. To locate, certify and tag for shipment the best grades of disease free, vigorous tubers, is one of the aims of his department. Many of the troubles evidenced in the growing crops in the fields cannot be recognized by the average farmer in the stored tubers. In order to be sure of getting only the best it is necessary to have a system of field inspection. The vigorous quality of Nw Brunswick grown tubers is repsonsible for the comparatively larger yield procured from their use in other parts of Canada than that procured when these sections use home grown seed.

Mr. Murphy's department also aims to put grower in touch with grower. Northern Ontario is destined to be a strong competitor in the production of good seed and it behooves New Brunswick to look well to their laurels. A carload of potatoes does not bring a price in advance of the current price for the poorer quality of its contens. Mr. Murphy and his assistants are striving to have the tubers in each car uniform so that the producer or shipper who grows quality products may not have to take lower prices because some careless grower may have shipped in a quantity of inferior potatoes. During the coming season the progressive grower of potatoes who may wish to get inspection for his crop, is advised to ask for inspection, particularly if one or more carloads of good seed stock is procurable in his district.

Mr. Murphy advised the growers to always keep the purchaser in view. Quality goods bring repeat orders. New Brunswick growers must strive to maintain the very best reputation possible for seed stock if they are to compete successfully in the Ontario and Southern markets. The various illustrations thrown upon the screen forcibly emphasized many of Mr. Murphy's suggestions.

Mr. Margeson outlined several observations re some of the spraying experiments which he had conducted on his own farm, all of which went to show that the increased production and the subsequent keeping quality of tubers from sprayed plots paid the farmer handsomely for any trouble and expense incurred through spraying.

J. C. Cook, of River Charlo, Restigouche County, also paid a tribute to the results he had procured by spraying, by selection and the elimination of diseased plants. Mr. Cook is a firm believer in hill selection as a means of propagating a high producing strain. He looks forward with considerable optimism to the seed centres organized in his county by Mr. Bremner, their Agricultural Representative. Although they have only started in a small way he believes several car loads of quality stock will be procurable in his vicinity next fal.

Community Potato Work

Dan Dean of Nichols, New York, one of the Empire States most prominent potato growers, gave a very practical address on "Community Potao work and its Results." His remarks were direct and to the point. He said the man who is a planter of potatoes should look well to every link in the chain of production. This chain is no stronger than its weakest link. It makes no matter how much care a man gives to the majority of the links, if he neglects to put forth his best efforts to make the other links effective, his margin of profit will be lowered. Every link should be attended to in its own season no matter what other lines of work had to be delayed. Mr. Dean is a strong advocate of the hill selection system and rigidly pracitices it in his own potato growing plan. This is one of the links in the chain that will materially help to reduce the production of seconds and culls to a minimum. The true test of the potato growers' chain is the difference between the price received and the cost of production and marketing. The extra potatoes that strict attention to every detail will produce in many cases the margin of profit. It is a waste of energy to strengthen some of the links and neglect the others. The producer must cater to the consumer's needs. The consuming public know their own requirements and will pay a premium for the clas of goods that satisfy their needs, but the quality must be delivered in order to get the price.

The grower must also realize that every load of potatoes shipped from the farm means just a slice off the farm and unless its equivalent in soil fertility is returned to the fields on which the crop was produced the stock of plant food will soon become depleted, to the detriment of both city and country.

He outlined how he had been able to build up the fertility of a badly run down farm to a yield of upwards of three hundred bushels of potatoes per acre by a systematic system of crop rotation consisting of potatoes, oats and clover hay. On the lighter soils in order to get a sod and subsequent catch of clover he seeded down with red top, then with timothy and finally with clover.

The successful grower must pay strict attention to the varieties grown. Some strains of the same variety are more productive than others, consequently it is a good plan to test seed procured from various sources and grow only the most productive strain. The seed should be disinfected prior to planting as a safeguard against several diseases. Misses in a field are expensive. Plant the kind of seed that will give the least percentage of misss. Spray the tops early and continue spraying thoroughly throughout the season so that each plant may be armored against infection by late blight which so often causes dry rot. Use a hfgh pressure spray outfit.

Mr. Dean also showed several slides depicting various types of spray rigs. One feature of his spray machine is an attachment consisting of raking machine teeth set on both sides of the wheels in such a way that they may be raised when not in action and lowered when in action to lift up the potato vines out of the wheels. The speaker said he could never see any

Exclusive Seed-Dropping Device

Times have changed. It is the farmers with up-to-date machines that are catching the big prices of the early markets. The O-K Canadian Potato Planter gets your seeding finished earlier and better, with saving of seed and valuable time in busy season.

This is the only machine that can give you the endless cup system, the most accurate seed dropping device ever invented. It demonstrates close to 100 per cent. efficiency, and leaves absolutely but one seed per hill. That means seed economy, worth any man's while to have on large acreages and it means fewest dead hills:

O-K Canadian Potato Planter

The endless cup system picks up and deposits seed on revolving plate with a compartment for each seed in full sight of operator on rear seat. It does not pick or bruise the seed.

This machine has extra large fertilizer equipment. Two shoes open up the furrow. One makes trench for the fertilizer; the other mixes up the fertilizer with earth so that it cannot touch the seed. Yet the seed gets the full benefit of the necessary plant food. It also makes the trench deeper for reception of the seed. Fourteen-inch discs are easily operated, working the covering earth into any desired shape.

A Sandford, Fla., user writes: "There is no question in my mind that from the standpoint of light draft, durability, accuracy in planting, proper distribution of fertilizer and general manipulation, adjustment, etc., it is the best potato planter on the market."

Our free catalogue gives full particulars of Potato Planters and Diggers, also testimonials. Write to-day.

CANADIAN POTATO MACHINERY CO., Limited

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28 STONE ROAD, GALT, ONTARIO

O-K CANADIAN Potato Cutter

Simple, accurate, convenient, strong and durable; cuts 6 to 7 bushels per hour compared to one bushel by hand.

sense in spraying to protect the tops from injury if the farmer while spraying cut off a lot of branches with the wheels of his spray rig. In reply to a question as to the best time to cut potato sets he advised cutting on the day of planting.

Seed Centres

Jas. Bremner outlined the work of the seed centres on the North shore.

Potato Problems

"Potato Problems Solved and Unsolved" were discussed by W.W. Hubbard, Supt. of the Experimental Farm, Fredericton. We will publish Mr. Hubbard's address in a future issue. Several of the points brought out in the address aroused some very intertesing discussions.

E. P. Bradt, Deputy Minister of Agriculture, expressed Hon. J. F. Tweeddale's regrets at being unable to attend the convention, owing to press of partliamentary duties. Mr. Bradt also paid his tribute to the value of good seed and instanced some of the favorable results that had been achieved by the use of New Brunswick grown seed potatoes in his native province. There is a demnaad in Ontario for New Brunswick seed stock because the yields therefrom are satisfactory. Northern Ontario, however, is a keen competitor for the trade and New Brunswick growers will be well advised to produce and sell only quality goods.

Potato Work at Ottawa

W. T. Maconn, Dominion Horticulturist, who has the opportunity of keeping in close touch with potato growing in all part of Canada said in the course of his address on "Potato Cultivation and Work at Ottawa Experimental Farms" said it is interesting to note the variations in yield produced by the same strains in different sections. He said that at the Experimental Farm, Ottawa, New Brunswick grown seed had on many occasions given four times as much yield per acre as Ontario grown seed. He ventured to say that were Ontario farmers to use New Brunswick seed exclusively they could annually double the yield they are procuring from seed of their own growing. To keep in favor, however, New Brunswick must not lag in the work of seed imrpovement. Wonderful results may be achieved by breeding up strains of high producing quality. Aim for the kind that will produce 100 per cent. strong, healthy plants. On one-twentieth of an acre he had succeeded in growing at the rate of 1,024 bushels per acre with a strain of Rural New Yorker. He had found that seed somewhat immature gave better results than over-ripe seed. Immature seeed the result of early harvesting gave better results than seed of a similar nature from late planted stock.

He also gave the results of experiments conducted to ascertain the times when tops and roots and tubers make the most growth. He strongly emphasized the necessity for thorough cultivation as a safeguard against a droughty spell during the growing season.

Potato Grading

Quite in line with the best sugestions as to the strengthening of every link in the potato business, G. G. Porter, one of New Brunswick's most prominent potato shippers, drove home some practical arguments re the necessity for a system of potato grading for market. We will publish Mr. Porter's addres in full.

W. W. Fawcett, of Sackville, expressed his appreciation of Mr. Porter's suggestions.

A resolution endorsing Mr. Porter's suggestions was carried without a dissenting voice.

Soil Fertility

The question fo soil fertility was interestingly dealt with by Mr. E. M. Taylor, of the N. B. Department of Agriculture staff. He outlined his investigations into soil conditions throughout the province to ascertain quantities of lime necessary to correct acidity in the respective counties. He favored a great range of variations and abundant evidence to show the necessity for the sweetning the soil by the use of limestone. The time at his disposal did not permit of a lengthy discussion of the various features which he would like to outline.

Mr. Taylor is a born investigator and one who has without doubt the best grasp of soils and fertilizers in the province. His services are at the disposal of the farmers of the province and it is always a pleasure for him to render assistance in investigating soil problems.

H. B. Durost expressed the view that the Fertilizer Control Law shoufd be made more stringent, particularly in the matter of the declaration by the manufacturers re the availability of the nitrogen, phosphoric acid and potash content, rather than the very broad statements which are now printed on the tags but which are frequently misleading.

Resolutions

The following resolutions were carried unanimously favoring compulsory potato grading and the establishing of the same standards as are now in effect in the United States.

Opposition to the Daylight Saving Scheme.

Endorsation of Thrift Campaiagn as is now conducted by the purchase of War Savings StaSmps.

Concurrence in the idea of stock yards, abbatoir and cold storage plant for the Maritime Provinces.

Officers for Ensuing Year

The election of officers for the ensuing year resulted as follows:

President, A. H. Margeson, Centreville.

Vice-President, John Inch, Burtts Corner.

Secretary, James Bremner, Chatham.

Treasurer, W. H. Moore, Scotch Lake.

Auditor, C. O. McDonald, Woodstock.

Advisory Board

A. C. Taylor, Salisbury; W. W. Fawcett, Sackville; B. J. Hart, Woodstock; J. C. Cook, River Charlo; F. E. Henderson, Andover.

The Potato Show

The potato display although not extensive was bristling with quality. If New Brunswick growers would see to it that they attended properly to every link in the chain of production the ideal set by the exhibits at the show would be attained by the greater percentage of the crop.

S. J. Moore, of the Seed Division, and W. T. Macoon, Dominon Horticulturist, placed the awards.

Prize Winners at the New Brunswick Potato Growers' Show

Green Mountain Group, 15 entries.—1, Ernest Inch, Burtts Corner; 2, W. E. Palmer, Scotch Lake; 3, Clifford Rideout, Hartland; 4, G. M. Hajerman, Jacksonville; 5, A.D. McMillan, Grand Falls; 6, J. Walter Inch, Burtts Corner; 7, Henry Gordon, Chatham; 8, B. J Hartt, Jacksonville.

Irish Cobbler Group, 16 entries.—1, B. L. Shaw, Upper Woodstock; 2, W. E. Palmer; 3, H. B. Parlee, Sussex; 4, Henry Gordon; 5, Chas. Palmer, Woodstock; 6, P. R. Semple, East Florenceville; 7, Richard Barker; 8, Edwin Estey, Woodstock.

Any other White Variety, 4 entries.—1, W. E. Palmer; 2, A. A. Margeson; 3, J. Walter Inch; 4,Ernest Inch.

Any Rose Variety, 3 entries.—1, W. E. Palmer; 2, J. Walter Inch; 3, Ernest Inch.

Any Red Variety, 4 4entries.—1, W. E. Palmer; 2, Ernest Inch; 3, Walter Inch; 4, A. A. H. Margeson.

Potatoes Exhibited for Final Scoring from fields entered in Summer Potato Growing Contests

Seed plot of 500 hills (exhibit of 10 individual hills)—1, A. A. H. Margeson; 2, Clifford Rideout.. 3, Ernest Inch;4, B. J. Hart, Jacksonville; 5, E. L. Hume, Florenceville; 6, W. E. Palmer; 7, P. P. Semple.

Two acres of Irish Cobblers (1 bus.) 14 entries.—1, W. W. Fawcett; 2, E. Lorne Hume; 3, Basil C. Palmer, Woodstock; 4, P. R. Semper; 5, T. M. Hajerman, Florenceville; 6, Ed. A. Estey, Woodstock; 7, R. A. Snowball, Chatham; 8, B. L. Shaw; 9, Spafford Manzer; 10, B. J. Hart.

Five acres of any variety of Green Mountain Group (1 bus.), 4 entries.—1, W. W. Fawcett; 2, Ernest Inch; 3, Spafford Manzer; 4, A. A. H. Margeson.

TWO MILLION DOLLARS FOR N. S. FARMERS

A conservative estimate of the loss to the grain growers of Nova Scotia through smut is 16% of the total crop. The value of this year's crop is placed at $7,000,000, and the loss on this score alone would figure out at over $1,000,000. Smut on grain can be very easily controlled by treating the seed with formalin solution. One pint of formalin is mixed with 30 gallons of water, and the seed then dipped in bags into this mixture. It is then allowed to dry out.

This year's potato crop is estimated at $8,000,000, and the losses through rot at 25%, or $2,000,000. Of this total loss at least one half could be prevented by thorough spraying. Many farmers, of course, are already taking this precaution, but among these there is a good deal of haphazard and slipshod work, while the great bulk do not spray at all. Any potato grower who is not satisfied with the results obtained or with the information at hand would do well to write the Agricultural College, Truro, N. S., or Dominion Experimental Farms. With a greater supply of labour available, every farmer will be anxious to stop these vast leaks.

CHARLOTTE COUNTY EXHIBITION WILL BE OPEN TO THE PROVINCE THIS YEAR

The Charlotte County Exhibition to be held at St. SteSphen, September 9th to 12th inclusive, instead of being the usual County affair, will this year be open to exhibits from all parts of the Province of New Brunswick. In other words, instead of being a County Exhibitiin it will this year be Provincial.

The Charlotte County Exhibition has always been a strong drawing card bnut this year's show will eclispse any yet held.

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15,000 dealers throughout Canada are ready to supply you with these tested seeds.
It's time to think about planting your back-yard garden. Make your selections now.

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RENNIE'S SEEDS

The N. B. Farmer's and Dairymen's Convention

(Contiuned from last issue.)

Mr. A. J. Doucett thought there seemed to be altogether too much fault finding and too much bickering. It is fully time tha an armistice be consumated between the producers and the consumers. He outlined various aspects of the co-operative movement that has come to his attention from time to time that are working to the mutual advantage of the two classes.

Mr. J. E. McAuley, of Kings county, put forth a plea for the re-establishment of many of the grist mills that have gone into disuse in various sections of the province that in the past years were a great convenience to wide sections of the county whose farmers, under present conditions, must go long distances in order to get their grain ground. He produced samples of flour, whole wheat and cream of wheat produced by his French-burr mill that gave evidence of good workmanship. A resolution favoring Mr. McAuley's suggestions was subsequently introduced but was defeated by an overwhelming majority.

The very live subject of co-operation was the theme for the afternoon discussion. Mr. J. D. McKenna, manager of the Maritime Farmer and Secretary of the N. B. Agricultural Societies United, delivered a rousing address dealing with many phases of this great movement. He outlined many of the obstacles that the "interests" that derive their living as middlemen have from time to time placed in the paths of farmers who would co-operate. They try to thwart the movement from many unsuspected angles but their ear marks are soon revealed. Manufacturing concerns and some banks, that would not do business with organized bodies of farmers working co-operatively a few years ago, have changed their tune and now they are anxious for this desirable class of trade. They see the handwriting on the wall and are beginning to govern themselves accordingly. It was a case of get in the swim or lose a lot of good business that was sure to go by their doors unless they got in while the getting was good. The speaker had been confronted with many problems of this kind but he was glad to assure the audience that the future would see the evils referred to receding into the back ground of the dim and distant past.

He outlined the system under which he has been purchasing feeds and distributing them at cost to the farmers of the Maritime provinces who had taken the opoprtunity of the offers he had made from time to time in these columns. Fertilizers were purchased through the agency of the N. B. Agricultural Societies United, the workings of which organization he outlined in detail. He concluded his address with a plea that afrmers might stand together regardless of party affiliation and send to our legislative halls broad minded, practical farmers who are fully cognizant of the needs of their fellow craftsmen.

Mr. A. E. McMahon, manager of the United Fruit Companies, Ltd., of Nova Scotia, delivered an interesting address in the course of which he outlined the co-operative movement, as it applied to the organization, development and subsequent success of his company. Mr. McMahon's address was highly appreciated and will be published in these columns, in a future issue.

The sessions from four to six o'clock of each afternoon was handed over to the French speaking delegates to give them a chance to hear practical talks in the language they best understand. Rev. Fr. Lagasse, Rev. Fr. Sormany, Rev. Fr. Landry, Rev. Fr. Doucett, Rev. Fr. Richard, A. J. Gaudet, J. E. DeGrasse and A. J. Doucett held their audiences in an interesting attitude during the periods at their disposal. We have been promised a synopsis of some of these addresses, which we are told contained many ideas of value to every member of the Association. The final session of the Acadian portion of the Convention was terminated by the singing of the Acadian National Anthem in the Acadian tongue and God Save the King in well rendered English, with a vim that bespoke every evidence of enthusiasm.

The Wednesday morning session was devoted to fifteen minute talks by various members of the staff of the Department of Agriculture.

Mr. Bradt, the Deputy Minister, led the way and in the course of his introductory remarks said that when coming to the province as a stranger, he had been wondering what kind of men he would find at the head of the various divisions of the department. After two months of close observation of the various men and their work, he was satisfied that for devotion to their duties and untiring efforts to make their respective departments be of the utmost service to the farmers of the province, and in capability they need not take off their hats to the officials at the head of similar divisions in any of the provinces of Canada.

Messrs. Bremner, Taylor, Hicks, Sharp, Turney and McCullough and MacLeod outlined the work of their respective departments and urged the delegates to convey to their respective Agricultural Societies on their return home, any expressed ideas that would tend to promote the welfare of the farmers of their home districts.

Mr. Bremner dealt with live stock; Taylor, fertilizers and lime; Hicks, seeds; Sharp, immigration; Turney, horticulture; McCullough, poultry. M. A. MacLeod addressed the audience in regard to Agricultural Society work during the Thursday sessions.

The various committees reported on Thursday morning, and the resolutions found elsewhere in this issue were carried.

The Treasurers' report showed:

Balance from 1917	$124.96
Receipts during 1918	207.00
Expenditures during 1918	256.68
Balance on hand	75.28

Premier Foster, who had found it impossible to be present in his scheduled place on the Wednesday evening programme, was in the hall on Thursday morning by request, and was pleased to address the delegates for a few minutes. He had listened to some of the discussions on several of the resolutions, and he congratulated the farmers for the business like progress of their deliberation. Some thing which he said could not be said at times about the deliberations of the Assembly over which he presided. He liked the idea of promptness in all lines of business. He too advised the farmers to get themselves into line so that their industry might be independently represented on the floors of the legislative halls.

The election of officers resulted as follows:—

President—C. F. Alward, Havelock.

Vice-President—J. E. DeGrace, Shippigan.

Recording Secretary—Kenneth Fiske, Florenceville.

Corresponding Secretary—A. J. Doucett, Notre Dame.

Treasurer—H. H. Smith, Hoyt Station.

County Vice-Presidents:—

Albert Co—T. A. Goggin, Elgin.

Carleton Co.—Scott A. Shaw, Hartland.

Charlotte Co.—Wm. McGibbon, Moores Mills.

Gloucester Co.—R. W. Melanson, Bathurst.

Kent—F. O. Richard, Bretagneville.

Kings—O. W. Wetmore, Clifton.

Madawaska—Denis Z. Daigle, Lake Baker.

Northumberland—A. G. Dickson, Chatham.

Queens—John McNamara, Youngs Cove.

Restigouche—L. R. Somers, Anderson.

Sunbury—H. D. Mersereau, Hoyt.

St. John—A. F. Johnson, Loch Lomond.

Victoria—F. C. M. Peoples, Perth.

Westmorland—Frank C. Fawcett, Sackville.

York—Wm. Illingworth, Kingsclear.

Wm. Kerr of the Soldiers' Settlement Board addressed the convention on the work of the Board, and advised farmers to help them get in touch with vacant and for sale farms in their home districts, and in getting in touch with farmers who desire some extra farm laborers.

Feeding the Dairy Cow

was the subject of an interesting address by Prof. E. S. Archibald, Acting Director of Experimental Farms, Ottawa, and Dominion Animal Husbandman, which will be published in an early issue of the Maritime Farmer. The various points emphasized by Prof. Archibald were such as any farmer may well practice. Every portion of the address bristled with practical ideas of how a maximum milk production may be secured and maintained with a minimum outlay for feed.

Prof. Archibald is one of the Maritime Province young men who has made his mark in his chosen profession, and of which his acquaintances are justly proud

Mr. Hubbard announced the train arrangements for the visit to the Experimental Farm for Friday's programme.

The customary votes of thanks to retiring officers, city fathers and speakers that had helped to make the convention a success were tendered. The French delegates expressed satisfaction at the fair and square deal that had been accorded them, and put themselves on record as being determined to put forth their best efforts to advance the work of the Association during the ensuing year.

The Friday session at the Experimental Farm was enjoyed by all concerned. Over two hundred delegates sat down to the bounteous mid-day repast served under the auspices of the genial Supt., W. W. Hubbard.

After lunch, W. W. Hubbard, Prof. E. S. Archibald, Prof. W. S. Blair, Supt. Wiley Baird of Nappan, Geo. E. Sanders and Mr. Williams delivered interesting talks on various phases of Experimental Farm, Live Stock, Horticulture and other Agricultural work.

At five o'clock the delegates returned to Fredericton, loud in their praises of the treatment accorded them at the farm and of practical ideas that the various speakers had advanced—ideas that will help the farmers over some of the problems that confront them throughout the year.

A. C. Fawcett Address

Now that the war is over, and our soldiers are fast returning to the land of their birth, to again take upon themselves the duties of citizenship, in providing a living for their loved ones. Perhaps there is no other problem so agitating the public mind today, as the continued high cost of living.

The prevailing idea of most all our people, who are not farmers "seems to be" that those who till the soil. will not do their dtuy to other classes. That they do not work as they should; that they are not scientific, and modern in their methods of farming, and consequently do not produce a sufficient supply of food, to lower the prices to those who are not producers. And we find many of the leaders of those classes "who do not produce food," violently proclaiming that all farmers are narrow, and selfish, and that they are organizing for the purpose of raising the price of food unnecessarily.

Various means have been taken by the Governing classes of Canada, to remedy this supposed evil. We have had for years a perfect deluge of writing, and speech-making from those who do not themselves provide food. Some with the hope of changing the moral standard of those supposed stiffnecked, and perverse agriculturists; call them bad names such as Slackers, Grafters and profiteers.

Still Mr. President the problem is not solved. Food grows steadily higher, and the breach between the food producing, and non-producing classes rapidly grows wider; as evidenced by the changed methods of our would be teachers, from an attitude of moral suasion a few years ago, to one now of bitterness, and in many cases vindictiviness.

Ladies and Gentlemen of N. B., if the conditions are as I have stated, "why are they so". Are they the natural outcome of an evolutionary process, or are they the legitimate result of the handling of agricultural affairs, by the governing classes of Canada; who as a rule have had no knowledge whatever of the farmers difficulties, nor of his aspirations.

I feel that much of the trouble of to-day may be directly attributable to that school of thought, of which Dr. Roberson, has been the noted leader. When the Dr. was called upon to prescribe for the enfeebled industry, of agriculture nearly forty years ago; he advised that Canada's greatest need was, more skill mong her farmers, and forth-with proceeded to apply the remedies, which in his opinion were necessary. And we have the whole elaborate system of Experimental Farms, illustration trains, bulletins by the ton, and ever growing legions of District Representatives, Inspectors, Lecturers, and other helpers too numerous to mention.

This system still prevails, and is serving the purpose of a complete camouflage, to deceive the honest consumers, and a few farmers who take their marching orders from politicans, who are interested in forcing down the price of products of the farm, and look complacently on while nearly every article, which the farmer has to buy, goes steadily higher.

In the meantime a few well trained, special-privilege Artists, are manipulating legislation in every part of Canada, and receiving their reward, in excessive profits obtained through the system of bonuses, freight rebates, high protection, and many other similar, get-rich-quick schemes.

I believe that those who originated this system of dealing with agriculture, were not altogether sincere; and that the purpose was not to actually improve the financial position of the farmer, but to persuade him to raise more food, which would naturally drop the price to the consumer.

We do not hear of Canadian farmers being stupid, or slothful, when they leave the farms for more lucrative jobs in the City; or on the railways, neither did we hear of the Boys from Canadian farms failing to do their duty, when they met the armed warriors of a modern Attila, on the fields of France and Flanders.

If Canadian farmers can leave the from, and compete with other classes in any and every department of life's affairs, over all this earth. If they can go among the fighting Nations of the world, and win the reputation of being the most brilliant of them all, and if these same men can not make an ordinary success on the farm, where they were born, and reared. "What do you think is the cause" I say to all

those who are non producers; do you need further proof, that the whole system is wrong, and the fault does not lie with the farmer. If so, the fact of a steady decrease in rural population, in all Eastern Canada, should prove to thinking people that something is radically wrong.

Farmers cannot get sufficient capital to carry on the business of agriculture profitably, though money is available for every other business ni Canada. "Actions speak louder than words." Big financiers talk smoothly of the successes to be obtained at farming, but all their money goes into some business favoured by the Government, and not a dollar for Food production.

Mr. Black, chairman of the land settlement board, tells the soldiers whom he is advising to go back to the land, that the price of farm machinery today, is about on a par with two dollar wheat. He warns these prospective farmers however, that the wheat will fall to one dollar per bushel, and promises that the price of farm machinery will fall in the same proportion.

The Hon. Minister of public works, also fore-casts the lowering of wheat to $1.00 per bushel, but he has been too long in the political game to make any such prophecy regarding the products of our Canadian manufacturers. Mr. Crearer can raise a little breeze, in his Western home about the farmers having the same rights as the manufacturers of the East; but on his arrival at Ottawa, just one look from Hon. Mr. White's well trained eye, knocks all such nonsense out of the brain of the Minister of Agriculture, and he forthwith hastens to take a back seat.

All farmers of Canada, did struggle manfully through the war to produce an abundance of food, that the world might be made safe, for all Nations, and classes of people.

And contrary to the prevailing opinion of practically all City and Town people, this excess supply of food was mostly produced at a loss except in the case of wheat when our Government was forced by the organized farmers of the West, to fix and guarantee a price which would be profitable to them.

Millions of bushels of Potatoes have been grown in Canada in the last two years, at a loss and this after Government officials had promised the farmers that the surplus would be shipped to Europe. This has not been done, and the authorities have neglected another real opportunity to strengthen the position of the farmer.

But instead food control boards were established all over the Dominion to force down the price of the farmers products, while no action was taken to lower the price of Coal Oil, Gasoline, Boots and Shoes, and all other commodities the farmer has to buy.

We do not wish to critize unduly the labor organizations for seeking, and securing much higher pay and shorter hours, but would respectfully suggest that if they are to have a six hour day, and still higher pay; that farm produce will raise in like proportion. If tradesmen should only work six hours each day, the same rule must apply to farmers, and under present conditions the only way open to the farmer is to protect himself financially by curtailing the production, which course alone, will raise the price to a paying basis.

I deny absolutely the charge that the farmers are incompetent or unduly selfish, and assert that if the non-productive classes want more food, and cheaper food, "It is up to them, Being in a majority" to call together a parliament of practical farmers to devise means to restore the equilibrium of trade in Canada.

In the meantime they must get in a state of mind, "Which can only be produced by prayer and fasting;" that will make them willing to give up their protection, bonuses, and all other special methods of getting something for nothing out of the public treasury.

The Convention endorsed the following resolution recently passed by the Maritime Stock Breeders' Association.

WHEREAS, owing to the limited local markets and lack of access to export markets except by shipping livestock long distances with consequent heavy losses an depreciation in value, the prices received by the farmers of the three Maritime Provinces for their live stock are very unstable and at best considerably lower than corresponding prices received at such export markets as Toronto and Montreal.

AND WHEREAS the condition has had a very depressing effect upon the raising of cattle, hogs and sheep which are very essential to sound agricultural practice,

AND WHEREAS it appears that this problem can only be solved by a policy that will give the live stock men of the three Provinces convenient access to a stock yards and abbatoir and cold storage of sufficient capacity to meet the immediate needs and provide for future growth.

AND WHEREAS the working out of such a policy involves inter-provincial and export trade,

THEREFORE resolved that the Maritime Stock Breeders' Association do petition the Honorable, the Minister of Agriculture at Ottawa to secure the services of an expert in live stock marketing immediately to investigate through, and with the assistance of the executive of the Maritime Stock Breeders' Association, the condition in the three Maritime Provinces and to make abbatoirs and stock yards, which when executed will bring about the much needed improvement in market facilities and stimulate breeding of all kinds of live stock in the Maritime Provnces.

Presented by W. W. Hubbard, I. W. Baird.

Resolved that the New Brunswck Farmers' and Dairymen's Association in convention assembled, place itself on record as being opposed to the introduction of the Daylight Saving scheme in the Province of New Brunswick for the season 1919.

Further resolved that our Provincial Legislators be asked to oppose any attempt having for its object the introduction of such a measure.—L. M. Anderson, H. H. Tingley.

Whereas scrub bulls running at large are a menace to public safety and a detriment to farmers who are striving to grade up their herds by the use of pure bred sires, and,

Whereas the present law is not strictly speaking, enforced by the municipalities of the province,

Therefore resolved that the New Brunswick Farmers' and Dairymen's Association in convention assembled, hereby request the Government of the Province to enact a law that will legislate scrub bulls off the public roads and commons of the province.—Maynard Smith, F. W. Buttimer.

Resolved that this Convention heartily endorse the following resolution, recently pased by the New Brunswick Dairymen United:

"Whereas the world war is about to be terminated successfully to the Dominion of Canada and whereas that from now on will come a period of readjustment of the Agircultural industries in Canada and whereas it is generally agreed that large portions of New Brunswick are well adapted to dairying and whereas to bring about the necessary changes to make the citizens of New Brunswick realize the opportunities that lie before them in dairy work a very progressive and effective means of education will have to be effected, and whereas a beginning has been made along this line through the medium of the Maritime Dairy Sihool carried on in connection with the College of Agriculture at Truro, N. S., supported financially and otherwise by the three Maritime Provinces and whereas the present buildings, plant and equipment are not large enough for the development of the school, be it resolved that the New Dairymen United in convention assembled place such appreciation on record for the good work that has been done in the past in getting the dairy interests of the Maritime Provinces centred together in the Maritime Dairy School. That it is convinced that better and more efficient work can be done through the medium of one school of sufficient size and capacity than more. That a school of this class should be purely Maritime, that is, owned and operated co-operatively by the three Maritime Provinces. That just as soon as possible a school of sufficient size and with proper equipment to best accomplish these purposes to bes established. That a committee of three be appointed from the New Brunswick Dairymen United to present the sesolution to other interstd associations and also to the proper Government officials in the different Provinces."—A. J. Gaudet, M A. MacLeod.

Whereas the greatest draw-back to Agriculture in ths Province is the continuous exodus from our farms of our young men and young women, and

Whereas to retain this much needed class of our population on the farm so that they may become intelligent and useful members of the Agricultural fraternity it is necessary to improve the social conditions and whereas thei rimprovement can best be brought about by fostering primary education in our rural scools, and,

Whereas this phase of education can best be brought to a high standard by retaining our already duly qualified teachers, and,

Whereas the teachers are leaving their profession and embracing more remunerative walks of life,

Therefore resolved that this Convention of the Farmers' and Dairymen's Association humbly ask the Board of Education to consider the advisability of increasing the educational grants to teachers.—A. J. Doucett, J. E. DeGrasse.

Whereas the Department of Agriculture of this Province publishes for free distribution various pamphlets and leaflets on the different phases of this Agricultural industry, and

Whereas about one-third of the populaton of this Province are French speaking, practically all belonging to the Agricultural classes, and

Whereas the majority of the people are not sufficiently acquainted with the English language to derive the full benefit of the information contained in these publications,

Therefore be it resolved that this Convention of the Farmers and Dairymen of New Brunswick humbly submit for the serious consideration of the Honorable Minister of Agriculture the advisability of and the practical benefits to be derived by printing the the Annual Report and other publications of this Department in the French Language.

Presented by A J. Doucette and J. E. DeGrasse.

Whereas the greatest need of the dairy industry in Canada at the present time is the economic production of milk, and as the greatest factor in the economic production of milk is the cow that can produce large quantities of milk and fat, it naturally follows that the greatest problem confronting the dairymen of Canada today is how to eliminate the unprofitable or low producing cows from the dairy herds.

It is generally admitted that the sire is the most important factor in building up a dairy herd, and also that better results can be obtained by using a properly bred purebred sire than

(Continued on page 738)

POTATO YIELDS AT FREDERICTON EXPERIMENTAL FARM

Variety	Original Seed Procured from	Years	Aver. Yield Per acre Bus.
Wee McGregor	Charlottetown	6	374.81
Todd's Wonder	Ottawa	6	262.56
Green Standard	Charlottetown	6	413.78
Silver King	Ottawa	6	357.51
Carmen No. 3	Ottawa	6	336.95
Sir Walter Raleigh	Ottawa	6	330.83
Rural New Yorker	Charlottetown	6	301.05
Lowell's Green Mountain		4	409.9
Gold Coin	Charlottetown	6	310.43
Carmen No. 1	Indian Head	6	330.63
Stewart No. 3760		3	345.76
Stewart No. 4227		3	452.46
Stewart No. 5727		3	368.83
Stewart No. 1665		3	330.53
Stewart No. 13660		3	497.43
Stewart No. 22725		3	306.86
Money Maker	Indian Head	6	361.9
American Wonder	Charlottetown	6	304.41
Vicks Extra	Charlottetown	6	396.11
Burbank Seedling	Charlottetown	6	277.36
Brydon's Beauty	Ottawa	6	296.81
Up-to-date	Ottawa	6	275.8
Acquisition	Ottawa	6	327.06
Dalmany Hero	Ottawa	6	298.88
Dalmany Regent	Ottawa	6	292.01
Dalmany Beauty	Indian Head	6	365.01
Table Talk	Charlottetown	6	342.06
Eureka Extra Early	Ottawa	6	385.18
Irish Cobbler		6	377.6
Early Ohio	Ottawa	6	283.66
Rochester Rose	Charlottetown	6	329.63
Early Northern	Indian Head	6	293.98
Early Triumph		5	334.06
Early Rose	Ottawa	6	240.45
Early Six Weeks	Ottawa	6	281.83
Houlton Rose	Ottawa	6	375.2
Maggie Murphy		1	356.4
Morgan Seedling	Charlottetown	6	350.83
Morgan Pint Seedling	Ottawa	6	396.96
New Queen	Ottawa	6	341.0
Manister	Ottawa	6	304.1
New Scotch Rose	Ottawa	6	421.78
McCullough		6	293.3
Whitney Seedling No. 3		3	415.06
Black Kidney	A. R. Gorham	3	106.56
McIntyre	Charlottetown	6	288.73

W. H. HUBBARD, Supt.

Co-Operative Dairying a Success

Editor Farmer:

Co-operative dairying has been the greatest boon to farming in Eastern Canada, particulary in far Eastern Prince Edward Island, and its inception dates back some 25 years. We were started right in one respect at least, in that all cheese and butter factories paid for milk on the fat basis as shown by the Babcock test. And while this test has proven to be accurate beyond question, from the varied nature of the measurments of samples necessary in its operation, it is worse than useless in the hands of a careless or lazy factory manger, and is often the cause of great suspicion and dissatisfaction among the patrons of such an organization. I will not attempt to deny that patrons of cheese factories have not often grave reason to be suspicious that they may not be receiving justice in their "test" but if so the fault is in the careless operation not in the accuracy of the Babcock test, as is often claimed and if you are certain as you should be of the honesty and integrity of your maker and your test goes down when you erpected it would go up, don't think there is no other reason for it, as the variation fat in milk is one of the perplexing problems to many dairymen and not that we are continually learning something new about.

I have kept individual records of my herd for fourteen years and made several R. O. P. records as well and tried to learn what condition caused the variation in the fat from month to month, and while I believe that the percentage of fat produced by any individual cannot long be affected by feed while the cow is in milk, the condition of flesh has a great deal to do with how a cow will test and whether the animal is gaining or losing weight. And we can to a considerable extent control the test of a cow by the amount of bodily fat we put on her when dry, during the first few months of the following lactation period; we all know that a healthy, pregnant cow will fatten most readily during the last six weeks or so of her pregnancy. Nature is storing fat and feed for the coming offspring. Anyone who has seen an old dairy cow dressed for beef will note the excessive amount of kidney and intestine fat to that found in the young steer or heifer and after a fleshy cow freshens she will for the time the surplus flesh is being reduced (or milked out in the bucket) test much higher than at any other period of her lactation, excepting perhaps the last few weeks before again going dry. And it is during the "flush" of her milk that the expert feeder can get in his fine work, and while I do not profess to be one, I have done considerable experimenting to learn how to handle my herd the entire year that they may yield the greatest net profit.

Feeding for the greatest possible production will seldom give us the most economical returns and we must endeavor to reach the happy medium in this respect. I have been often disappointed in the yearly returns from the different members of the herd, particularly in the percentage of fat in their milk from year to year, and I often think a buyer should be careful before either recommending or condemning a cow that is either decidedly fleshy or very thin when she freshens, as either condition will be pretty certain to produce milk of an abnormal percentage in fat.

I purchased a cow once nearly dry, put her in good condiition (quite fat) and her milk tested 4.3 and 4.2 fat for the two first months, gradually falling to 3.0 per cent. fat as she milked off. The next season she was milked up to near calving, had a very large calf, was thin at calving and her first months test was 3.0, then 2.9 fat. Had I not followed her through two years I would have had a poor idea of her real worth as a producer.

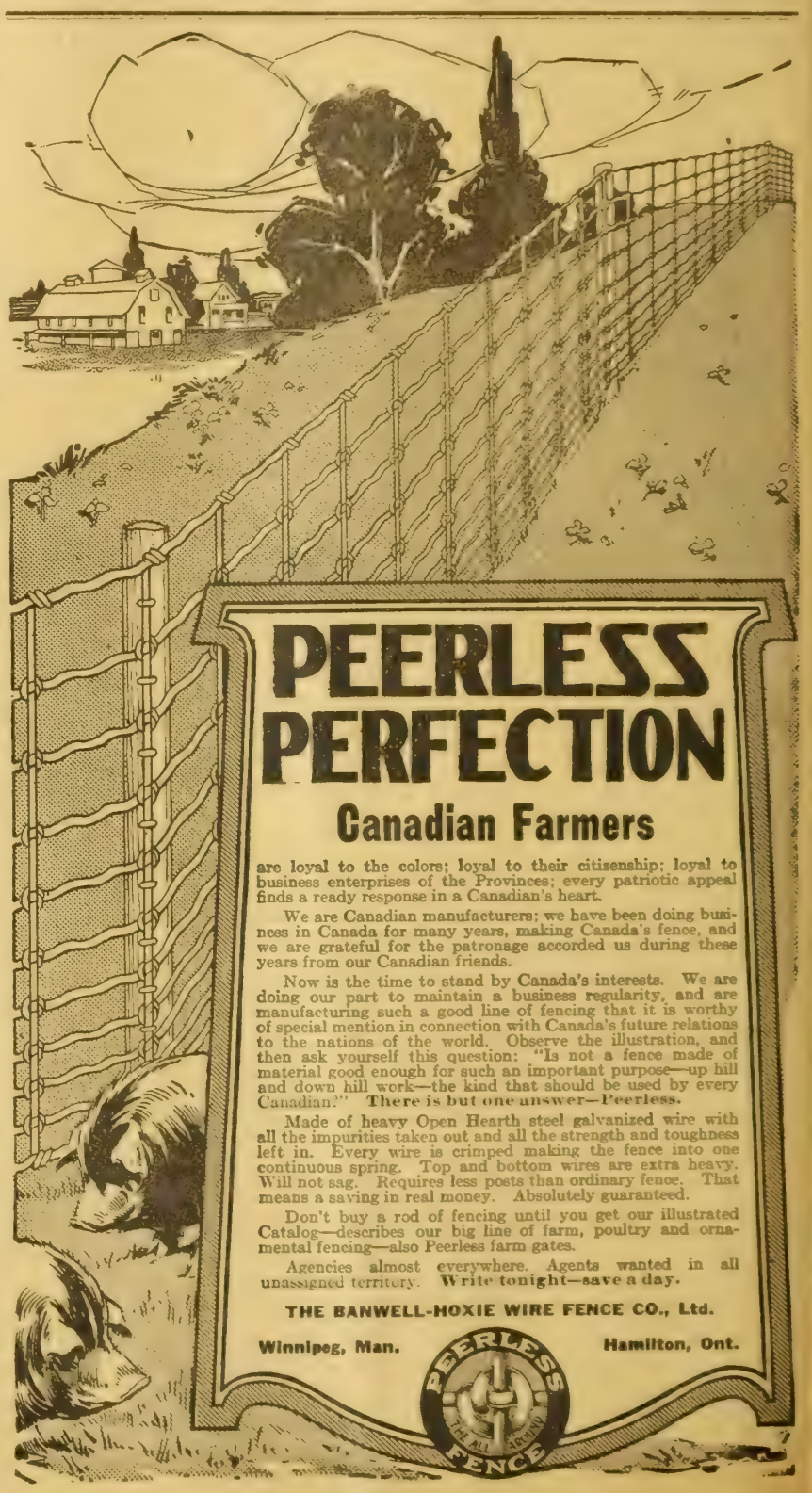
And this has always been my experience—unless we gave the cows two months rest and put them in good fleshy condition, they tested low for that year, or lower than what we might call their normal range, and when they were unusually fleshy their test would average higher for the first three or four months. I am convinced that the only way I at least, could regulate their test was in so far as I could increase or decrease their bodily fat.

I had three heifers running one season in R. O. P. test as ell as the cow testing association, in the latter samples are taken morning and night every ten days and a test made of this sample, the other from the milk of at least two consecutive days every six weeks. Two different men were doing the work and neither had any way of learning the other's results, and I was pleased to dnd that they came very near the same amount in the year, only one pound of fat difference in one heifer and 20 pounds in another. The third was a little more, I cannot recollect the exact amount, but they were close enough to show that the once in ten day average will be sufficinet for a man to know his own herd.

During the year's work of these three heifers I was interested in the way their fat varied from month to month and also how they seemed to always hold together. They were all in good condition starting in in November and during the early winter months tested a little higher than their yearly average. Until the months of June and July the grass was abundant and with the grain ration I kept giving them they started to increase in weight and gave us the lowest test of fat in the year. I was rather surprised to learn this, but during August when the grass was short and they noticably failed some in flesh, their test went up to a considerable extent and later in the year when they again, through better feeding, began to increase in weight, their test fell. Two of these were two years old with first calf and made 413 and 414 lbs. fat, or over 500 lbs. butter each in the year.

I have since that experience noticed tthat whenever a cow was losing hesh she tested high for her particulra range and lower when she was putting it on her back. This is only natural and we can use our best judgment in feeding to counteract as far as possible this characteristic in our dairy cows, and I think explains why some men cannot believe their cows are testing lower late in the season when they are being well fed and gaining in flesh. The trouble is they have been let go off their milk during mid summer and will not respond to better feeding excepting to put it on their backs. And in handling a dairy herd over the entire year to make the most net profit don't start with a greater number than you can feed properly. This is often the first mistake. The cows will not be in the best condition starting their year's work. Then be watchful and observant that no loss or acicdent happens at the time of calving. Our practice is to have the cows dry two months and in a condition of good flesh (fair beef) and feed only roots and bran 10 days before freshening and allow the cow to calve in her stall, as we have no other place as warm as their stable, and we must of all things prevent chills. At this time we endeavor to be with the cow and when the calf is born, remove it as quietly and quickly as possible, blanket the cow immediately (or generally before calving) and let her lie quietly, as I think that excitement as well as cold will cause the retention of afterbirth. Give only warm water to drink and if warm water is before them then cover it, as I take no chances of them getting a chill from any cause. Retention of afterbirth is both dangerous and costly and it is generally through poor management that it is brought about. If for any reason you suspect a cow may not clean, put hot salt on her back imediately and keep her quite warm. After it comes away feed lightly for the first few days, but if she comes to her appetite and her milk quickly don't starve her and lose too much flesh, as a good cow will draw on herself rather heavily at this time; and increase her feed slowly and gradually from day to day. A cow will consume more meal at six than three weeks after calving if handled right and don't be anxious if she is doing good work and increase too fast. Try to learn just how much meal she can handle to give you the most profit. It does not take long to weigh and it pays well. If she is fat at calving you can produce some cheap milk for the first two months after calving, as she will not require as much meal to do her best as a thin cow, and no two cows can just be handled like to get the most profit from feed consumed. Generally speaking farm feeds are light in protein and for this reason oil meal is almost the only feed I buy in any quantity and from my experience with the best milk feeds we can produce it is by far the cheapest milk food to buy. We aim to grow the crops that will give us the most milk per acre, and all of them that I have ever yet been able to produce can be more profitably fed with an addition of oil meal, but "milk" crops is another end of the work and cannot be treated in an article such as this. However, in summing up, I have found to my own satisfaction at least, that it always pays to keep cows pretty nearly up to their limit, milking ten months of the year. If we had the help and time to milk three times a day it would pay to do so with large producers, as I have always found that any cow giving up to 55 or 60 lbs. of milk at two milkings a day will increase about ten lbs. if milked three times without increasing their feed and

(Continued on page 732)


PEERLESS
PERFECTION
Canadian Farmers
are loyal to the colors; loyal to their citizenship; loyal to business enterprises of the Provinces; every patriotic appeal finds a ready response in a Canadian's heart.
We are Canadian manufacturers; we have been doing business in Canada for many years, making Canada's fence, and we are grateful for the patronage accorded us during these years from our Canadian friends.
Now is the time to stand by Canada's interests. We are doing our part to maintain a business regularity, and are manufacturing such a good line of fencing that it is worthy of special mention in connection with Canada's future relations to the nations of the world. Observe the illustration, and then ask yourself this question: "Is not a fence made of material good enough for such an important purpose—up hill and down hill work—the kind that should be used by every Canadian?" There is but one answer—Peerless.
Made of heavy Open Hearth steel galvanized wire with all the impurities taken out and all the strength and toughness left in. Every wire is crimped making the fence into one continuous spring. Top and bottom wires are extra heavy. Will not sag. Requires less posts than ordinary fence. That means a saving in real money. Absolutely guaranteed.
Don't buy a rod of fencing until you get our illustrated Catalog—describes our big line of farm, poultry and ornamental fencing—also Peerless farm gates.
Agencies almost everywhere. Agents wanted in all unassigned territory. Write tonight—save a day.
THE BANWELL-HOXIE WIRE FENCE CO., Ltd.
Winnipeg, Man.
Hamilton, Ont.
PEERLESS
THE ALL ACROSS
FENCE

Against Express Rate Increases

Mr. W. A. McKay on Behalf of Nova Scotia Farmers Association Presents Cogent Reasons For Refusing Advance in Rates

Gentlemen:—

I was appointed at the Annual Convention of the Nova Scotia Farmers Association, held in Truro, March 12-14 and by the Dairymen's Association of Nova Scotia, to present their claims to you relative to the Proposed Increased Express Rates.

Relative to Farmers Association

1. No definite data can be prepared without extensive investigation as to what effect the proposed increased rates will have on the farming community.

The Consensus of Opinion Seems to be

2. That if the Express Companies cannot do a reasonabel profitable business on the present basis, then they are entitled to an increase to make it reasonably profitable.

The Objections are

3. That the reports that are submitted by the Express Companies are apparently not giving a correct statement of their business and the opinion is that some items are withheld that if given would show the Companies to be on a paying basis.

4. That if an increase was required that it should have been done while prices of farm commodities were on the increase and not now when there is an apparent lowering of market.

5. That a greatly increased rate will be detrimental to the production of Pork, Veal, Lamb, Eggs, Poultry, Small fruits and Vegetables and other perishable farm products that have a limited market value and in Nova Scotia have to be shipped a long way to market.

6. That the Express service is overtaxed and if the rates are raised that the Companies be compelled to give a quicker and more efficient service.

The Dairymen's Association of Nova Scotia submit:

1. A sanction of paragraphs 2 to 6 above submitted.

2. The Creameries of Nova Scotia paid to the Express Companies as per statement attached $12,262.24 (Illus-No. 1).

3. The present rates in existence are detrimental to the development of Dairy work and no effort was made to use the Express Companies on that account.

4. The proposed increased rates will completely bar the shipping of Buttermilk and other By Products. This will practically result in the cutting off of the supply of Buttermilk to Sydney and adjacent towns and cities. (Illus. No. 2)

5. The proposed increased rates on cream shipments is 109%. The cream received in Nova Scotia is mostly received in 2½ and 4 gallon cans. The lowest rating is for 5 gallon cans, 2½ gallon cans would thus be increased another 100%. This is prohibitive, we petition for a rating for 2½ and 4 gallon cans.

6. The present rate has made it prohibitive to ship cream to the Government Creamery at Baddeck by Express and consequently no effort at increased production could be made on the main line of Railway and compete successfully with the more favourably situated creameries. This is also true in many other sections of the Province.

7. The proposed increased rates will put creameries having to receive their cream by Express in a very detrimental position (if not put them out of business) as compared to creameries that can receive their cream by Freight. Illustration No. 3.

8. The average Creamery in Nova Scotia manufactures butter for about 3 cents per pound (Cream delivered at the Creamery). This includes labour, plant, interest and all working expenses. Illustration No. 3 shows that the Express Companies will demand 4.18 cents per pound for carrying the cream between the different railway stations. We believe this to be too wide a division of payment for the respective services performed.

Final—As representing

The Farmers Association and The Dairymen's Association. The above is what I believe to be a clear presentation of the case from their standpoint and on their behalf I trust will receive due consideration.

Respectfully submitted,
W. A. MacKAY.

Illustration No. 2

The Intercolonial Creamery Co., South River Station, operate a store in Sydney for the sale of Buttermilk, Cream, etc. This is a distance between 100 and 150 miles. Buttermilk is shipped in 8 gallon cans at 41 cents returning emptys—46 cents for 32 quarts or 1.43 cents per quart. Proposed rate 85 cents returning empty, 26 lbs. at 42½ cents—11 cents—Total 96 cents or 3 cents per quart.

This will more than offset any profits that the store made and the Manager advises that they will be compelled to close up.

Illustration No. 2 A

Buttermilk has a food value as compared with other foods equal to about 60 cents per cwt.

The farmer usually receives for his buttermilk one cent per quart and is satisfied.

The Exphess Company is asking 3 cents per quart to transport this 100 miles or three times what the farmer received for his efforts.

We maintain this to be unfair.

Illustration No. 3

Comparison between A. Creamery Co. and B. Creamery Co. in 1918. A. receiving cream by Express and B. Creamery Co. receiving cream by Freight.

A. Creamery Co.

Made.....214.012 lbs. butter
75% received by Express..160,509 lbs.
Express paid on cream.....$3602.13
Cost per pound Butter.....2.18 cents

B. Creamery Co.

Made.....388,621 lbs. butter
60% by Freight.....233.167
Freight paid on cream.....$1888.81
Cost per pound butter.....81 cents

Difference 1.31 cents per pound.

Difference under proposed rates:

A.....4.18 cents
B..... .81 cents

Difference.....3.37 cents

The A Creamery Company Ltd

Manufactured in 1918 214,012 lbs butter
Received for mfg. at 4c.....$8560.48
Paid for Express..... 3911.25

Left for other expenses..... 4649.23
Increase of 109% would mean. 4263.26

Left for other expenses..... 385.97

Profits for Company in 1918 were $1200 from all sources and not allowing for interest on Capital Account of $8000. This increase would wipe out all profits and $3063.26 besides, or would represent an increased cost of manufacturing the butter of practically two cents per pound, which would be prohibitive in this case.

Results B.

Farms in the radius covered by the A Creamery have increased in value on an average of over 100% in 6 years. One farm sold in 1909 for $1200, was sold in 1916 for $4000. Improved in meantime $600.

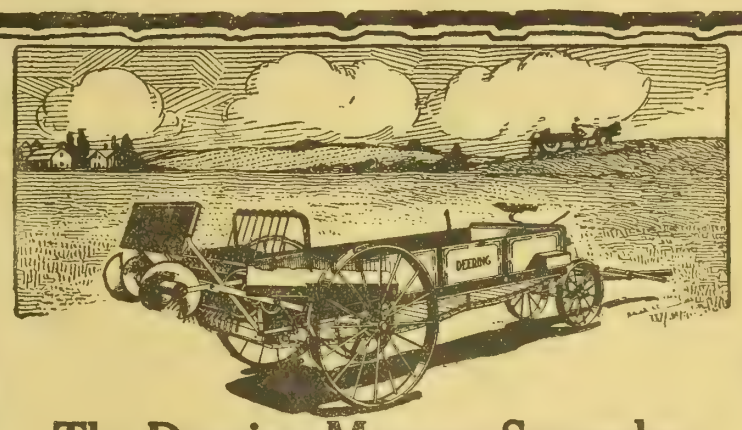
A confidence in farming exists among the people. Contentment on the farm prevails. A greater interest in farm life. A desire to improve the cows and individual herds show increase of over 100% per cow in 8 years.

(Continued on page 733)

ILLUSTRATION NO. 1

EXPRESS BUSINESS DONE IN 1918 BY CREAMERIES IN NOVA SCOTIA.

Name	Incoming Cream	Incoming Supplies	Incoming Total	Outgoing Milk	Outgoing Cream	Outgoing Ice Cream	Outgoing B. Milk	Outgoing Butter	Outgoing Supplies	Outgoing Total	G. Total
Clare Cry.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	$15.00	$15.00
Cumb. Co-Op...	648.08	12.13	660.21	.....	.....	.....	.....	94.52	.....	94.52	754.73
Illsley Bros....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100.00	100.00
Acadia Dairy..	100.00	25.00	125.00	.....	100.00	50.00	20.00	500.00	.....	670.00	795.00
LaHave Cry...	3602.12	309.12	3911.25	.....	.....	625.00	.....	1242.10	.....	1867.10	5778.35
Model Cry.....	.....	25.00	25.00	.....	.....	.....	.....	.....	15.00	15.00	40.00
Scotsburn Cry.	100.00	.....	100.00	.....	.....	.....	.....	1000.00	.....	1000.00	1100.00
Int. Cry. Co....	.....	.....	25.00	.....	.....	.....	.....	.....	.....	700.00	725.00
LaSociete	.....	.....	50.00	.....	.....	.....	.....	50.00	20.00	70.00	120.00
Pictou Co.....	150.00	100.00	250.00	.....	.....	.....	40.00	200.00	45.00	285.00	535.00
Great Village..	.....	.....	.....	25.00	219.65	.....	.....	318.80	.....	563.45	563.45
S. River Cry...	.....	5.00	5.00	.....	.....	.....	.....	2.50	.....	2.50	7.50
Yar. Cry.....	.....	.....	.....	.....	.....	.....	.....	140.50	.....	140.50	140.50
Ant. Dairy....	.....	.....	83.36	.....	.....	.....	.....	.....	.....	834.35	917.71
Brookfield	.....	25.00	25.00	3.00	.....	.....	94.00	48.00	.....	145.00	170.00
	4600.21	501.25	5259.82	28.00	319.65	675.00	154.00	3596.42	80.00	6502.42	11762.24
									6 creameries est.....		500.00
											$12262.24



The Deering Manure Spreader Light Draft — Wide Spread

A LOAD of stable manure is no light weight. Matted with bedding and litter, it is no easy job to tear it into small pieces for the kind of spreading that good farmers demand. Yet two horses can handle easily the 49-bushel load of a **Deering** No. 8 in all ordinary going, and will get the load off in a good even coat in three to four minutes. With its light weight, roller bearings, and beater parts kept in line by a strong steel frame, the **Deering** is a very light draft machine.

The work of tearing up the manure is divided between two beaters, one of which is a spiral that makes this **Deering** spreader a wonderfully efficient fertilizing machine. It spreads beyond the wheel tracks. It covers the ground evenly clear across the width of the spread.

Three sizes of **Deering** spreaders give each farmer a machine suitable for his farm — No. 8, 49 bushels; No. 5, 55 bushels; No. 6, 63 bushels capacity. See the local dealer or write the nearest branch house for illustrated catalogue showing all the good features of this **Deering** light draft, wide-spread manure spreader.

International Harvester Company of Canada, Limited

BRANCH HOUSES

WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

APPLE SPRAYING IN 1919

(Contnued from page 707)

win and many other tsandard varieties, you wanted to know that there was a spray that would not do this and at same time be more efficient as a fungicide than lime sulphur. You did not want a spray with the defects of the old 4-4-40 Bordeaux which would russet your fruit and in most seasons give you serious leaf yellowing and defoliation. You wanted a spraying programme that would enable you to **control insect pests and fungous diseases, that would not reduce the crop, that would not russet the fruit and would not injure the foliage.** I think that our 1919 spray calendar will meet your requirements as a liquid spraying program. There may be some improvements possible in the details, but in the main I think it is about right. I must remind you here that in our work in these important problems we have based our conclusions on repeated experiments and have not allowed preconceived and often erroneous ideas to influence our deductions.

There are two insect pests that are this year epidemic in the Valley and which are worth reminding you of. One of these is the canker worm—where canker worms are present it is advisable to use 6 lbs. paste arsenate lead or 3 lbs. dry arsenate lead to 40 gals. of water immediately before the bolssoms open in place of the regular formula. To this one should add 5 lbs. hydrated lime to 40 gals. in order to eliminate yellowing. During the season of 1918 we again tested the value of 6 lbs. paste arsenate lead to 40 gals. of water as a fungicide and found, as we found the previous year, that it wa ssuperior to both lime sulphur and soluble sulphur in standard strengths, as a fungicide.

Many orchards in the Valley are now seriously infested with Tussock Moth, which did a great deal of damage in 1918 by nobbling the fruit, causing rregular and unsightly scars on the picked apples. Where ttey are present the above formula of 6 lbs. paste lead arsenate and 5 lbs. hydrated lime to 40 gals. water, should be used in place of the regular formula for the third or calyx spray. If the insect has passed unnoticed until after the third spray has been applied, apply this formula as soon as you notice the insect. We have tried various combinations of arsenicals and fungicides for these two insects with varying degrees of success and at last have decided that it is more economical and safest to use the over strength arsenate of lead formula with lime and to use no fungicide.

Last year, through the United Fruit Companies, we were instrumental in having a ton of finely pulverized copper sulphate purchased for your use in trying out the new method of making Bordeaux rapidly. On account of the excessive cost of this material in America, they have been unable to secure a supply for 1919. In normal times we can secure bluestone from England more cheaply than from American points. We have recently succeeded in locating firms in England who make a particularly fine grade of finely pulverized bluestone for Holland and France in thousands of tons annually, and at an average cost of less than one cent per pound over the crystal, so as soon as condtiions become normal we will be able to secure finely pulverized copper sulphate at a price that will make it profitable for all to use it.

A most urgent matter in the Valley at the present time is the scarcity of domestic bees as well as wild flower visiting insects. As some of you realise the past two winters have almost exterminated the domestic bee in many sections of the Annapolis Valley. Wtih an average bloom in ordinary weather, we have in the past not suffered greatly for want of bees, for we have had some domestic bees and some wild insects pollinating our fruit. With the prospect of a large bloom this year and most of our domestic bees killed and wild flower visiting insects apparently less numerous than in former years, the prospect now is that we will have a great deal of imperfect pollination and a consequent poor set of apples in 1919, if the situation is not remedied. It has been observed and demonstrated many times that No. 1 apples contain more seeds than No. 2's, and No. 2's more than No. 3's, etc. The size of the apple depends more on the number of carpels containing seeds or on the number of pistils pollinated than on any other single factor. Further, we know that in order for our fruit to set, it is necessary for an insect to carry pollen from one blossom to another at the right time and for some of the seed cells to be fertilized. If only one cell is fertilized, the apple will remain on the tree for upwards of a month, and will be shed from the tree in what is known as the "June" drop which normally occurs in Nova Scotia in the early part of July. If 2 cells are fertilized or contain seeds, the apple has a small chance of remaining on the the tree, but will seldom grow larger than a No. 3. With 3 or more cells fertilized, the apple has a good chance to remain on the tree; the size or grade it will attain depending largely on the number of cells fertilized.

It has lately been demonstrated by Mr. A. J. Heinicks in Bulletin 393 of the Cornell Experiment Station that the vigour of the fruit spur is the determining factor in the number of fertilized cells necessary to cause an apple to remain on the trees and also on the size of the fruit resulting. This is a most reasonable deduction which is amply demonstrated by Mr. Heinicks.

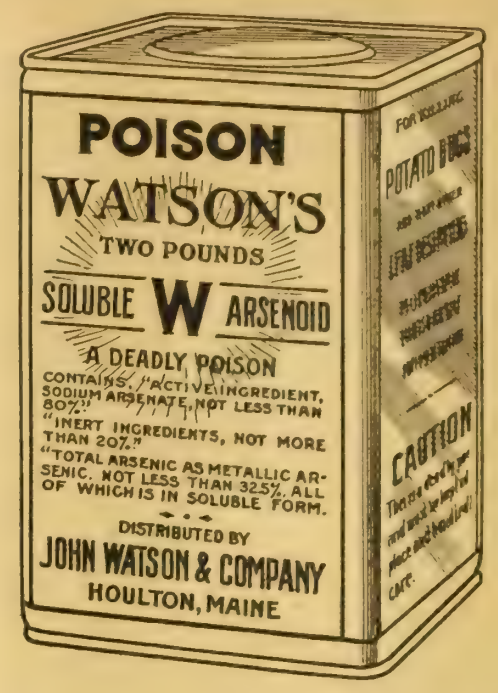
If bees are scarce in the locality therefore, a man has two alternatives if he wishes to insure a set of apples. The first and infinitely the best is to get bees and place them so that they can cover his orchard at blossoming time. The second alternative, a makeshift, if one cannot by any means secure bees, is to make your trees so vigorous at blossoming time that the apples which are imperfectly fertilized, will set better and grow larger than they otherwise would. In other words, by invigorating the tree, make a blossom with only 3 cells fertilized set as surely and grow as large an apple as would otherwise result from a blossom with 4 cells fertilized. How best to stimulate the trees is only partially a question for me to answer. Spraying, as we have recommended before the blossoms will prevent insect and fungous injury and so, in a manner, stimulate the trees. The avoiding of lime sulphur, which as explained in detail to you last year, is apt to cause dropping of the fruit through its action in injuring the chlorophyll and with faulty pollination its action in causing dropping would naturally be more severe, is another means of offsetting our lack of bees.

A second means of avoiding the results of faulty pollination, lies in the avoiding of lime sulphur as a spray, partcularly as a last or fourth spray. As I explained to you last year in detail, the injury from lime sulphur lies in its effect on the chlorophyll and resembles, and may be a starving process caused by the manufacture of food being reduced through the destruction of a portion of the chlorophyll. We can easily see how the dropping, caused by faulty pollination, would be increased by the use of lime sulphur as a spray and vice versa.

Another aid would be a dressing of some quick action fertilizer as nitrate of soda applied about the time the buds are beginning to swell. How much fertilizer to use, or how and when to apply it, I am leaving to your advisers on fertilizers. However, since domestic bees and wild insects are now very scarce in the Valley, and it is improbable that any appreciable number of you can supply yourselves with bees before first of next June, and, further, it is now apparent that we will have a heavy bloom next spring, which, from present indications may result in much imperfect pollination; it would seem best for those of you who are unable to supply yourselves with bees to take steps towards stimulating the vigour of your trees before blossoming season this spring.

Allow me to thank you for the assistance and co-operation that you have extended to us in our work during the past season.

WATSON'S SOLUBLE ARSENOID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SOLUBLE W ARSENOID
A DEADLY POISON
CONTAINS. "ACTIVE INGREDIENT, SODIUM ARSENATE, NOT LESS THAN 80%"
"INERT INGREDIENTS, NOT MORE THAN 20%"
"TOTAL ARSENIC AS METALLIC ARSENIC. NOT LESS THAN 32.5%, ALL OF WHICH IS IN SOLUBLE FORM.
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It must be used with bordeaux mixture, and not otherwise. It is very adhesive and does not wash off easily.

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On July 22, 1918, the Canadian Customs at Ottawa issued an order removing the duty on WATSON'S SOLUBLE ARSENOID except the war tax, and this order applies only to WATSON'S SOLUBLE ARSENOID, manufactured by John Watson and Company, Houlton, Maine. This endorsement speaks for itself.

WATSON'S SOLUBLE ARSENOID has been on the market for a number of years and is used almost exclusively in Aroostook County. If your dealer cannot supply you, write us direct, and give us the name of your dealer.

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"Seeds with a Pedigree"

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	pkt.	oz.	¼lb.	lb.
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21A

THE PROVINCIAL SEED EXHIBITION

The Annual Provincial Seed Exhibition was held in the Drill Hall of the Normal School on Thursday, March 13th. The number of exhibits displayed in the sections for wheat and oats was greater than has been seen for several years. The various kinds of garden seeds were not so well represented as last year.

There were fifty exhibits of wheat and fifty-five of oats. The Sweepstake prize of $10.00 for the best bushel of wheat was won by Mr. E. Lorne Hume, Florenceville. An excellent sample of Marquis wheat was shown by Mr. R. A. Snowball, Chatham. In the classes for oats, Mr. John Stevenson, Gladwyn, carried off two first prizes and one second. He exhibited the best bushel of oats at the Fair. In the special classes open only to members of the Canadian Seed Growers Association, Mr. Hume won first in wheat and oats and third in potatoes. Mr. Donald Innis won a second in wheat. Mr. Wm. Palmer second in oats. Mr. Harvey Parlee, Sussex, second in potatoes.

A sample of the best wheat, oats and barley exhibited at the Fair will be placed on exhibition at the Provincial Immigration offices, St. John.

The York County Seed Grower's held their second Seed Fair in conjunction with the Provincia lFair. For some years the York County growers had felt that the competition of the whole Province discriminated unjustly against them, as the same strong competition was not felt by other counties as each of these conducted a county Seed Fair for the growers within its own boundaries. The exhibits shown by the York County members did credit to their reputation as seed growers. In the class for potatoes of the Green Mountain type, Mr. Wm. Palmer won with a sample hat won first prize in the open competition for the Province in which there were 15 exhibits.

The attractive booth of the Dominion Experimental Farm occupied one side of the Drill Hall. The display consisted of the different varieties of potatoes, and grains most suited to the Province.

The judges were: Messrs. E. P. Bradt, Secretary for Agriculture; E. M. Taylor; Jas. Bremner, Jr. and O. C. Hicks of the Provincial Department of Agriculture. The winners in the various classes are as follows:—

Wheat (White Fife)—1st, E. Lorne Hume, Florenceville; 2nd, W. E. Wallace, Penobsquis; 3rd, Donald Innis, Tobique River; 4th, N. F. Phillips, Pembroke; 5th, Thos. Stewart, Florenceville; 6th, Henry Gordon, Chatham; 7th, Stanley R. Roy, Elm Tree.

Wheat (White Russian)—1st, Henry Gordon, Chatham; 2nd, H. B. Parlee, Sussex; 3rd, T. A. Goggin, Elgin; 4th, J. & W. Brait, Rexton; 5th, Hypolite Daigle, St. Charles; 6th, W. E. B. Tait, Dorchester.

Wheat (Red Fife)—1st, Wm. Sauntry, Millerton; 2nd, Henry Gordon, Chatham; 3rd, W. H. Venning, Sussex; 4th, F. A. Burpee, Oromocto; 5th, C. C. West, Hopewell Hill; 6th, M. J. Hickey, Rexton; 7th, A. T. Reid, Rollingdam.

Wheat (Any other variety)—1st, R. A. Snowball, Chatham; 2nd, W. H. Venning, Sussex; 3rd, H. B. Parlee, Sussex; 4th, W. B. Tamlyn, Sussex; 5th, A. J. Marr, Sussex; Sixth, J. W. Stevenson, Gladwyn; 7th, Henry Nichol, Robertville.

Wheat (Sweepstakes)—1st, E. Lorne Hume, Florenceville; 2nd, H. B. Parlee, Sussex.

Oats (Banner)—1st, J. W. Stevenson, Gladwyn; 2nd, Thos. Stevenson; 3rd, W. H. Venning, Sussex; 4th, Henry Gordon, Chatham; 5th, Robt. J. Shaw, New Maryland; 6th, Wm. Palmer, Keswick; 7th, John Inch, Burtts Corner; 8th, A. T. Reed, Rollingdam; 9th, F. J. Smith, Hopewell Hill.

Oats (A.O.V.)—1st, Thos. Stevenson, Gladwyn; 2nd, J. W. Stevenson, Gladwyn; 3rd, W. H. Venning, Sussex; 4th, Lorne Hume, Florenceville; 5th, N. F. Phillips, Pembroke; 6th, Henry Gordon, Chatham; 7th, Basl Kilpatrick, Florenceville; 8th, R. J. Shaw, New Maryland; 9th, John B. Nichol, Robertville.

Oats (Black)—1st, A. J. Marr, Sussex; 2nd, Frank Thibideau, Rogersville.

Oats (Sweepstakes)—1st, J. W. Stevenson, Gladwyn; 2nd, N. J. Phillips, Pembroke.

See that curve?

THAT curve in the lance of the O-K-Spra takes the place of the *curve in your back* that you have when you are using an ordinary sprayer to get under the leaves. That curve enables you to reach the most out-of-the-way spots.

On the tip of the curve is our "efficiency" non-clog nozzle with strainer shaped like a soldier's steel helmet, so that the particles fly off instead of clogging; needs fewer cleanings than any other nozzle. If you want the most effective, easiest to handle, surest and quickest sprayer of all get an

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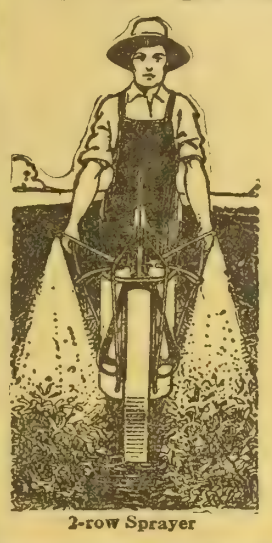

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The O-K Canadian Two-Row Sprayer

is easily pushed by hand like a wheelbarrow and effectively sprays two rows at a time, adjustable for both width and height of rows; solution is kept stirred; the discharge pipe may be detached for white-washing, spraying trees, cleaning buggy or motor car, etc. Sturdily built for long service.

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Write for literature giving full particulars of these, and also 4-row sprayers, with valuable information about mixing spraying materials.

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Strawberry Plants !

Now is the time to book your order for the Strawberry Plants you will want to set this spring. Our plants are well grown and well developed in every respect. We shipped to every Province in the Dominion last season and by selling the best plants at a fair pirce have built up a fine list of well satisfied come-again customers. Be one of them. We can offer Warfield, Senator Dunlap and Beder Wood at four dollars a thousand. Sample, Dr. Burrell and Glen Mary at five dollars a thousand. Special discount on orders of ten thousand and over of one variety. Write for catalogue.

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WORKS: TORRYBURN ON C. N. R.

Barley, (two-rowed)—1st, J. W. Stevenson, Gladwyn.

Barley (six-rowed)—1st, J. W. Stevenson, Gladwyn; 2nd, Thos. Stevenson, Gladwyn; 3rd, H. B. Parlee, Sussex; 4th, T. A. Goggin, Elgin; 5th, W. H. Venning, Sussex; 6th, Stanley R. Roy, Elm Tree.

Buckwheat (Silverhull)—1st, H. B. Parlee, Sussex; 2nd, R. J. Shaw, New Maryland.

Buckwheat (Rough)—1st, W. H. Venning, Sussex; 2nd, H. B. Parlee, Sussex; 3rd, Wm. H. Moore, Mth. Keswick; 4th, D. Z. Daigle, Lac Baker; 5th, Wm. E. Palmer, Keswick; 6th, R. J. Shaw, New Maryland.

Potatoes (Green Mountain)—1st, W. E. Palmer, Mth. Keswick; 2nd, John Inch & Son, Burtts Corner; 3rd, Henry Gordon, Chatham; 4th, Wm. J. Moore, Mth. Keswick; 5th, J. Walter Inch, Burtts Corner; 6th, Leslie Sharp, Mth. Keswick; 7th, Hypolite Daigle, St. Charles; 8h, H. B. Parlee, Sussex.

Potatoes, (Irish Cobbler)—1st, H. B. Parlee, Sussex; 2nd, J. W. Stevenson, Gladwn; 3rd, W. E. Palmer, Mth. Keswick; 4th, Bertram Goodspeed, Penniac; 5th, Henry Gordon, Chatham; 6th, John Inch & Son, Burtts Corner; 7th, Leslie Sharp, Mth. Keswick; 8th, P. R. Semple, Florenceville.

Potatoes, (Any long white variety)—1st, Wm. E. Palmer, Keswick; 2nd, J. W. Inch, Burtts Corner; 3rd, John Inch & Son, Burtts Corner.

Potatoes (Any Rose variety)—1st, Wm. Palmer, Keswick; 2nd, J. W. Inch, Burtts Corner; 3rd, Warren Smith, Durham Bridge; 4th, John Inch & Son, Burtts Corner; 5th, Leslie Sharp, Mth. Keswick; 6th, Henry Gordon, Chatham; 7th, Wm. Illingsworth, Kingsclear; 8th, A. & C. A. Harrison, Maugerville.

Potato Onions—1st, J. Walter Inch, Burtts Corner; 2nd, Henry Gordon, Chatham; 3rd, Donald Innis, Tobique River; 4th, H. B. Parlee, Sussex.

Table Onions—1st, Warren Smith, Durham Bridge.

Garden Peas—1st, W. H. Moore, Scotch Lake.

Beet Seed—1st, W. H. Moore, Scotch Lake; 2nd, Warren Smith, Durham Bridge; 3rd, R. J. Shaw, New

POTATO EXPERIMENT ON NUMBER OF EYES PER SET DURING 1916, 1917 AND 1918.

Dominion Experimental Station, Fredericton, N. B.

Empire State	Marketable per acre	Small per acre	Total per acre.
One eye.....1916	294 bus.	16 bus.	310 bus.
1917	252 "	12 "	264 "
Two eye.....1916	379 "	16 "	395 "
1917	327 "	15 "	342 "
Three eye...1916	414 "	16 "	430 "
1917	365 "	19 "	384 "
Whole Seed.1916	286 "	20 "	306 "
1917	264 "	24 "	288 "
Irish Cobbler.			
One eye.....1916	318 "	19 "	337 "
1917	68 "	8 "	76 "
Two eye.....1916	333 "	23 "	356 "
1917	109 "	9 "	118 "
Three eye...1916	372 "	29 "	401 "
1917	356 "	19 "	375 "
Whole seed..1916	312 "	76 "	388 "
1917	343 "	39 "	382 "
Lowell's Green Mountains.			
One eye.....1918	214 "	28 "	242 "
Two eye.....1918	202 "	42 "	244 "
Three eye...1918	220 "	37 "	257 "
Whole seed..1918	244 "	75 "	319 "

N. B. It has been found, taking the average of three years, that it will take the following quantities of seed to plant an acre of Potatoes.

One eye.....	12 bus.	20 lbs.
Two eye.....	14 "	3 lbs.
Three eye.....	18 "	47 lbs.
Whole seed.....	46 "	27 lbs.

Potatoes (Any red variety)—1st, Wm. E. Palmer, Mth. Keswick; 2nd, Warren Smith, Penniac; 3rd, Leslie Sharp, Mth. Keswick; 4th, J. W. Inch, Burtts Corner; Fifth, J. W. Stevenson, Gladwyn.

Potatoes (Any Black variety)—1st, H. B. Parlee, Sussex; 2nd, W. E. Palmer, Keswick; 3rd, J. W. Inch, Burtts Corner; 4th, John Inch & Son, Burtts Corner; 5th, Leslie Sharp, Mth. Keswick.

Special, open only to members of Canadian Seed Growers Association:

Wheat—1st, E. Lorne Hume, Florenceville; 2nd, Wm. Palmer, Mth. Keswick; 3rd, Donald Innis, Tobique River.

Oats—1st, E. Lorne Hume, Florenceville; 2nd, Wm. Palmer, Mth. Keswick; 3rd, Donald Innis, Tobique River.

Special—Open only to children for sheaf and sample of threshed grain.

Wheat—1st, Venda Tamlyn, Sussex; 2nd, Enid Palmer, Keswick; 3rd, Ruth Stevenson, Gladwyn; 4th, Verna Marr, Sussex.

Oats—1st, Ruth Stevenson, Gladwyn; 2nd, Enid Palmer, Keswick; 3rd, Greta Palmer, Keswick.

Turnip Seed—1st, E. Lorne Hume, Florenceville; 2nd, J. Walter Inch, Burtts Corner; 3rd, Donald Innis, Tobique River; 4th, Henry Gordon, Chatham; 5th, R. J. Shaw, New Maryland; 6th, Hugh Peacock, Bayfield.

Mangel Seed—1st, Donald Innis, Tobique River.

Carrot Seed—1st, J. W. Stevenson, Gladwyn; 2nd, R. J. Shaw, New Maryland; 3rd, Wm. Palmer, Keswick; 4th, Henry Gordon, Chatham.

Turnips for Seed Growing—1st, E. Lorne Hume, Florenceville; 2nd, Henry Gordon, Chatham; 3rd, Wm. E. Palmer, Keswick; 4th, Leslie Sharp, Keswick; 5th, J. Inch & Son, Burtts Corner; 6th, R. J. Shaw, New Maryland.

Mangels for seed growing—1st, Warren Smith, Durham Bridge; 2nd, W. E. Palmer, Keswick; 3rd, Bertrand Goodspeed, Penniac; 4th, Henry

Spraying for Dollars, with a Spramotor

IT'S NOT A SPRAMOTOR unless we made it.

IF YOU protect your orchards and row crops from disease and pests, you will realize a quick reward, for they'll return your big thanks that very season, in greatly increased crops.

You take no chances when buying a Spramotor. This is the machine that met an d beat the world at Government Spraying Contests and Expositions, carrying off over a hundred Gold Medals and First Awards. Why be content with half crops, quarter crops or less, when with a Spramotor you can double and treble the yield? We make outfits of all kinds, sizes and uses. Write for catalogue and free booklet on "Crop Diseases."

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IMPROVED and REGISTERED BANNER,

OLD ISLAND BLACK and BLACK NORWAY SEED OATS,

TWO AND SIX ROWED BARLEY, BUCKWHEAT and ISLAND SEED WHEAT.

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20 packets choicest vegetable and flower seeds assorted, $1.00 value for 50c postpaid. 200 silk remnants assorted for fancy work, $2.00 value for $1.00.

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We Manufacture Strawberry Boxes and Crates for same, 6 qt. Baskets, Apple Boxes, Box Shooks, Apple Graders, Wheelbarrows. Now is the time to lay in a supply of Fruit Packages for the coming season. We have a good stock on hand, order early and ensure prompt shipment. Price on application to

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Maryland; 4th, Henry Gordon, Chatham.

Parsnip Seed—1st, H. B. Parlee, Sussex; 2nd, Henry Gordon, Chatham.

Sweet Corn—1st, Warren Smith, Durham Bridge; 2nd, A. & C. A. Harrison, Maugerville.

Best collection of Garden Seeds—1st, H. B. Parlee, Sussex.

Timothy Seed—1st, J. W. Stevenson, Gladwyn; 2nd, Henry Gordon, Chatham; 3rd, R. J. Shaw, New Maryland; 4th, W. H. Venning, Sussex.

Red Clover—1st, W. H. Venning, Sussex.

Alsike Clover—1st, W. H. Venning, Sussex.

Field Peas—1st, J. W. Stevenson, Gladwyn; 2nd, Thos. Stewart, Florenceville; 3rd, Henry Gordon, Chatham.

White Beans—1st, Thos. Stewart, Florenceville; 2nd, J. W. Stevenson, Gladwyn; 3rd, Thos. Stevenson, Gladwyn; 4th, H. B. Parlee, Sussex; 5th, R. J. Shaw, New Maryland; 6th, John K. Rosborough, Keswick.

Yellow Eye Beans—1st, Henry Gordon, Chatham; 2nd, John Rosborough, Keswick; 3rd, J. W. Stevenson, Gladwyn; 4th, Warren Smith, Durham Bridge; 5th, R. D. W. Hubbard, Burton; 6th, John Inch & Son, Burtts Corner.

Colored Beans—1st, Leslie Sharp, Keswick; 2nd, John Rosborough, Keswick; 3rd, Warren Smith, Durham Bridge; 4th, J. W. Stevenson, Gladstone.

Flint Corn—1st, E. Lorne Hume, Florenceville; 2nd, John Rosborough, Keswick; 3rd, Warren Smith, Durham Bridge; 4th, A. & C. A. Harrison, Maugerville.

WHAT STRAWBERRIES SHALL WE PLANT, AND WHY

(Experimental Farms Note.)

Strawberries are grown either for home consumption or for market. While those grown for market should be as good as those grown for home use, the fact is that in some cases those produced for market are grown more because of their productiveness and shipping qauilty than because of their flavor and general palatibility.

The most popular variety, taking the whole of Canada, is undoubtedly the Senator Dunlap. This is a very hardy variety, and the fruit is handsome in apearance, good in quality, and is an excelent variety for canning. It is desirable both for home use and market. Like all varieties, it has some faults, the chief one being that on acocunt of its making such a large number of plants the fruit begins to get small too early in the season in parts of Canada where dry, hot weather often occurs during the fruiting season; hence, where there are such conditions some other sort is desirable, and in the—Parsons Beauty and Glen Mary there are two commercial varieties which are succeeding very well in many places in Canada, especially in Eastern Canada. These are both large varieties and keep their size well to the end of the season. The Parsons Beauty is better in quality than Glen Mary and the latter is not very desirable for home use, but both should be tried to determine which succeeds best in the particular locality and soil where they are grown. The Williams is a firm berry, which is a very popular commercial sort in Western Ontario but it is not very popular in most other parts of Canada. It has a white tip which increases its shipping qualities but lessens its value when it is to be eaten raw. Splendid is a rather early variety which has made a good record in Eastern Canada, and Beder Wood is also another reliablee sort. The Marshall is one of the best in quality but must be grown under high cultivation in Eastern Canada to get fair crops and it not now much grown on account of its light cropping, but on the lower mainland of British Columbia it does well and is one of the best commercial varieties there. The Magoon is also a commercial variety which is also grown mainly in British Columbia.

The foregoing are the leading commercial varieties in Canada although to these might be added Sample, Pocomoke and Warfield as succeeding very well in some places. For the Prairies, a variety called Dakota, rather small in fruit but very hardy, has proved one of the most reliable, though Senator Dunlap also does well if well cared for.

The best varieties for home use in Eastern Canada are Senator Dunlap, Bubash, Parsons Beauty and Wm. Belt, the latter and the Bubach being large varieties of good quality. In British Columbia the Royal Sovereign Paxton, and Marshall are three of the best for home use. The two former English varieties not satisfactory except in the mildest sections of the Domniion. The Everbearing strawberries are partirularly desirable for home use, and two of the best of these are Progressive and Americus.

Bush fruits of all kinds should be staked, thoroughly worked and then should receive a heavy mulch of coarse barnyard manure, which serves the double purpose of keeping them from drying out and keeping up the necessary fertility. A light dressing of wood ashes before applying the mulch is quite beneficial on most soils. Keep a sharp lookout for mice in the litter.

Note Pump is Outside of Barrel

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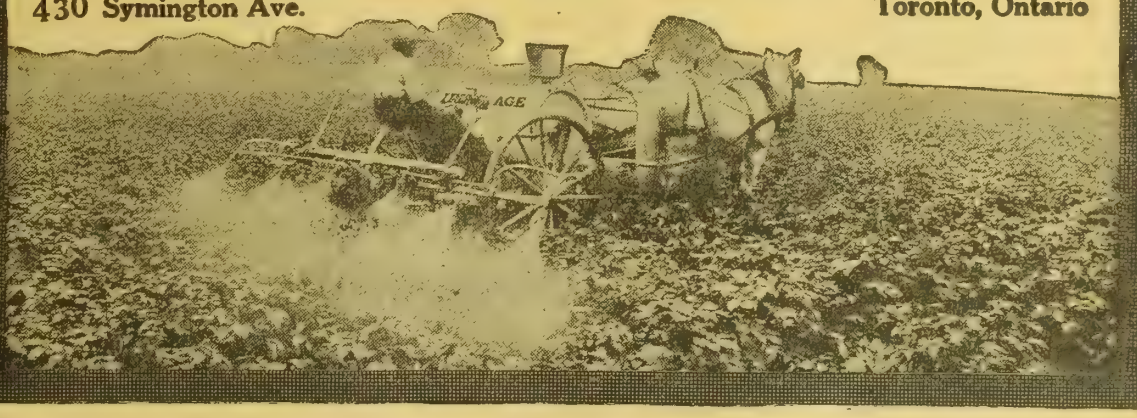

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DAIRYING.

FOUNDING A HERD OF PURE BRED DAIRY CATTLE ON A LIMITED CAPITAL

Every ambitious farmer, who is worthy of the name, has sooner or later to wrestle with the question of making a start along some line of purebred stock, or else fall back into the rear ranks of his profession.

The way in which this problem is to be tackled will be governed almost entirely by two factors, namely the amount of capital which the farmer feels he can put in the enterprise, and the type of stock he desires to make a specialty of.

For the sake of argument, let us consider the case of a man, who wishes to lay the foundations of a herd of one of the breeds of dairy cattle. To the farmer, who, at the outset, is in a position to make a considerable outlay, for the purchase of foundation stock of the right calibre, the road seems comparatively short and easy. Provided that he makes a reasonably good selection of animals in his first purchases, and follows this up with careful feeding and breeding, he can reasonably expect, in the course of a very few years, to develop a herd, which will approach somewhere near the standard of quality he had in mind at the outset. So much for the man who can start out with a flourish.

But, however, when a farmer has only a very limited amout of capital to spend in the purchase of foundation stock, the problem of founding a herd of purebred dairy cattle takes on a different appearance entirely. He has probably given the proposition enough thought to know that the sum he has at his disposal is only sufficient to purchase one or two animals of such quality as he would desire to have as the cornerstones of his herd. The price of such animals as he would need, sounds pretty steep in terms of hard cold cash—sufficient probably to purchase half a dozen animals of the type he has been accustomed to doing business with. Then, too, the possibility of running into bad luck with his one or two foundation animals, looms up rather large in his calculations, and if that should happen, the purebred game would be "all off" so far as he was concerned. Summing it all up, he is just as likely as not to come to the conclusion that under the best of conditions, it looks like a "long, long trail" from a start with one or two individuals to a herd in size, and quality the equal of the well known herds he has in mind, and which have perhaps been responsible for turning his thoughts along the lines of better stock.

To any person who is just at this "yes or no" stage, it might be of help to point out that a very large proportion of the finest herds in the country, among them some om the very herds which have aroused his envy, have started from just such small beginnings, as he would be obliged to make —or perhaps even smaller—and have been developed along the very lines, which appear to him too long a road to travel.

"Rome wasn't built in a day," neither can a prime herd be gotten together on short notice. On the contrary, it is a process which requires a solid foundation, however small, to be followed by careful selection, the weeding out of all failures, breeding so as to "fix" desirable qualities and, eliminate so far as possible the weak points, and last, but not least, a careful study of the individual animals, to ascertain the conditions under which each does its best work.

As a good example of how a first class herd has been developed from small beginnings, we have in mind a herd of Holstein cattle which ranks high in show and producing qualities, and is one of the pioneer Canadian herds. The foundations of this herd were laid some twenty odd years ago, by the purchase of three cows from one of the then prominent herds of New York State. One of these first three animals proved to be a poor investment, turning out to be a non-breeder.

After a few years breeding it was evident that one of the two remaining foundations cows was leaving progeny, which were showing more promise than were the descendents of the other, so it was decided that the herd should be based upon this one cow, and her progeny. That this policy was closely adhered to is well brought out by the fact, that at the present time out of the fifty odd animals comprising the herd, there are only three females which do not trace back, in ancestry, to the one cow. In the development of this particular herd, the ownre made a special point of using as herd sires, bulls, which were not only well bred, but which had in addition, quality and good individuality on a par with their breeding. Thiis is a feature which should be incorporated in the policy of every breeder, whether working on a large scale or a smal lone, if progress in the right direction is to be made.

What of the results gained through this method of breeding? From the point of view of production, in the particular herd used as an example, one cow held for a time the world's record for one day's milk production in the four year old class, viz., 116.4 lbs. of milk in 24 hours, while another cow in this herd has produced 32 lbs. of butter in 7 days; conclusive proof of the effectiveness of work along these lines. Does it seem reasonable in the face of facts like these to give up the idea of having better stock simply because of the necessity of starting in a small way?

DEFECTS IN FARM BUTTER

Good butter should be firm and waxlike in texture and rather slow to melt, a rich yellow—but not too yellow—in color, and with a delicate, appetizing lactic taste. Good butter is appreciated by every butter user, and we shall here give some o fthe troubles of the butter maker, with the remedies.

Sour Butter.—This comes from letting the cream get too sour before churning. A mild acid, a slight thickening of the cream, a smooth appearance and a consistence like fresh thin pancake batter, with the whole lot alike from top to bottom, is the kind of cream that insures good tasting butter, if the buttermilk is all removed after churning.

It is easier and better to wash out the buttermilk than to work it out. To do this draw off the buttermilk when the butted granules are the size of wheat, and fill the churn with water. Agitate this, draw off and repeat. Then work until solid.

Spongy White Butter.—This is caused by the failing most common—poor washing and working. The buttermilk s not all removed, and the fat granules are not solidified. Such butter will melt quickly, will get sour very soon, and in warm weather is not fit to eat forty-eight hours after churning.

Greasy Butter.—This is caused by churning too warm or working too much. The grain of the butter is spoiled and can never be regained. A thermometer will tell you how to avoid the first—churn at 52 degrees in summer and 55 to 57 degrees in the winter—but common sense and practice only will tell you how to avoid the second.

Bitter Flavor.—The diet is usually to blame for this fault. Eating raw weeds and other weeds of this sort or leaves from oak and beech trees will cause a bitter flavor.

In th winter a frequent cause. holding the cream at a low temperature too long. Cream or milk held a or near freezing point does not sour but becomes bitter. The acid-producing bacteria will not develop at a temperature below 58 degrees, although ther eare other bacteria which cause a bitter ferment that will propagate at a lower temperature.

White Lumps.—These are due clots of curd. They come from improper handling of cream. It ha

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become too sour and "wheyed off." In other words, it is partly decomposed. The scum of the cream has partly settled to the bottom and the solids have gathered in clots. These clots hold together so strongly that churning will not break them up, so they appear in the butter unchurned. They are unsightly; they lower the price of the butter if sold and destrop the pleasure of eating it if used at home.

As a preventative, the cream should be well stirred when fresh cream is added to that already n the can; also stir when ripening so that all will ripen evenly.

There are small white grains sometimes found in butter made from separator cream. But these are not the lumps meant here. They are simply little lumps of butter that the separated and will not take color like the unchurned cream. A remedy for this is to set the cream separator so that it skims thiner or to skin slower.

Mottled Butter.—Salt deepens the yellow in butter. If the salting is uneven or not well worked in, the color will be uneven. Mottled but ter is common when the butter granules are too large, or too cold when the sal tis added, so that it does not dissolve evenly.

Streaked Butter.—This is another result of uneven salting, the difference being that the different layers have been differently salted. Insufficient working is the trouble. An even incorporation of the salt will prevent both mottles and streaks and the working must be efficient to secure this.

First, the cows may have been milked too long after calving. The butterfats become hard and tallowy as the cow approaches the end of her milking period. The best treatment of such milk is to heat it, which may may be done best by setting the milk vesel inside a larger one filled with boiling water. It should be warmed until the surface "crinkles."

Or it may come from feeding too much cottonseed meal or other hard fat forming feeds.

The third cause is trying to finish the butter when it is too cold. It must be warm enough to mould like wax. The remedy for this is to warm the last water in which it is to be washed to 62 degrees or thereabouts which wil lsoften it; then salt and as soon as the salt dissolves, finish the butter quickly.

Light Colored Butter.—This is common during the winter months, when the cows are denied fresh grass. The only remedy is to add a touch of color to such butter and work it in evenly. In our younger days this was considered a disgrace, and the woman who colored her butter was looked upon almost as though she colored her face. However, most of us have outgrown this old fogyism.—A. C. Palmer.

MONCTON CREAMERY'S SUCCESS

In the summer of 1917 the Department of Agriculture of the Province of New Brunswick looked into the matter of having a creamery established at Moncton. The Department felt that this section was admirably adapted to dairying yet this very important branch of agriculture was not nearly as much in evidence as it should be.

It was believed a large central creamery at Moncton would give a great stimulus to the dairy industry. Moncton being an important railway centre and the natural hub for the surrounding country it would be feasible to have cream shipped in from all parts of Westmorland, Albert and Kent counties. Moncton as well would provide an excellent market for all kinds of dairy products.

Consequently, after giving the matter thorough consideration, a series of meetings was held throughout all parts of the above mentioned counties, in October and November, where creameries or cheese factories were not in existence. These meetings were addressed by practical and experienced dairymen from all three of the Maritime Provinces. The whole proposition which the Department had in mind for organizing was outlined. It was proposed to organize a co-operative company, limited to the amount of stock subscribed, with an authorized capital of twenty-five thousand dollars, divided into one thousand shares of twenty-five dollars each and at present to offer about four hundred shares which number would be sufficient to equip an up-to-date creamery ready for operation.

On the whole, the proposition was looked upon with favor. At each meeting a committee was appointed to look further into the matter in its particular locality and of this committee two were to be appointed among themselves to attend a general meeting to b held in Moncton at a later date, due notice of which would be given.

At the general meeting held in Moncton Dec. 27, 1917, the whole matter was thoroughly gone into again and the delegates were unanimous in their belief that a co-operative creamery in Moncton would be a splendid institution and as a result "The Farmers' Co-operative Creamery Company, Ltd." was organized, a board of directors elected comprising Messrs. A. E. Trites, Salisbury; Simeon Melanson, Pre de Haut; Geo. Fawcett, Middle Sackville, in Westmorland Co.; Urbian Breau, St. Anthony, Isaie Melanson, Legerville, in Kent County; S. S. Ryan Coverdale and C. W. Colpitts, Colpitts Settlement in Albert County. At a meeting held later Mr. Trites elected president, Mr. Simeon Melanson vice-president and Mr. J. H. King temporary secretary until a permanent man could be engaged.

The directors got down to business at once, a building was purchased. Mr. J. P. Simonds, of Dunstaffnage, P.E.I., was engaged in February, 1918, as manager and secretary-treasurer, after which the purchased plant was thoroughly renovated and equipped with the most modern machinery and on June 5th the company began business in one of the most sanitary and up-to-date creameries in the Maritime Provinces.

It is but natural to suppose after the expenditure of much time and energy in connection with this movement on the part of those particularly interested that they did not get very far from the cream vats during the first few days. Many prophecies pro and con had been forecasted but so far the writer is aware none were optimisti cenough to foretell as much of an output from the creamery as act-

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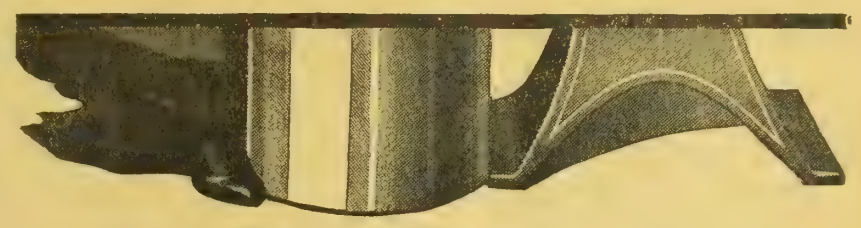

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And with butter-fat at present prices you can't afford to lose any of it.

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Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

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ually resulted.

Below is a summary of the business of the Company for the year ending Decemer 31, 1918, taken from the Secretary-treasurer's report:

Number of patrons supplying cream	324
Total amount of butter manufactured	90,507 lbs.
Total cash paid patrons for cream	$37,735.45
Average monthly price paid for fat	51.42
Value of buttermilk sold	$1,925.04

The output last year was the second largest of any creamery in New Brunswick. This without doubt exceeds anything ever attempted in this province in the line of dairying.

It is predicted that the output for this year wil be at least half as much again and unless all signs fail and the unexpected happens this prophecy should be fulfilled.

The second annual meeting of the company was held in their building on Feb. 13th, 1919, at which considerable business of importance was transacted. The reports submitted by the various officers and the satisfaction given by the first board of Directors resulted in the full board being re-elected, the only alteration being Mr. R. A. Weldon's election to the board to represent the east end of Westmorland County in place of Mr. Geo. A. Fawcett, whose untimely death took place last July.

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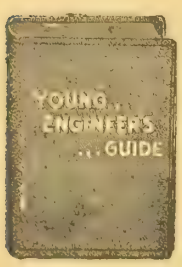

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LIVE STOCK.

NEW BRUNSWICK'S OPPORTUNITY TO GET AWAY FROM SCRUB BULLS

The scrub bull problem has long been before the public and has never as yet been satisfactoryily solved. Legislation on the subject has been suggested but it has been feared that this would be considered as an infringment on the personal liberties of the individual. Now, however the Federal Department of Agriculture (Live Stock Branch) in co-operation with the Provincial Department of Agriculture is offering assistance which we fully believe, if taken advantage of will solve the scrub bull question as the assistance granted is especially directed towards districts in which scrubs are kept.

Briefly, under this scheme in which the Federal and Provincial Departments are co-operating a pure bred bull is offered free of cost for the use of farmers in sparsely settled districts, in new districts, and in districts where advancement in stock improvement has been slow—also in districts where the farmers are unfamiliar with the benefits following the use of a pure bred sire. To secure a bull under these terms it is necessary to have an Association of at least ten farmers who must be unanimous in regard to the breed of bull desired. It must be fully understood that we do not want to interfere with private enterprise in the matter of placing these bulls, e. g., if a farmer in the midst of a proposed Association has a good pure bred bull of his own for the use of the farmers in that vicinity then it would be useless placing a Federal bull in that district. Also some one member of the Association must be prepared to take proper care of the bull to the satisfaction of the Federal representative who will inspect the bull from time to time.

To protect our local breeders representation has been made to the Ottawa authorities asking that whenever possible if good bulls can be found in the province they should be purchased. The Ottawa authorities recognize the justice of this claim and state that whenever possible, if satisfactory bulls can be secured from local sources, these will be utilized.

Th eHon. J. F. Tweeddale has expressed the opinion that this is too good an opportunity for the farmers of the Province to let pass and he desires that the farmers take the fullest advantage of it, hoping that at least four or five good pure bred bulls can be placed in each of the fifteen counties of the Province. Farmers interested in this proposition should communicate with the Provincial Department of Agriculture. A representative of the Department will be sent to help organize an Association.

Plan to secure the service of a good pure bred bull. Remember this is our opportunity to get away from the scrub bull.

"Let us take advantage of it."

T. G. HETHERINGTON,
N. B. Live Stock Supt.

WHAT IT COSTS TO RAISE A COW

(American Agriculturist)

Raising calves to cowhood is both a ticklish and a costly business. Many people do not think so—until they have tried. City customers have a feeling that calves, like Topsy, just grew; and that they look after themselves, causing the owner no care and little if any cost. The pity of it is, many farmers are of the same opinion. They are—until they keep a record of the food consumed and the labor entailed; then their eyes open to the fact that calves cost money, just the same as gasoline, or farm tools, or taxes.

Dairymen are under great obligation to the splendid exhibit of the New York state agricultural college at the milk exposition in New York city last May, when the college showed what it actually costs to raise a calf up to the time it givess its first milk. That exhibit itself was worth the cost of the entire exhibition. It was graphic—it told the story, not in senseless charts, not in columns of figures, not in ficititious diagrams, but in milk cans, in a real silo, in real bales of hay, and in real sacks of grain.

Its reality was there. And no man who had sense of values or sense of cold money could fail in his flair of the meaning. He located the costs of raising a calf. He knew that cows came as a result of labor, food, expenditures, not from free air water and talk. The college therefore, in presenting the exhibit, did a service that for all time to come will be of benefit to dairy interests.

Facts are as Plain as Day

These costs, mind you, are not what somebody imagines them to be; they are the real facts, taken from the calf pens, where food and labor are recorded, and they reveal 106 cold dollars expended as the cost of raising the average calf of New York up to cowhood. And these dollars, expended in getting a cow, are entitled to

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P.O. ..... Prov. .....

consideration when she becomes a cow.

But the daiyman—does he take them into accont? Does the average dairyman ever figure that cow investment in his milk costs? Suppose there are 20 cows in a herd, these are 20 times $106, or $2,110. That investment is worth 6 per cent. interest annually, plus a regular depreciation. In ten years each one of those 10 cows will be useless or dead, and the original $2,100 will be gone. Of course there may be 20 other cows to replace them, but the new 20 cows will involve another expenditure of like size as the first. No, you cannot get away from it—unless the milk these cows yield brings in enough cash to meet regular feed and labor bills and amortize or wipe out the original investment or cost, the owner has lost that original $2,110, or such a part of it as is not covered in annual milk receipts.

There are still other factors. Besides original investment in cows there are investments in building, land, tools, implements and current expenses for taxes, labor and feed. When figuring milk costs, before any items are put down as involved in such costs, first should be included these investment items in cows, buildings, land and implements. Ten per cent. of this sum shuold be set aside for depreciation; and in these days of high money rates another 6 per cent. for interest on the investment—a total of 16 per cent. to be chalked up as necessary to be met in determining what it costs to make milk. On top of these items now should come labor, feed, taxes and other items entering into the production of milk. Otherwise the producer is cheating himself, and is giving neither the family or the cows a square deal.

Cows Cost Money

We must get away from the old notion that because things are raised on a farm they cost nothing. They cost money in somebody's time. It may be the children who feed the calves, the women who help milk; but just the same the money value is in this human expenditure of effort, and this effort is entitled to reward just the same as if expended elsewhere, on the railroad, in the shop, in the town or in the city.

It costs $106 to raise a cow from calfhood to the period when she will supoprt herself. That's your money, Mr. Dairyman; you earned it, and plain business gives you the right to get enough out of the milk she yileds during her lifetime to pay that investment back, and all other costs of keep and care.

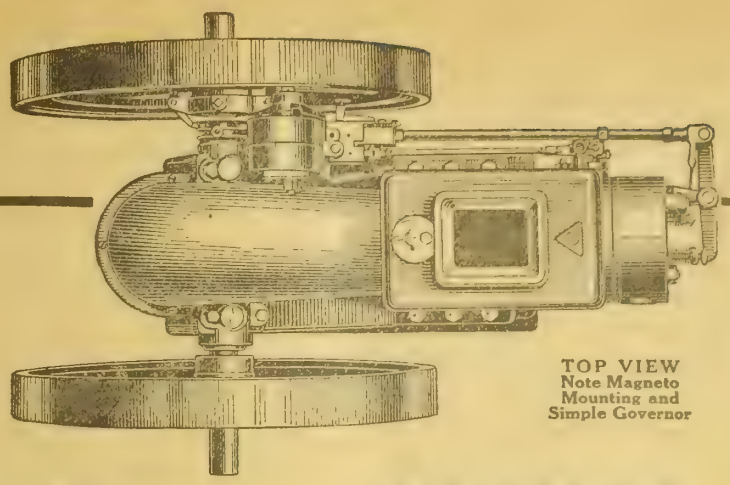
Cost of Raising a Cow

Hay, Etc.	3,558	18.00 ton	32.02
Whole Milk	438	$3.04 cwt.	$13.32
Skimmilk	212	.75 cwt.	1.59
Grain	589	57. ton	17.38
Silage, Etc.	1,777	8.00 ton	7.11
Human Labor	52.5 hrs.	.33 hr.	17.32
Other costs—Bedding, Horse Labor, use of Buildings, Use of Equipment, Interest on the Heifer and Feed Value at Birth, Losses Due to Death and Miscellaneous Charges, Less Value of Manure.....			17.79
Total Cost			$106.53

SHARP TEETH IN PIGS

I just want to tell you my experience I had with a sow. The sow had nine pigs, all very lively. The fourth day I counted them again and there were only eight young ones. I first thought one got out somewhere, but there was no place for any of them to get out, so I watched the sow until she laid down to nurse. Then I noticed the little fellows were fighting for the teats, and one teat was bleeding. All of a sudden the mother jumped up and snaped for one. Then I knew she had eaten one, so I clipped off those four wolf teeth on each side with a pair of nail clippers. After I had every one's teeth clipped off I put them all back with the mother, and had no more trouble. Those teeth are vrey sharp. I would advise every hogman to do this the second day after they are born.

Some peopleup my way give the sow a piece of salt pork in such a case, but that is nonsense. I had another sow farrow anad I have done the same thing, clipped the teeth off the second day; had no trouble with her at all. It happens more with large litters.—Herman Osmers.



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FOOD PRODUCTION MUST BE INCREASED

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Are the only guarantee against bruised, galled and chafed shoulders. They are better than other kinds, being soft, springy and absorbent. They make possible the continued use of a horse collar long after its worn condition would otherwise compel its discontinuance.

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INFLUENCE OF A PREVIOUS IMPREGNATION

J. M. Writes:—"If a registered mare, sow, cow or bitch is bred to a scrub will it require from one to three years of breeding to registered stock to produce an animal that can be registered?"

No. There is a theory, more general among breeders of dogs than breeders of othr classes of livestock, that a female once bred to a male of another breed or no particular breed at all, will not produce offspring true to the breed characteristics, when again bred to pure bred males of her own breed. The theory is held to some extent by breeders of livestock, but there is nothing to prevent the registering of pure-bred offspring from a female that has been bred previously to a male of another breed or of imupre breeding.

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THE HORSE

CARE OF THE FOOT OF THE FOAL IS NECESSARY FOR FULL DEVELOPMENT

The care of the foot should begin with the foal. It can be noted that the foal's feet at birth are in a very undeveloped state, and the conditions that often prevail in the nursery stage in the box stall are not conducive to a good start for best conformation or growth of hoof. Up to recent tmes, it was considered that the foot of the youngster could look after itself and it received little or no attention until the animal was started to work at three years of age. It is during these three years that it is possible to cultivate a good foot, and to correct errors in conformation of the limbs, and not afterwards.

Training the Foot

At the age of six weeks to two months, the wall has often grown considerably beyond the level of the outer edge of the sole, and the heels have begun to grow deep and strong, which condition interferes with the elasticity of the part, removes the frog from the ground and allows of contraction. The heels of the young animal's foot, as can be seen from their direction, have a tendency to curl inwards, and if left alone may produce a contracted foot. The chief object is to get them to spring, and to slope nicely outwards. Early trimming will bring about what is desired.

Every foal should be carefully watched to guard against this hoof tendency. They should be led on to a cement or wooden floor to see how it is with their hoofs. The dirt floor does not give so clear evidence of the contracting hoof, or the expanding one, and the trimming can bes best guided on a smooth, hard floor. The same applies in shoeing older animals. Every blacksmith that does horse shoeing should have a wooden or cement floor for the purpose, so that a level and perfect fit can be attained.

Very little difficulty will be found in training the young colt to stand quietly while its hoof is being fixed. Kindness and a little firmness will win them every time, and there are few colts that will have good underpinning without a good deal of attention being paid to the growing of their hoofs.

How the Hoof is Shaped

The wall, that is, the lower outer ring of grown hoof that projects further down than the sole, should be cut down with a sharp drawing knife until it is level with the outer edge of the sole all the way round. The heels especially should be reduced until the bars and frog are pressing on the ground. The toe has a tendency to grow too long, which throws too much stress on the back tendons. It must therefore be shortened, but not too much, so as to produce a "stumped" condition, where the wall at the toe has been cut, and evaporation of the horn is allowed, to the detriment of the quality of the hoof. The unshod foot should be shod every month. It is absolutely prohibitive to cut the sole, frog, or bars, or to cut out a wedge-shaped piece, between the heel anad the frog, as some do, with th idea that it favors expansion. It has the opposite effect. The frog has nothing to press against. This is all the attention that is necessary for the full development of a good foot, in an animal with limbs absolutely straight and well formed, and which moves straight and close. Such young colts do not require to be shod. The unshod hoof grows more quickly than the shod.

Improving Defective Limbs

Unfortunately many foals are born with limbs far from being straight and perfect. They may be bent and distorted in various directions. The reaction of the distorted limb on the foot, and vice versa, is a serious matter in youngsters, where the tissues are soft and plastic and easily miulded to external conditions. It is often possible to improve defective limbs by early attention and shoeing.

Every attention should be paid to defects of the limbs and the remedies to apply for same. For instance, in a youngster that grows wide behind the outerside of the column of bones of the limb is longer than the inner, and hence causes the limb to bulge outwards. Greater pressure is exerted on the outer wall of the foot, which wears away, while the inner wall grows too long and soon the foot gets misshapen and twisted. Such a foot will prevent the limbs from assuming their natural direction, if, as time goes on, they had a tendency to di so. It is not advisable to shoe a foal much before weaning, therefore in such a case the inner wall should be cut down, the toe shortened, and the outer wall allowed to grow long. The inner side of the frog may also require to be lowered so as to allow the inner wall to come to the ground.

After weaning time all alterations should be on the shoe. A shoe should be applied very thin on the inner branch and around the toe, and thick at the outer quarter and heel, and a small calkin on the outer heel. The thickening of the outer edge of the

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No. 446 Superior Quality Farm Harness Chain End Trace with Breeching. Bridles, Blind with side check. Lines 1 in. Hames high top. Traces 1¼ in. three ply with chain end. Breeching has folded seat with side straps to martingale. XC or Jap, mounted. (Less Collars)..... **$67.00**

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shie should be gradual, as too much at first might cause a sprain. The calkin tends to stop the foot suddenly, thus shortening the step somewhat, with the result that the toe is turned outwards and the point of the hock has an inward tendency.

Provided a foal has a good coronet, and a good quality of horn, it is generally possible, with a little study, care and attention, to cultivate a foot which will carry the animal without trouble during its lifetime.

AN EIGHT-YEAR-OLD HORSE HAS QUITTOR

I have a horse eight years old, very free worker when alright, but periodically goes very lame, most often on the near fore foot, when I have to lay him off work for a few days. The leg swells up and there seems to be great pain around the coronet of the hoof, in fact anywhere on the hoof should it be touched. I have treated the foot with poultice with the result that hoof cracks open, and a vile smelling discharge comes from it. On cleaning out hte sole of the foot it is found to be almost decayed. This sort of thing goes on periodically and I can do nothing for it.

nAs.—Your horse suffers from Quittor, a very troublesome condition of horses feet, generall caused by some injury such as treading by his mate while turning in harness or a blow from a talling tongue. Owing to the dense and unyielding character of the tissues involved this is an extremely painful disease, and before the abcess breaks causes very severe lameness. The frequent recurrence of the trouble in the case of your horse indicates that the deep-seated strcutures are seriously affected constituting one of the worst forms of the disease and one in which an operation requiring the skill of a qualified veterinarian may be necessary to bring about a cure.

The pus must be given free vent by opening the foot at the sole and cutting away the hoof below the coronet. When a food drainage has been established the foot should be thoroughly cleaned and immersed for two or three hours in a solution of bichloride of mercury, 1 to 1,000, kept as hot as the hand can bear or poulticed with hot bran containing a liberal quantity of common salt. Good drainage having been established the openings must be thoroughly syringed two or three times a day with some antiseptic solution such as bichloride of mercury 1 to 800, or sugar of lead and sulphate of copper 1 ounce of each to a quart of water. In persistent cases better results are often secured by frequent changes from one form of antiseptic to another.

Serious cases of Quittor are always very troublesome and difficult to deal with, and if at all possible it would pay you to place your horse in the hands of a competent veterinarian.

CHRONIC SORE SHOULDERS

O. B., writes:—"Mare had sore shoulders last fall, but having rested all winter, sores are now healed and the hair grown over. There are several small lumps all down the face of the shoulders that, when touched, appears to be sore, and when worked it looks as though she were getting sore shoulders again. She is getting very little grain, runs out on pasture by day, and feed her oat straw at night. Would be glad to know the best thing to do to keep her shoulders sound and free from sores."

While the sores which affected the shoulders have healed, the skin and tissues over the parts have formed little sensitive lumps which remain tender. You might try bathing the shoulders every day with salt water and a little vinegar added. This should help to absorb the lumps a little and remove the tenderness. See that the collar fits properly and that the hames are properly adjusted to the collar. You might also try the use of sweat pads and, by raising and lowering the hames, change the draft to bear more evenly on other parts of the shoulder.

Horsemen Attention !

Dr. J. Woodbury's Horse Liniment and Dr. J. Woodbury's Condition Powders will save and preserve the life of your horses. Their use will cure and prevent the disease common to horses, such as Cough, Colds, Distemper, Spavins, Pinkeye, Splints, Curbs, Enlargements, Cracked Hoof, Kidney Trouble, Fevers, Cuts, Sores and will remove bunches of all kinds.

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Why have a sick or lame horse, when you can get a reliable and warranted remedy? The leading horsement of the Dominion endorse Dr. J. Woodbury's Horse Liniment.

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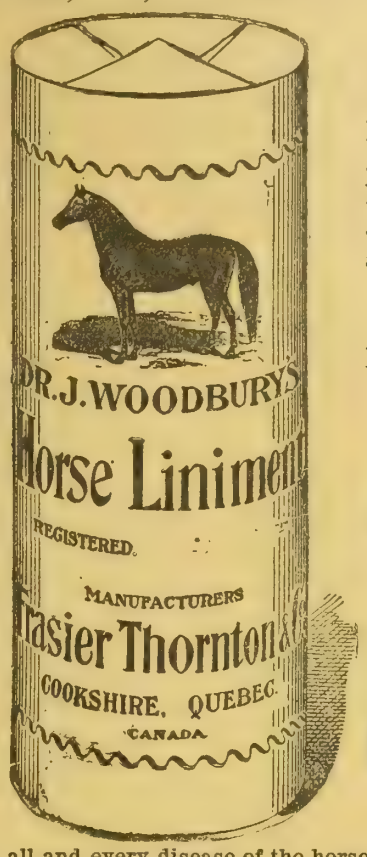

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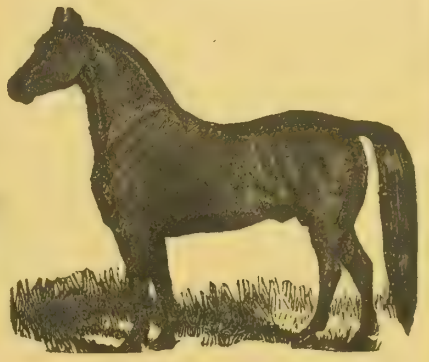
DEMAND
DR. J. WOODBURY'S
HORSE LINIMENT



AFTER USING

Use this preparation thoroughly for all and every disease of the horse for which it is recommended. Criticise it closely. Carefully watch, mark and notice, its effects, and, honestly judging it on its merits, you will be compelled to endorse it.

USEFUL DEVICE IN HARNESSING HORSES

There are always a few words at the bottom of a farmer's vocabulary that should not be spoken out loud. Being "new" on a farm and in the handling of horses I found that these sacred words in my vocabulary were daily reached on the following account: The horses always wanted to eat when I wanted to put the collar on; by the time I got the harneess thrown over their backs the collar was over their ears. After several "rackets"' with them and after calling them names that they did not recognize as their own, I am positive, I could manage to get the hames buckled. Then the same experience took place at the other end of th harness—with the heads in the manger the crupper woudn't go under the tail so there it was again.

Since using my little device I am never vexed as before aind the horses think I am easier to get along with in general. A string and a piece of bent wire will answer the purpose, but I bought for three cents per foot about three feet of steel wire chain. On the bottom end I put a snap hook and the other end of the chain I stapled to the ceiling of the barn directly over the horse's head, making the chain just long enough to reach the side ring in the halter. I also put a staple at the side of the stall. When I get ready to harness I snap the chain in the halter, thus keeping the horse's head erect and in position to receive the full harness in the easiest possible manner. When ready to take the team out I simply unsnap the chain from the halter and snap in the staple at the side of the stall, out of the way until it is to be used again. For so simple a thing it is surprising the pleasure there is in using it. Many persons have remarked concerning its originality and of the benefits. —O. T. Welch.

LICE ON HORSES

I would like to get your advice as how to get rid of lice on horses. I have been advised to use Gillette's lye and sulphur.—J. E. C.

Reply. To allay the irritation of the skin and destroy the vermin on your horse nothing is better than a preparation made of one drachm calomel mixed with one ounce petroleum ointment. A handy and also effective mixture for the same purpose is found in one, made up of one part turpentine to three aprts olive oil Gillette's lye if put on too strong doses is apt to damage the skin and take out the hair.

ABCESS ON MARE'S UDDER

I have a mare from which the colt has been weaned. Though I milked her for eight or ten times after, her udder swelled up and is now running yelolw matter. What can I do for her?—E. W.

Reply.—Evidently there has been a collection of milk which has caused an abcess. Keep the abcess open and syringe the wound with a one per cent. solution of carbolic acid. The opening must be allowed to run freely. After washing out with the solution dress with an antiseptic made up as follows: Powdered sulphate of copper, 1 drachm, lard, 1 ounce, mixed together.

SETTING TIRES

Loose buggy or wagon tires may be set by a bath of hot linseed oil. The oil penetrates the wood pores, causing the felloe to expand. This treatment is good for the wheel, since it makes it waterproof. Two quarts of oil will be more than enough to treat a wagon but it will probably be convenient to use at least that much, so as to be able to immerse a considerable part of the wheel in the bath at one time. Allow two or three minutes for the oil to soak in, before turning the wheel to a fresh place for treatment. An old dishpan and paint brush may be used to facilitate the work. In 24 hours after this treatment the tire will usually be found very firmly set. The wheels should of course be dry before giving the treatment.

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=OMAZON=

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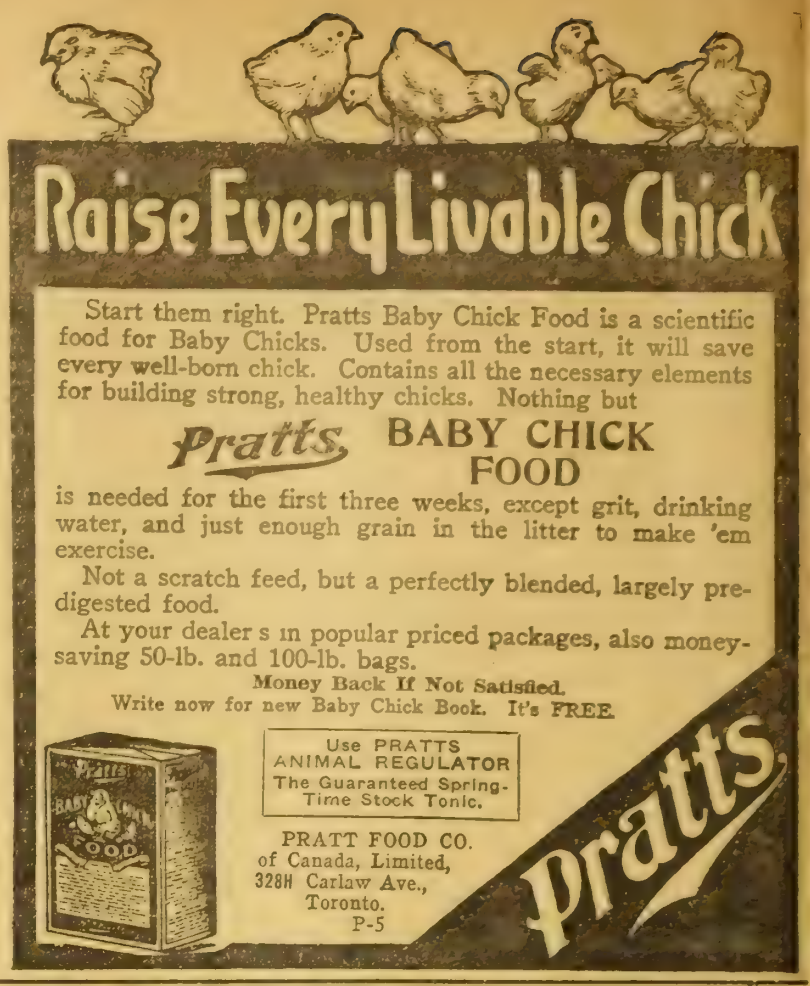
POULTRY.

ANNUAL MEETING OF THE NOVA SCOTIA POULTRY ASSOCIATION

The annual meeting of the Nova Scotia Poultr Association took place at the Agricultural College, Thursday, March 13th, at 10 a. m. Mr. E. C. Griffin occupied the chair. Fifteen delegatesfrom different Poultry Clubs of the province attended. Minutes of the last regular meeting were read and approved. Mr. Frank E. Jackson reported that the Poultry Show building at the Sydney Exhibition had not been improved. Interest in Poultry at North Sydney was as keen as ever. More chickens were raised during the last year and the clubs imported more poultry and feed for their members. Mr. W. W. Osborne reported for the Pictou County fancies and stated that a show had not been held in Pictou County during the last lear, but they were now re-organizing their Poultry Club, and were going after the Association to carry on a large show next fall. He stated that the difficulty of obtaining feeed of good quality at a reasonable price had kept many from enlarging their poultry flocks. Mr. Thomas Barrett, Stellarton, reported that their Association was being re-organized and would develop more strength and would assist in increasing the quality and number of poultry in the County of Pictou. He also called attention to the high express rates and asked for united action on the part of our Association in reference to express rates on live poultry for exhibiting. It was unanimously agreed that the Secretary deal with this matter and report to the Executive as soon as a reply could be had from the Express Companies. The date for the next Poultry Show in Pictou County was selected and reserved for this particular show. The dates selected were November 13th, 14th and 15th. Mr. R. J. Messenger reported for the Annapolis Poultry Club. The high price of feed and the scarcity during the last two years has retarded the increased production of poultry in htic County. The price rel ceived by the farmers for poultry and eggs was better than ever before but feed had at a prohibitive price. Mr. Fred Bath, Bridgetown, stated that the reason a show was not held in Annapolis County during this year was particularly due to the prevalence of influenza and to the difficulty of obtaining suitable dates on which to hold their show. He stated further that relief was necessary in regard to the feed situation before much could be expected in Annapolis County in Poultry production. Mr. Alden Harris of Wolfville, reported that a good show of Poultry had been held at Wolfville during the past season. Their show was held in an apple warehouse which makes an ideal Poultry Show building. Mr. John R. McMullin of Truro, reported for the Colchester County Poultry Association and stated that the first show held had an entry of about 300 birds. The show held in December of last year had an entry of over 800 birds, of a greatly improved quality over those exhibited at the first show. The egg exhibit of over 30 entries was a credit to the show and showed the interest taken in egg production. The dressed poultry at this show was superior to any exhibit of the kind held in the Province of Nova Scotia. As a delegate of the Colchester County Poultry Association Mr. McMullen stated that, he was instructed by his Association to impress upon the Department of Agriculture and the Nova Scotia Poultry Association the necessity of holding an egg laying contest at the Provincial Agricultural College . He outlined the success which attended the organization of similar laying contests in the Province of British Columbia. Much interest was manifested in a contest of this kind and farmers were induced to cull their flocks and discard from their flocks all unprofitable and unproductive fowls. Mr. Ambrose Rogers, the youngest delegate from any Poultry Club represented the Boys Poultry Club of Guysboro County, and in a neat speech impressed upon the other delegates that Guysboro County had some good poultry and was in a position to supply eggs for hatching to other parts of the Province. He stated that he represented a club of school boys who had undertaken the poultry improvement work and had held two shows of pure bred poultry in this County. They had competed for a silver cup donated by Mr. Jas. Tory and this cup has been won twice by a young exhibitor of light Braham fowls. Mr. Landry, Secretary, in the absence of the President, reported the proceedings of the Canadian National Conference held at Ottawa on the 18th 19th and 20 of February. This convention of representative Poultrymen throughout Canada had made recommendation to the Department of Agriculture in reference to the export trade market intelligence, increased consumption, opening of European trade, the formation of National Poultry Council, the Organization of Boy's and Girl's Clubs in every district where possible, the improvement of the stock in the country through egg laying contests and official records of performance, the standardizing of prize lists for County and School Fairs, increased facilities for cold storage, for poultry and eggs, and the removal of the standard price on bran and shorts.. Mr. Thomas Barrett, here stated that their Association requested the services of the Provincial Poultry Superintendent to visit the schools in Pictou County to intreest the children in the production of more poultry in this County. A discussion here followed in regard to certain breeds which have been carried in the prize list and which were not considered of sufficient value from a utility standpoint. It was decided unanimously that certain of these breeds should not longer appear in the prize lists of poultry shows which received department assistance. Mr. McMullen brought to the attention of the convention the two Provincial Shows and suggested that none but these two shows should be open to the entire province. Some discussion followed and it was generally admitted that each district should maintain their own show and patronize the Provincial Show at Halifax and the Maritime Winter Show at Amherst.

The afternoon programme consisted of an adress on "Poultry Feeding," by J. P. Landry and an address from Mrs. Jas. Stoddard, Mt. Denison, Hants C.,, on "Profitable Production of Poultry." Mrs. Stoddard's address was listened to with close attention and outlined her financial statements for three different flocks during the past three years. Mr. Bath suggested that the next meeting of the Association be arranged so that one whole day be devoted to the business before the Association and would prefer the day following the close of the Short Course.

In the evening meeting Mr. E. E. Freehill ,of Antigonish, stated that the influenza epidemic interfered with the holding of the show in this county. The quality of the poultry had improved by the holding of this show and he would not suggest the discontinuance of the show among the Poultrymen of this County. Mr. W. T. Mattinson reported for the Glace Bay Poultry Association and stated that a great increase in Poultry had occurred in Cape Breton. Mrs. Stoddard, and Mr. Landry had spent a week in the County and had visited the different schools interesting the children in the production of more poultry; the result was apparent in their last poultry show. The children were limited to two birds each and the exhibit placed in the show by these school children amounted to about 1,000 chickens. Mr. McMullen again brought to the attention of the Association the necessity for taking prompt action in regard to the holding of the laying contest. A committee consisting of Mr. H. H. Hull, Glace Bay; W. W. Osborne, New Glasgow, and Mr. John McMullen, was appointed to interview the Secretay and the Premier of the Province to press for immediate equipment and material to conduct an Egg Laying oCntest at the Agricultural College to begin on October 1st, 1919. This Committee was instructed by the Association to await on the Secretary of Agriculture, Prof. M. Cumming and place their views before him at an early date. A discussion followed in reference to the reorganizing of the Maritime Poultry Association and the Association decided to leave this matter as it now stood until the Maritime Poultry Show is held at Amherst. A Committee consisting of Messrs. Landry, Mattinson and Bath were apointed to draw up and submit at the next annual meeting an amendment to the constitution as outlined in the "Act for Encouraging Poultry Breeding." Mr. Bath wanted a copy of the minutes forward-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ed for local publication and the Association instructed the Secretary to have this done. A resolution was passed asking the publishers of the Maritime Farmer for permission to use their paper as the official organ of the Association. The Secretary was instructed to complete arrangements to this effect. Mr. E. W. Osborne suggested that any persons who had been improperly dealt with in purchasing stock should report it to the Secretary of the Association to be dealt with. If members of the Association an explanation should be demanded, if non members, all members to be notified of any unfair dealing of these breeders of Poultry. Mr. H. H. Hull reported in full the details of the organizing of a Federal Council of Poultrymen organized at Ottawa.

The election of officers resulted as follows: President, H. H. Hull, Glace Bay; Vice-President, E. C. Griffin, Port Williams; Executive Committee, Ambrose Rogers, Guysboro, E. E. Freehill, Antigonish, Fred Bath, Bridgetown, Alden Harris, Wolfville, W. W. Osborne, New Blasgow, Frank E. Jackson, North Sydney; Rerpresentative to Federal Poultry Council, H. H. Hull, alternating W. W. Osborne; Secretary-Treasurer, J. P. Landry.

RESEARCH WORK ON POULTRY DISEASES

For a number of years investigations have been conducted in Canada to determine the nature and prevalence of diseases of poultry.

The need for further research is emphasized by the fact that the exigencies of war-time have given a stimulus to the poultry industry, and it is natural to assume that theis additional interest has led to on increase, rather than a decrease, of poultry disorders.

When the work was first started by this department, very little was known about the diseases of fowls in this country. In order to cover the ground thoroughly, poultrymen were requested by press notices, correspondence and personal appeals to co-operate as fully as possible by sending in sick and dead birds for study and diagnosis. In pursuance of this policy, the department guaranteed the express charges, and in the last five or six years, the examination of specimens has become a task of considerable magnitude.

It therefore seems timely, when economy is the watchword, to make a few suggestions as to what work we desire to undertake, and to point out the various causes which result in individual deaths in flocks, and which can be easily recognized by the poultryman at home. In this connection, it may be pointed out that live and dead fowls are frequently forwarded to us via express from remote districts in British Columbia, Alberta and Saskatchewan, and the expense of transporting these birds is wholly unjustifiable where the losses are limited to one or two fowls.

From a study of our records, individual losses may be attributed to the following conditions, none of which can be transmitted to other members of the jock:

Affections of the Heart.—These are usually manifested by a quantity of fluid within the covering membrane, an din some instances by an accumulation of yolk-like material, the result of inflammation.

Rupture of the Liver.—This occurs in fowls which are excessively fat, and is recognized by sudden death, and the filling of the bowl cavity with blood.

Apoplexy, or a rupture of a blood vessel in the brain. This disease can be de termined only by the absence of other lesions, and the suddenness of death.

Peritonitis, or inflammation of the bowels and covering membranes. Peritonitis is caused by the partial debelopment of eggs in the bowel cavity; closure of the egg-duct by large eggs; or accumulated yolk material, etc. Frequently the diseased ovary is responsible for this latter condition.

The above diseases are those usually responsible for individual deaths, and may easily be detected by examining the birds.

The infectious diseases which spread rapidly through flocks concern us chiefly. Such diseases as Fowl-cholera, Tuberculosis, Blackhead in turkeys, Roup and Coccidiosis may be classified as infectious, and it is essential that they be recognized early, so that their spread may be checked.

Worms are also very troublesome, and we have already published directions for getting rid of these parasites. These bulletins may be obtained upon application to the Publications Branch of the Department.

If poultry owners desire to have parasites identified, the parasites—preserved in alcohol and securely packed—may be sent by mail to the Laboratory.

With reference to Tuberculosis and Blackhead, our bulletins fully describe these two diseases, and any poultryman should be able to diagnose them after reading our literature and seeing the illustrations.

To prevent misunderstanding of the aims of the department, we wish to restate that we are desirous of investigating affections which are responsible for large losses.

In cases of suspected poisoning, a public analyst should be consulted, as we do not undertake work of this nature.

As perviously stated, where only one or two deaths occur, the express charges usually total more than the market value of the birds.

We trust ,therefore, that poultrymen will assist us in our economic policy and send fowls only when several death have occurred simultaneously and the cause cannot be determined at home.—By A. B. Wickware, Assistant Pathologist, Biological Laboratory, Ottawa.

COMMON COLDS IN HENS

When a fowl contracts a cold—and, like human beings, by sneezing, it generally gives indications of having done so—it should be isolated. Should there be froth over the eyes, or a discharge from the nostrils and mouth, sponge these parts daily with warm water to which has been added a few grains of potash.

Should the head appear swollen, sponge it with equal parts of vinegar nad water. Administer twice daily, a teaspoonful of cod liver oil, to which has been added three drops of oil of eucalyptus and two drops of pure terebene.

KEEPING THE FLOOR CLEAN

The scratch material on the poultry house floor should be removed and renewed several times during the winter; it is well to give the floor a dusting with lime after each removal of all material. If a dirt floor is used it is well to remove a little of it from the entire floor and renew it with fresh soil in which a little powdered lime is mixed. Then put on the scratch material.

If you do not have time to remove the droppings often, have a box of fine earth handy and scatter some over the droppings occasionally. This is almost as effectual as removing them.

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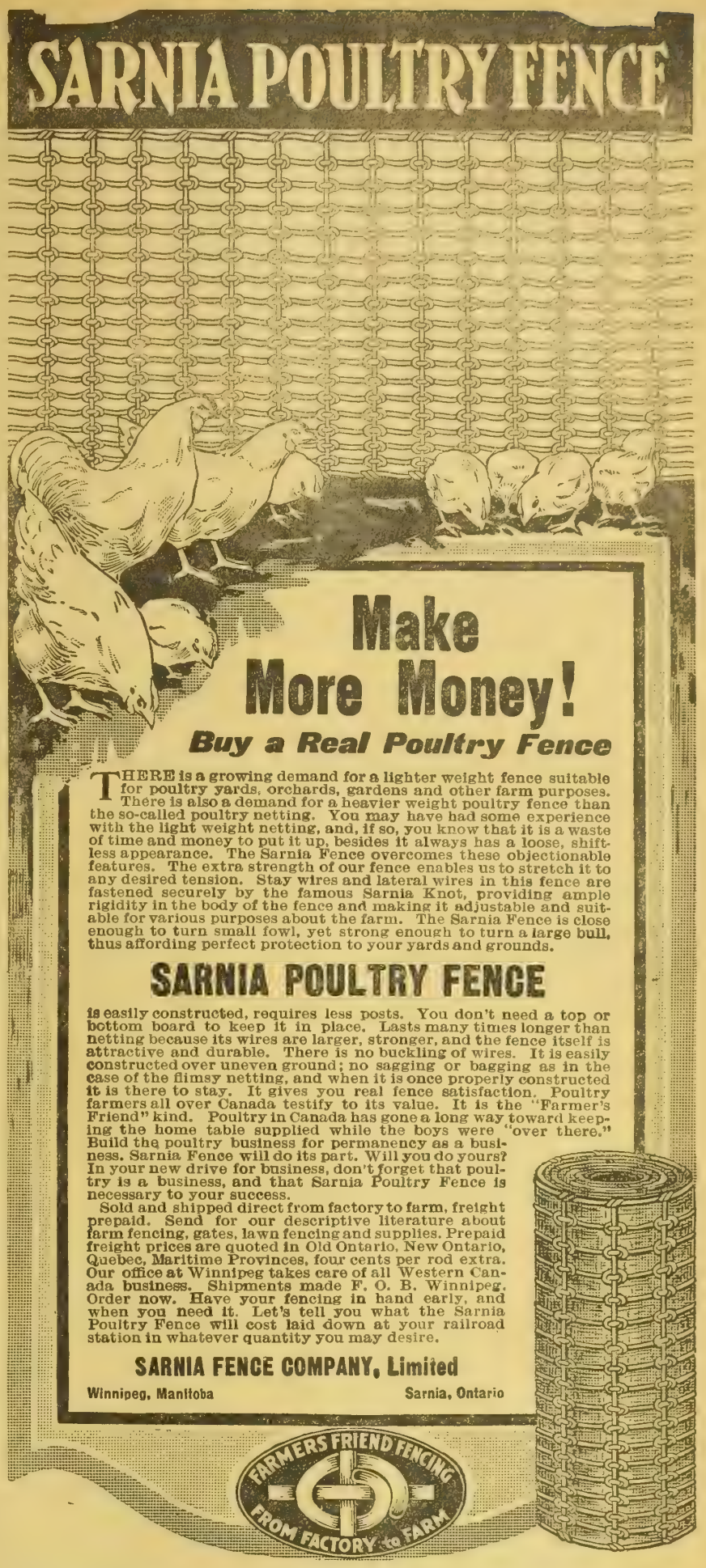
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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

The year's at the spring,
And day's at the morn;
Morning's at seven;
The hillside's dew-pearled;
The lark's on the wing;
The snail's on the thorn:
God's in Heaven—
All's right with the world.

—Robert Browning.

LITTLE MISS CLOCKMAKER

(By Gertrude Brooke Hamilton.)

Among the antique shops on Fourth Avenue, in New York City, was an old clock-shop. It's windows displayed rare and curious timepieces—a "Sol" clock with a brass face surrounded by onyz rays, a musictl clock of gay colors, a shuttered clock with gargoyle on top, and a tall peacock clock marked with eyelike spots of iridescent greenish blue. Unobtrusively lettered on a corner of the window was: "Lazare Chanson, Le Petit Horloger."

Lazare and his two fine sons Adrien and Crepin were no longer in America, nor in France, where they had gone to fight; Lazare, Adrien and Crepin were among the shadowy thousands who had lost their lives in the trenches. Lazare's wife, Rarhel, an American, and his young daughter, Bluette, were running the old clock shop. The bulk of the responsibility fell upon Bluette, because Rachel, on learning tardily of her triple loss, had become an "innocent"—that is, a child in mind.

Bluette, though wearing a black smock for her beloved father and brothers, still found the world a merry place to live in. Bluette was seventeen, lovely as the spring, simple, spirited, deeply religious. She felt truly that in all loss God knows best, and that in all circumstances God provides. When the need had come to move from the pretty uptown apartment, she had gayly taken Rachel to live in the meager flat behind the old clock-shop and had naively undertaken to sell the clocks. In the few weeks she and Rachel had lived in the little flat behind the shop, each morning had found Bluette Chanson with a song on her tender lips.

She sang like a skylark as she opened the shop one gray, black morning. Down on Fourth Avenue the early traffic was rumbling by, and on the sunless, battered pavements battalions of people were going to work. Bluette showered her lark-song upon them: the good people starting out on a good day, guided by the good God.

When she had opened the shop, Bluette looked out in the hall for her daily pint of milk. Some mistake had been made that morning, and the Chansons had no milk. Bluette ran to the hall stairs and halloed down them in her slight, sweet voice to the janitress of the building, asking about the milk.

A door was opened on the floor above, and a coatless individutl with a smug torso and supercilious shoulders came to the banister and looked at Bluette Chanson. "I beg your pardon, miss," he said respectfully. "Can I be of service to you?"

Bluette glanced up with a frank smile. "Our milk has not come, and my mother must have her chocolate," she explained.

"I would be happy to loan you some milk," said the man.

"Have you plenty?" asked Bluette.

He bowed. "Plenty, miss." He returned to his flat, and came down in a minute or two with a pitcher of milk nicely placed on a smal ltray.

"Thank you," said Blette. "It is kind of you."

"Don't mention it, miss. I hope to serve you again. I am Mr. James Marrow. I have lived in the flat above for many years." He added with discreet impulsiveness: "May I venture to tell you, miss, that I hear you singing quite often?"

"I hope it doesn't disturb you," laughed Bluette.

"Not at all, miss," replied James Marrow, bowing. He ascendeed the stairs with a modified, web-footed tread.

Bluette carried the pitcher of milk htrough the old clock shop to the shabby room ehind it, where Rachel Chanson was playing with some toy soldiers that had belonged to her son Adrien. "We came near not having our chocolate this morning, Maman," said Bluette "Luckily we have a kind neighbor." She prepared the chocolate and buttered some finger-rolls.

"Breakfast, Maman," she said tenderly.

After the chocolate and rolls, Bluette climbed to the window of the shop to wind the peacock clock. While she was pulling the bronze weights, the clock struck—eight times a mechanical peacock strutted out and spread its multicolored tail. Bluette glanced down at Fourth Avenue with a tinge of eagerness, a flash of expectation. Her dancing eyes alighted on a passing automobile, in the tonneau of which a handsome young gentleman was comparing his watch with the time of the peacock clock.

Bluette gave a vagrant sigh. For a week the handsome young gentleman had slowed his car at eight o'clock to compare his watch with the peacock timepiece.

Laughter sparkled over Bluette's' face as she climbed from the window back into the shop. "With so many nice people on the street, Maman," she called, "surely some one will come to buy a clock." She ran into the rear room to wash the chocolate cups—and the bell over the door of the shop tinkled.

Delighted at the thought of some one coming to buy, she ran back. Then she blushed, and stood abashed. The customer was the handsome young gentleman who for a week had shown concern over the time his watch was keeping! He was handsome enough to dream about; his gray eyes were lonely; his brow was idealistic; and his sweet mouth had a humorous quirk.

With a graceful sweep of his left hand he removed his hat. "Does Lazare Chanson mend watches?" he asked courteously.

Bluette touched her black smock. "I am la petite horlogere," she said simply.

He laid his watch on the ancient clock-counter. "There's something wrong with one of the hands, I think," he said.

She picked up his watch. With the sensitive, delicate fingers she had inherited from Lazare, she clipped off the cystal and examined the lagging hand. "If you will leave this," she said, eyes down, "I'll see what can be done." She took a pad from a clock-shelf, for his name and address.

His name was Reed Mockabee, and he lived on East Sivty-second Street. After he had given his name, he strolled about the shop looking at the clocks.

Bluette, remembering how Lazare had handled his customers, essayed to display some of the clocks. She showed Reed Mockabee a mother-of-pearl timepiece that was three hundred years old, and she turned the key in a clock with dancing marionettes. She loved the dancoing marionette clock—and she was easily persuaded to turn the key a second time.

"Happy as I'd be to sell this clock, I think I'd cry over the sale," she confided.

"I'll never buy it," smiled Mockabeee. "For I'd hate to drench any happiness with tears." He laughed—a fine laugh that filled the shop with young manhood.

Rachel Chanson come from the rear room with wonder on her face. "Are you home again, Adrien?" she asked Reed Mockabee.

Bluette ran to Rachel and put her cheek against her mother's hair. "Not yet, dear," she soothed. "Play with your soldiers."

"And Crepin—and Lazare?" questioned Rachel, turning to the rear room.

Bluette tremuously explained to Mockabee. "She hasn't had her reason since my father and brothers were killed in France."

"The wars are hideous," said Mockabee looking at Bluette's black smock. "But I envy the men who can fight. My right arm and hand are useless—they've been paralyzed from birth." His lip curled, emphasizing the lonliness of his gray eyes.

Bluette was strangely stirred. "There are many things one can do," she said vaguely.

He half laughed. "What things can a left-handed poet do " he demanded.

She eyed him with timidity. "Are you a poet?" she asked.

He nodded, mouth quirking. "Haven't you read any Reed Mockabee verses?"

"No," said Bluette. "But I'd like to."

He smiled at her. "When shall I call for my watch?"

"I'll mend it today," said Bluette.

"I'll come tomorrow," said Reed Mockabee, going.

As the door with the little bell closed behind the handsome young gentleman, Bluette laid his watch in the repair box. "We are having good fortune today, Maman!" she called. Roseate, she flew to the rear room, washed and dried the chocolate cups, laundered a couple of caps for Rachel—and chatted trustfully of the future. In the afternoon she studiously tinkered with Reed Mockabee's watch and succeeded in mending it.

She was making a veal ragout for dinner, when the little bell sounded nad James Marrow entered the shop, carrying a plate adorned with a piece of sugared pastry.

"Do you care for sweets, miss?" he inquired, holding out the plate for her

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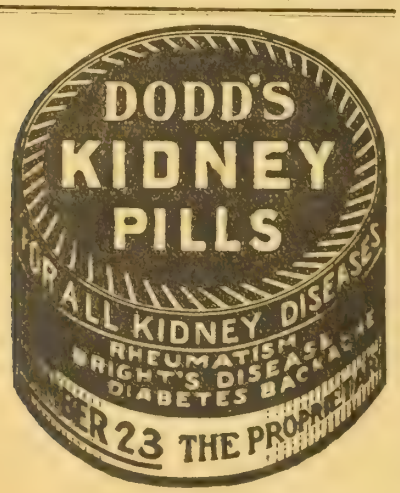

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inspection. "I am a waiter in the Hotel Breslni—we waiters are given the old pastry. You'll find this apricot tart very nice, miss."

"Thanak you," said Bluette, accepting the plate of pastry. "You are very kind."

James bowed, and pullel the large lobe of his ear. "I hope the clock-business goes well, miss," he ventured.

"Our shop is never over-crowded," admitted Bluette vivaciously. "But we had a watch to mend today. One never knows—tomorrow I may sell a clock."

"I hope so, miss," said James. He coughed behind his hand; and murmered confidentially: "I have a good many regular patrons at the hotel, miss; and if I find the ipportunity to mention your clock shop, I shall be happy to do so."

"Thank you," said Bluette graefully.

"If at any time you need my services," continued James, "I am always at home when not at the hotel." He lowered his voice. "I spend my spare time working on the invention of a food capsule, miss—aimed to sustain life, please the palate and do away with knives and forks. A waiter sees much time wasted, miss."

Bluette laughed merrily. She felt James Marrow already a friend, a comical servitor in the friendly world.

She showed the pastry to Rachel and finished the preparation of her veal ragout with singing spirit. After dinner she took Rachel for her evening walk—along Fourth Avenue and up Park as far as Grand Central Station. At nine o'clock Rachel went to bed . Bluette climbed into the unlighted window of the old shop and sat in the shadow cast by the peacock clock. Far above the city shone the stars and a cradle moon. God's region was deep and blue, full of tranquillity. Bluette leaned back against the peacock clock and felt no fear of the morrow.

Reed Mockabee came for his watch the next morning. "I've been thinking about you," he told Bluette with his melodious laugh. "D'you know, I wouldn't have pluck enough to face your siuation myself."

Bluette laughed gaily. "You'd have pluck if you had to have it."

"Would I?" he answered indolently, eyes on her face. He took stock of her. "Suppose you fail?" he humorously pondered.

"The person trying to do the good thing can never fail," said Bluette with soft surety.

He looked down at his helpless right hand. "Suppose I tried to fight," he said. "Wouldn't I fail?"

"I don't know," said Bluette, confused.

There was a slight pause. Then Mockabee took a little volume from his pocket and pushed it across the clock-counter. "Some of my doggerel," he said.

Bluette picked up the volume. "I've never known a poet," she said with a touch of awe.

"May you never know another!" smiled Mockabee. He walked to the window where the timepiece was striking. "Do you sell many clocks?" he questioned.

"Not a clock have I sold'" laughed Bluette. "But soon I shall, very soon."

"Yes," said Mockabee, "I believe you will. You have grit." His handsome face shadowed. "I haven't," he acknowledged, half laughing. "I'm not like you—with the stuff that goes to make up somebody's ideal." He made her a graceful, admiring bow. "Good-by," he said, leaving.

Bleutte opened the volume of verses and read some of Reed Mockabee's rhymes: idle songs of life and love. She left them only when her daily tasks called her, to return to them at the earliest opportunity. She read them raptly.

At noon there came a customer who bought a clock.

The bit of luck sent Bluette soaring. She went marketing, purchased a squab and a pot of current jelly for Rachel. That evening she wrote a stammering, eager little note to Reed Mockabee, about his verses.

The handsome young gentleman did not reply—and when Bluette wound the peacock clock in the morning and glanced with her flash of expectation down at Fourth Avenue, there were no longer the lonely gray eyes to laugh down into. But Bluette was content: she had verses to read; God aws letting her have success in the clock business; and she had a polite neighbor in James Marrow, whose offerings of day-old hotel dainties, inquiries after her welfare, and sundry acts of service, never fluctuated.

Reed Mockabee sauntered into the clock shop one day. "How are you getting along, somebody's ideal?" he asked.

Bluette blushed happily. "I'm growing rich," she told him in an intimate tumble of words. "Yesterday I sold the peacock clock. I'm making good."

"I knew you would," smiled Mockabee, walking about the shop. 'I see you haven't sold the marionettes yet," he laughed. "How's your mother?"

"I'm afraid this downtown air isn't very good for Maman," responded Bluette sadly.

"My car is outside," said Mockabeee, turning the key in the marionette clock. "Suppose we take your mother for a ride—would she enjoy it?"

"Oh yes," said Bluette.

"Get your mother ready," smiled Mockabee. "We'll spin out to the Westchester hills."

Bluette ran to make Rachel ready for the ride. She pressed her cheek to Rachl's "God is good, Maman!" she exulted.

The ride in the automobile brought faint color to Rachel and made Bluette bloom like a flower.

"Why don't you live where you get better air?" asked Mockabee. Fourth Avenue isn't good for your mother's nerves."

"I must sell the clocks," said Bluette, arm about Rachel.

Mockabee went on in his attractive, impracticable voice. "When I'm fagged I often leave town on a copule of hundred acres I have down in Maryland. I call the acres 'Silver Vale'—you should see them." His face became dreamy. "Orioles flashing in the sunshine, meadows of tall grasses, stretches of deep woods, runs of lapping water. I've written most of my verses there."

"Your verses are ewonderful," said Bluette shyly.

"I'll send you some more of them," smiled Mockabee. Then his brows met over his gray eyes. "These are not silvery days, are they?" he demanded with irony. "Not days for a poet!"

"I think," said Bluette hesitantly, that poets are needed as well as fighters, in these days."

"Thank you, fighter " His smile came back, and he looked at her as if she had started poetry in him.

His look started song in Bluette—a medley that was like a hymn. She spoke at random. "Maybo I'll get enough for my marionette clock to take Maman some place like Silver Vale."

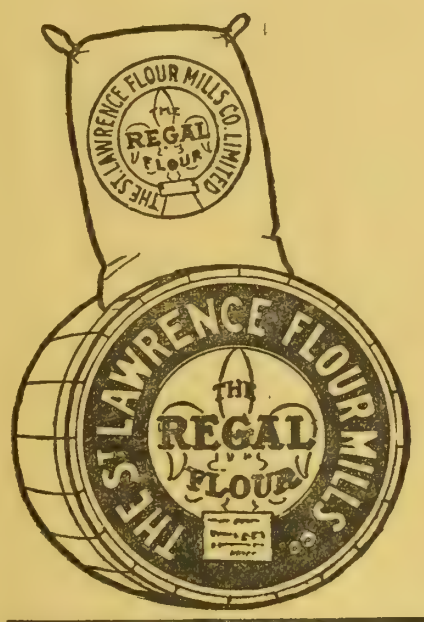
Mockabee laughed—still looking at her with the lost eyes of a quickened poet. Then he roused himself! "It's fine to be as practical as you are," he said enviously.

"Am I practical?" she said, blushing with pleasure.

"Aren't you?" His look steadied as it stayed on her. "Aren't you everything that I'm not?" he pursued, mouth quirking. He put out his left hand and touched her right hand. "Just what do you think of me?" he said suddenly. "I'm nearly thirty, one-handed, a versifier. Just how much contempt have you for me?"

His banter made her unable to say how little contempt she had for him.

The Big Value in
FLOUR



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His face became completely unhappy. "I'm about as much good to my country as my silvery acres in Maryland!" he scoffed.

Eyes brimming, she protested. "Oh no!"

"Oh—yes!" he lightly contradicted. "Don't try to soften your unwillingness to give me your frank opinion." His steady look uncovered a flash of strong emotion, and turned away. He changed the tenor of the conversation.

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Manufactured by the
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"Here's soping you'll soon shed happy tears over the sale of your marionettes, fighter.

Some one bought the marionette clock a day or two later, for a round price. Bluette attributed the sale to God in her prayers, and thanked Him for her success.

Reed Mockabee sent her another volume of his poetry. She read the second volume of love-verses blissfully. She felt, with happy simplicity, that Mockabee loved her, and that she loved him. She waited for events to shape some climax. She planned the sweet things that would come after a while. But as the days went on and she had nothing more personal of the handsome young gentleman than his verses, the songs she had sung in the mornings went out with the other pretty sounds that often die downtown in the city. James Marrow found an occasion to inquire why Bluette Chanosn sang no more. "I took pleasure in your light-hearted voise, miss" he stated.

Bluette was pensive. "One never knows. I may sing tomorrow," she said, thinking of what the morrow might bring her.

"I hope so' miss," said James; and he coughed behind his hand. "Do you care for flowers, miss?" he solicitously asked.

"Yes," replied Bluette, lost in her reverie.

James Marrow tendered Bluette a bouquet of hotel carnations that evening. "I presume you are versed in the language of flowers, miss?" he hazarded. Then he sighed, laid his hand on his smug torso and withdrew.

When Bluette put the carnations in water she found a note in them, addressed to her in a perpedicular hand. She opened it and read:

Dear Miss:

I have lived many years in this biulding, and it was my pleasure to know from a distance your lamented father and brothers. For many years miss, I have heard the clocks in the shop striking at night.

May I take the liberty, miss, to express my admiration for you? May I approach subjects we have not as yet discoursed upon? May I, miss, state my qualifications for the favor I am about to ask of you?

Miss, I am forty-eight years of age, wear a toupee and have several pivot teeth. Other than this, I am sound in mind and body. I come of English people, my father having been an honest yeoman. Miss, I have saved a modest sum and expect to make larger sums when my food-capsules are on the market. I have, as you may have observed, regular habits and an even disposition.

If I could serve you all my life, I would be most happy to do so. May I request the favor of your hand in marriage, miss?

Respectfully,
JAMES MARROW.

Bluette weighted the note with the vase of carnations, and laughed mirthfully. "Imagine it, Maman!" she said.

James Marrow came to see how she had taken the note.

Bluette gayly returned it to him. "May I tak the liberty of asking you not to write me such letters, Mr. Marrow?" she cried. Her gesture laughingly dismissed him.

But when he had gone, and she fell to thinking of Reed Mockabee, her own wistfulness made her feel sorry for James. She reflected upon her many blessings, the grit she possessed, and the good fortune that flowed t oher from all sides. She felt that she must be kind to everyone.

On an impulse she carried a cup of her nice chocolate up to the waiter's flat, and with an air of pretty royalty gave it to him when he opened the door.

James accepted the chocolate with respect. His eyelids were reddened; he had been crying.

Bluette saw this, and stretched out her hand to him. "If I hurt your feelings," she said sweetly, "forgive me."

"Don't mention it, miss," begged James.

"It was wrong of me to make fun of you," she insisted. Her face grew earnest. "How might I feel if a friend made fun of me?"

"We're bound to be made fun of, miss, as we go along in life," said James.

Bluette was reflective. "It seems a pity—for God never makes fun of us," sre said.

In James Marrow's flat a clock struck. Turning her head, Bluette saw through the open door her peacock clock, with the mechanical bird telling the hour by strutting out and spreading its multicolored tail. She looked in suprise at James Marrow.

An expression of guilt watered the waiter's counteance. "I have admired that clock for years, miss," he said apologetically.

"But I sold it to a stranger," said Bluette puzzled.

"Yes, miss," murmured James. And then another clock struck.

Bluette stepped quickly to the threshold of James' flat, and looked in. Her marionette clock was striking on a table, and all the clocks she had sold were there. They were ticking giving the domicile a sort of fatalistic craziness.

Bluette looked in amazement at James Marrow.

His embarrassment amounted to misery. "I hope you are not offended, miss," Marrow stammered. "I am partial to clocks, miss. And it is hard, miss, for a very young lady to make a complete success of a man's business. I spoke to several of my regular patrons at the Hotel Breslin, miss, about your shop. But when they did not seem interested, I ventured to hire divers persons to buy your clocks. They are really company for me."

Bluette smiled faintly. "I suppose," she said with difficulty, "I should thank you. You are kind." She made an unconsciously imperial gesture, and went down the stairs.

She climbed to the dark, almost empty window of the old clock shop and sat down behind the letters, "Lazare Chanson, Le Petit Horloger." She could no longer credit herself with success, for James Marrow had bought all her clocks. With thankfulness she had accepted success from Heaven—with joy she might have accepted success from Reed Mockabee. But she felt in debt to James Marrow. Lazare, her father, had told her never to get into debt.

Bluette Chanson opened the door with the little bell the next morning when she heard James Marrow coming down the stairs. "I'm in debt to you," she said simply. "So if you still wish it, I'll marry you to square the debt."

James bowed. "How are you in debt to me, miss?" he inquired.

"You bought my clocks from kindness," said Bluette.

"No, miss. I'm very fond of clocks. I may confess to you; I've had my eye on the clocks a good many years."

Bluette searched his face. "Then, maybe, you bought them just for profit," she faltered.

James laid his hanad on his breast. "I bought them from love, miss, begging your pardon," he admitted.

Her face brightened, then paled again. "You see," she managed, "I'm in debt to you."

"I have received full quota, miss," said James. Then he approached her, his shoulders straightening. "But if you feel, miss, that my qaulifications are sufficient—" He grew mealy with hope, and made bold to touch her hand.

Bluette shrank from him. "Oh!" she said in fright.

"Excuse me, miss," said James; and he instantly put distance between them. "I see it cannot be, miss," he stated. "If at any time I can serve you, miss, I am wholly yours to command."

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Restraining tears, James Marrow withdrew.

An appalled feeling assailed Bluette as James disappeared. Despite her relief in having him refuse her agreement to marry him, he had been her friend; he had enabled her to absorb all the advantages of success, to keep are irresponsibility of adolescence. A sense of coming change shook her.

In agitation her thoughts fled to Reed Mockabee. Why had he never come to see her again? Surely her sweet surmisings had not been in vain! Surely the hymn he had started in her had its deity to sing to. She took from the clock shelf the pad she had written his address on when he had left his watch to be mended. And when Rachel had gone to bed that night, Bluette left the old clock shop and went up to the part of New York where Reed Mockabee lived. She found his house an imposing mansion, with all the shades drawn down. It seemed to make autocratic fun of her!

Bluette carried a clock to an antique dealer the next day and tried to drive a bargain. But the crafty old dealer, with his tangled beard and disappearing eyes, easily got the better of her, and she came out at the short end. She made up her mind to wait for legitimate customers—and the empty hours that dragged by made her realize more than ever her futility. James Marrow came down to the clock shop, and expressed a desire for the shuttered clock with the gargoyle on top. Bluette begged him not to buy the clock. James withdrew.

Bluette went back to the bearded antique dealer—and for hardly more than pennies, she parted one by one with Lazares rare clocks. The Sol clock with onyx rays was the last timepiece to go to the antique dealer, and when she had nothing left, Bluette set about packing.

"Where are we going?" asked Rachel.

"Where we can get nearer God, Maman," answered Bluette.

Rachel boxed her toy soldiers. "Come, sons," she said. She wept suddenly over a soldier that fell from the box.

The tenacious, elastic spirit went from Bluette . She sank into a chair, and felt any goal inconceivably distant: the eyes of her heart visioned Silver Vale, sunshiny acres where orioles flew, trees throve, streams gushed, and where the sun hung in the sky like a wine drop spilled from a chalice. She felt too far from sunshine to reach it.

She put her face in her hands, to have a practical talk with God. But her yearning imagination carried her to Silver Vale, to commune with nature; she seemed to see the feathered and nested birds, the trees, given sap, the flowers, given sustenance. Nature, with its rhythmical overflow and interflow, seemed to her browsing and dreaming insecurity. And it seemed to her that only humans had to fight for foothold. Perplexedly she thought of th generation in which she lived—of the crowded ships transporting armies of good men to other lands, of the good women left behind uprooted, with innocent mouths to feed.

She was astounded. "Why, where are you, God?" she whispered.

Lifting her face she looked about the depleted shop, and again visioned sunshine, and trees castiing comfortable shadows "Are You a poet, God?" she timidly enquired. "A poet, perferceting nature and neglecting us? There's sorrow in the world—havoc and lunacy and bewilderment. Where are You, God? You aren't awake! You aren't watching us!" Blankly she hid her face in an open volume of Mockabee's verses that lay on the ancient clock-counter.

She did not know how long her face was hidden in the timeless old shop; she was aroused by the tinkling of the bell on the door.

She saw Reed Mockabee standing inside the door. He was tanned, erect, changed—the lost look had gone out of his gray eyes; his sweet mouth had strengthened, and his shoulders were broader. He was dressed carelessly in brown corduroy trousers and jacket, boots, and a soft shirt the color of earth.

He stood for a second just looking at her. Then he doffed his broad hat, walked alertly across the old clock shop, leaned over the ancient counter —and smiled a salutation into her eyes.

She quietly fainted across the counter.

She came back to consciousness in his sound arm. He was bathing her face.

"What has happened to you, love?" he asked, aghast.

"Oh, love, where have you been?" she said, weeping.

His arm cradled her. "I've been down in Maryland—doing things. I've been turning my Silver Vale acres into a reconstruction training farm. I've a hundred and fifty wounded soldiers there, and people learning them new trades and ways to make a living. The last time I talked to you, Bluette, —how long ago it was!—I made up my mind I'd never see you again till I'd tightened [illegible] worth while." He pressed his cheek to her white one [illegible]. I—

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There is not one person in a thousand who gives this subject the attention it deserves. A. H. M. shoes are sold in more than 5,000 retail stores all over Canada, and we know what we are talking about. Many people whom you meet every day are walking about in shoes which are not really comfortable, which do not retain their neat and attractive appearance, and which do not last as long as they should.

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Any reliable dealer knows the type of shoes which you ought to be wearing (for comfort's sake as well as long service), and he is able to fit you correctly. Go to him when you buy shoes, even if it means an extra trip. You will be well repaid by the extra comfort and the extra service which you will get from your purchase.

Look for the manufacturer's trade mark on the shoes you buy. It is your best assurance of good quality at a fair price. For no manufacturer will stamp his name upon a product which he is ashamed to acknowledge.

We have prepared a booklet, "How to Buy Shoes" which will help you. It is sent on request to any address in Canada. May we send you a copy with our compliments? Write to our head office at Montreal.

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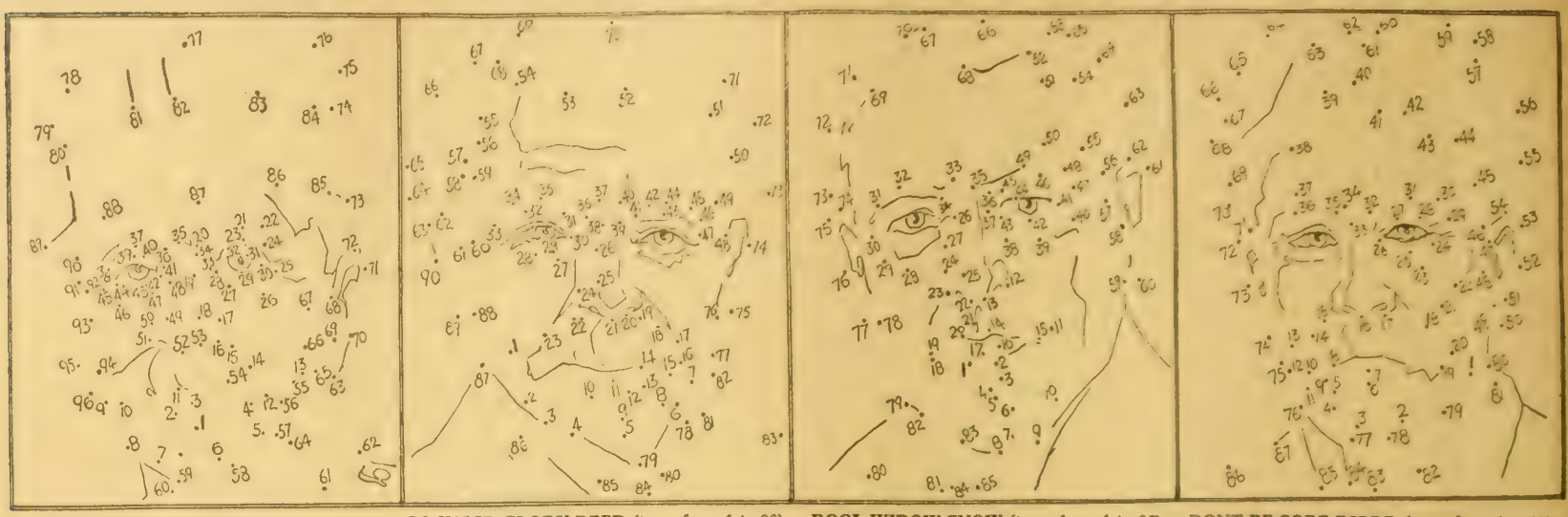

LASH OF CHARM (trace from 1 to 96) GO VALID GLORY DEED (trace from 1 to 90) ROOL WIDOW SNOW (trace from 1 to 85) DONT BE SORE RIBRR (trace from 1 to 87)

How Familiar Are You With the Features of the Great Men of To-Day? Here is a Real Test.

THE above four diagrams represent incomplete pictures of four of the world's greatest men—men you read and hear about every day of your life. Complete the four pictures by tracing from number 1 to 2 to 3 to 4, and so on until the pictures are finished and the faces of these great living men will be revealed to you so that you should quickly recognize them. Can you make them out?

Below each picture in jumbled letters is the correct name of the great man represented in the diagram above it. Unscramble the letters of his name so that you can correctly name him. In the far column will be found a list of a few of the world's outstanding great men. This list may prove of service to you.

The best completed pictures with the names correct can win $510.00 in cash. The completed pictures must be clipped from this paper and attached to a separate sheet containing the names of the great men represented by the diagrams, together with complete name and address of contestant in the upper right-hand corner of paper. Complete list of grand prizes to be awarded is shown in the next column.

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This great contest is being conducted by the Continental Publishing Company, Limited, one of the largest and best-known publishing houses in Canada. That is your guarantee that the prizes will be awarded with absolute fairness and squareness to you and every other contestant. Frankly, it is intended to further introduce EVERYWOMAN'S WORLD, Canada's Greatest Magazine. You may enter and win the best of prizes whether you are a subscriber to EVERYWOMAN'S WORLD or not—and moreover, you will neither be asked nor expected to take the magazine or spend a single penny of your money in order to compete.

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Use only one side of the paper that contains names of the great men represented by the pictures, and put your name and address (stating Mr., Mrs. or Miss) in the upper right-hand corner. If you wish to write anything but your answers, use a separate sheet of paper. Attach this to your completed pictures clipped from this paper.

Three independent judges, having no connection whatever with this firm, will award the prizes, and the answers gaining 300 points will take the First Prize. You will get 25 points for every picture completed correctly and 25 points for every name solved correctly. 15 points will be awarded for general neatness, style, spelling, punctuation, etc., 10 points for hand-writing, and 75 points for fulfilling the conditions of the contest. Contestants must agree to abide by the decision of the judges.

The contest will close at 12 o'clock noon, August 30th, 1919, immediately after which answers will be judged and the Prizes awarded. Address your answers to-day to—**Famous Folks Competition, Continental Publishing Company, Limited Continental Building, Dept. 10 TORONTO, ONT.**

A FEW NAMES OF GREAT MEN LIVING TO-DAY

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Herbert C. Hoover
G. H. Roberts
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Woodrow Wilson
Georges Clemenceau
Raymond Poincare
Stephen Pichon
David Lloyd George
Samuel Gompers
Lord Robert Cecil
Sir Eric Geddes
Sir Robert Borden
Thomas Alva Edison
Vittorio Orlando
Sir David Beatty
Col. William Avery Bishop
Ignace Paderewski
General Jan C. Smuts
General Louis Botha
E. K. Venizelos
General Sir Arthur Currie

want to be somebody's ideal!" He was eager, ardent. "Am I nearer?" he demanded. "Do I measure up, fighter.

She looked up at him woefully, eyes enormous in her lovely wan face. "Am I anything to measure up to?" she faltered. Head drooping, she told him how James Marrow had bought most of her clocks from kindness, and how she had secrificed the rest. Head lifting, she told him, in her soft, simple voice, how she had reached the end of her world.

Then the handsome, tanned young gentleman looker in agitation at her, and in a burst of emotion kissed her hands. "Why, fighter! I thought you self-sufficient as a goddess! A slim Amazon, delighting in your two-handed fight! And you've needed me! You've suffered!" His kisses on her hands were contrite.

In utter confusion she pulled her hands from him—to hide her face again in the open volume of his verses on the ancient clock-counter.

He looked with a quickened glance at the volume. Color boomed up under his tan, and his mouth quirked. "The orioles and sunshine still sing to me," he lauaghly admitteed, and pulled a batch of manuscript from the pocket of his corduroy trousers. "Here's doggerel for the trench-fighters and the fellows on the ships, verses to make them think of their beloved women." His words slowed, full of melody. "Verses, inspired by 'la petite horlogere!' " He laid the manuscript on the clock counter, caught Bleutte in his arm. "I love you!" he said, his eyes claiming her.

Bluette closed her eyes. "God is with us," she whispered. "He is awake and watching."

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LARGER VIEWPOINT URGED UPON WOMEN

The meeting of the St. John Branch of the Women's Institute recently held in the Congergational church hall was not only an instructive and helpful one, but was also especially enjoyable because of the musical selection which were part of the programme. There was a large attendance of members and the president, Mrs. J. W. V. Lawlor, occupied the chair.

In her opening address Mrs. Lawlor spoke of the progress made in enrolling the desired 1,000 members and urged all of the present members to bring others in order that the institute would have substantial backing and be able to demand improvements and get them. The question of a suitable meeting place for the institute was discussed and it was decided to leave this matter in the hands of the room committee.

A letter was read from Miss McCann, superintendent of the Women's Institutes for the province, in which she congratulated St. John on the formation of a Woman's Institute and impressed the greatness of the need for having such an organization for the betterment of the home and for bringing information to the aid of women's work.

Mrs. Lawlor outlined some of the topics which will be brought up for discussion at future meetings, among whic hwere the housing problem and explanations of federal and civic laws for the better understanding of women. She said that she hoped at the next meeting a lecture on criminal laws affecting women would be delivered.

The meeting endorsed an editorial which appeared in a local paper advocating the rebuilding of the court house in such a manner as to provide accommodation for a meeting place for women's societies.

A resolution was passed unanimously which stated that the institute strongly urged the wrapipng of bread in waxed paper, more especially as a health measure after the recent epidemic of influenza. A copy of the resolution will be sent Hon. Dr. Roberts.

It was also agreed that the meetings of the institute would in future commence with the singing of O Canada.

In her closing remarks, Mrs. Lawlor appealed to the women to broaden their viewpoint, not only to take an interest in their homes, which was one of their highest privileges, but to take an interest in the welfare of the community, and thereby improve both themselves and the community.

Vocal solos were given by Mrs. Long and Miss Anderson and Mrs. A. C. Wilson gave a recitation, all being heartily aplauded, and the meeting closed with the singing of the National Anthem.

Linoleum will keep bright and last longer if you apply white shellac with a clean paint-brush two or three times a year. Linoleum should be clean and dry before shellac is put on and be careful not to lap the strokes.

We have been using MINARD'S LINIMENT in our home for a number of years and use no other Liniment but MINARD'S, and we can recommend it highly for sprains, bruises, pains or tightness of the chest, soreness of the throat, headache or anything of that sort. We will not be without it one single day, for we get a new bottle before the other is all used. I can recommend it highly to anyone.

JOHN WALKFIELD.
La Have Islands, Lunenburg Co., N.S.

RESOLUTIONS PASSED AT THE N. S. FARMERS 'ASSOCIATION

(Continued from last issue.)

Whereas the market in the Maritime Provinces for such produce as meat, buter and eggs is very limited, thus causing the glutting of markets at certain times with consequent heavy losses to the producer, and

Whereas the prices by the farmers are not much more than half what they would be with proper cold storage facilities and access to export markets, and

Whereas in the Maritime Provinces the production of beef, bacon, mutton, dairy products and eggs is only a fraction of what it should be, and

Whereas the development of an export trade is the greatest incentive to production, and

Whereas its geographical situation makes Nova Scotia unsurpassed among all the provinces of Canada for export trade, and

Whereas Halifax harbor is one of the finest in the world and offers unexcelled shipping facilities all the year round, and

Whereas Halifax is the Atlantic terminus of the Canadian Government Railway system, and

Whereas this whole problem can only be solved by the erection of a cold storage plant with stockyards and abattoir of sufficient capacity to provide for present needs and future development in the Maritime Provinces as well as the rest of Canada.

Therefore resolved that the Nova Scotia Farmers' Association do hereby petition the Hon. the Minister of Agriculture to appropriate a sufficient sum of money to establish a Cold Storage plant with all necesary equipment at Halifax. Mover, J. Howe Cox; seconder, Wm. O'Brien.

Resolved that the Nova Scotia Farmers Association memorialize the Provincial Government to erect either at the Agricultural College, the Provincial Building, or other appropriate place a fitting tablet commerative of John Young on this, the hundredth anniversary of the appearance of a series of epoch making leters written by him under the pseudonymn of Agricola, which letters were responsible for a development of agriculture in Nova Siotia the influence of which is still apparent throughout the Province of Nova Scotia and to perpetuate his memory by a re-publication of the said letters. Mover, Wm. O'Brien; seconder, Jas. Sedgwick.

Resolved that the N. S. Farmers' Association now assembled in convention at Truro, March 14th, -919, endorse the recommendation of Live Stock Commissioner re the Grading and Inspection of Wool for export and would strongly urge that such legislature be enacted in order to standardize and maintain the reputation of Canadian wool. Moved by S. A. Logan; seconded by Wm. O'Brien.

Resolved that the Nova Scotia Farmers' Association here assembled in anual convention at Truro, March 12th, 13th and 14th, 1919, representing all farmers of Nova Scotia, place itself again on record as being absolutely opposed to the passing of the so called "Daylight Saving Bill," in Canada during the year 1919. As being detrimental to the interest of Nova Scotia farmers and discount any attempt to pass such a Bill because the United States of America, a foreign country, sees fit in its wisdom to pass such a measure, which is opposed by farmers in that country.

And that a copy of this be at once telegraphed to Sir Thomas White, Acting Premier of Canada, and that a copy be at once mailed to each of the Nova Scotia members at Ottawa. Manning Ells, mover; H. S. Kennedy, seconder.

Long resolution asking government to take C. B.. Railways over and make

Abraham Lincoln

who was raised on a farm and had a deep sympathy with farmers, declared a tariff producing sufficient revenue for the support of the general Government and adjusted to protect American industry was "indispensably necessary to the prosperity of the American people."

"I believe if we could have a moderate, carefully adjusted protective tariff, so far acquiesced in as not to be a perpetual subject of political strife, squabbles, changes and uncertainties, it would be better for us."

"The abandonment of the protective policy by the American Government must result in the increase of both useless labor and idleness and so in proportion must produce want and ruin among our people."

Under a national tariff, the United States has prospered and become great. A national tariff is essential to the development of the Dominion. Canada cannot exist if legislation for one section is stretched to a point where it ruins another. A tariff is necessary to our industrial development. Industrial development is necessary to agricultural and general prosperity.

Under Free Trade—Where will the Revenue come from?

Canadian Reconstruction Association

EXECUTIVE

Rt. Hon. Lord Shaughnessy, K.C.V.O. *Honorary President* — Sir John Willison, *President* — C. H. Godfrey, Montreal, W. K. George, Toronto, W. J. Bulman, Winnipeg, *Vice-Presidents*

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This is most important—Use

Windsor Dairy Salt

Made in Canada

THE CANADIAN SALT CO, LIMITED

253

FOR SALE

Selected Seed Potatoes

from the famous

Green Mountain and Irish Cobbler Strains grown by the late C. Fred Fawcett

This stock has lately won the two first prizes at the Potato Growers' Competition held at Woodstock, and open to the Province of N. B., with a score of 98 and 96½ out of possible 100.

Also have

Proven Pride, Beauty Hebron, Empire State and Carmen No. 1

Careful selection. Prompt shipment. Invest in a few bushels and be convinced how good seed improves the crop. Prices on application.

W. W. FAWCETT,
Successor to C. Fred Fawcett
Upper Sackville, N. B.

FOR SALE
Canadian Root Seed.
Raised from the best stock by Dominion Experimental Farms.
SUPPLY LIMITED

Prices as follows:—

Mangels—		
50 lbs. and over	55c.	lb.
200 " "	50c.	"
1000 " "	45c.	"
2000 " "	43c.	"
Swede Turnips—		
50 lbs. and over	85c.	lb.
100 " "	80c.	"
500 " "	75c.	"
1000 " "	73c.	"
Field Carrots—		
5 lbs. and over	90c.	lb.
25 " "	85c.	"
100 " "	80c.	"
200 " "	78c.	"

Freight paid and sacks free.
Net payment bank draft 60 days from date of invoice and 5% allowed for cash 10 days from date of invoice.
Particulars about varieties on application.

Dr. M. O. MALTE,
Central Experimental Farm,
Ottawa, Ont.

SILK—All Fancy Colors—

Large pieces. Just what you need for making Crazy Quilts, Cushions, etc.; large bundle 50c., or for $1.00 we will send more than double the quantity and a large packet of **SEWING EMBROIDERY SILK FREE.** We pay postage. Order now and receive our catalogue free. UNITED SALES CO., Dept. 9, Station B., Winnipeg, Man., Canada.

Butter Parchment at Farmer Office

part of the Canadian National Railwys. Read and passed.

Resolved that in the opinion of this Association First Prize animals in the various sections at County and District Exhibitions may be compelled to compete at the Provincial Exhibition at the discretion of the Superintendent of County and District Exhibitions and that the Provincial Legislature be requested to enact legislation to provide ways and means of defraying expenses in connection with such exhibits.

Further resolved that this Association request the Provincial Exhibition Commission to hold their exhibition at such dates as would make such arrangements convenient. Moved by H. A. Moffat; seconded by H. W. Corning.

Resolved that the Nova Scotia Farmers Association in annual session at Truro, March 13th, 1919, claim that the time has come when all farm machinery, including gasoline engines, motor truck and all breakable and wearing parts of farm machinery, should be standardized and that the Dominion Government at once take steps to have manufacturers of farm machinery, motors, etc., meet Dominion Government mechanical experts to carefully classify all farm machinery, motors, etc with a view of eliminating many makes of machinery which now duplicate one another, and standardize the best styles of labor saving farm machinery. Mover, H. S. Kennedy; seconder, Wm. O'Brien.

Resolved that a Committee of three be appointed to draw up regulations for the proper control of scrub sires, particularly bulls and stallions, and to ask the Government to give effect to these recommendations. Mover, H. McPherson; seconder, A. N. Griffin.

We, the members of the Farmers' Association of Nova Scotia in annual convention at Truro, N. S., in March, 1919, are cognizant of the fact that the farmers are not adequately represented in the Government of our Country, and that such representation is very important during the period of readjustment through which this country is passing, in order that the Farmers' interest should be carefully safeguarded.

Therefore, resolved that we should organize for the purpose of securing better representation in Parliament. That we endeavor to have a Farmer electd in each county where farming is the chief industry. Mover, Gup P. Fuller; seconder F. H. Crane.

CO-OPERATIVE DAIRYING A SUCCESS

(Continued from page 712)

they should be milked twice a day at least for the full ten months and milked dry. I often think there must be a lot of very careless milking done in this country as I seldom get a boy or man that can at first milk all the cows in the herd dry even though they have had years if experience. While they will milk the soft-uddered easy ones alright, they generally fall down on any one who happens ti be a meaty-uddered, heavy producer. Some qparters will be fairly dry and others may contain a pint or more after they think they have finished. They don't seem to have been taught to wring a cow out dry and to reach up after the last of it. A good milker in a large dairy herd is a more valuable man that we generally cinsider him and it will pay every owner to go over the cows pretty often after the new hired man, even though he be a thorough man in every other respect. Dairying requires probably a greater measure of skill than any other line of stock farming and will pay handsomely for the same whenever given.

W. M. LEA,
Victoria, P. E. I., March 24, 1919.

Something New by Ingersoll, Maker of Ingersoll Watches

Ingersollite

Real radium makes the Ingersollite glow in the dark and guide you straight to the chain or switch to—turn on the light. No groping—no colliding with furniture. Easy to attach—No tools needed. Can be used on chains, key switches, gas jets or oil lamps.

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Ingersoll Watches

The name Ingersoll on the dial guarantees you a watch that has given a better time-keeping service to the people of the world than any other watch, at any price.

Made in Canada, sold at prices to suit every pocketbook. Every watch guaranteed by the maker.

Low cost—fine appearance—sturdy workmanship—correct time keeping. These are the qualities that are built into every Ingersoll watch and that are responsible for 50,000,000 of them being bought, by people of every nation, in the last quarter of a century.

See all the Ingersoll Models at your dealer's.

ROBT. H. INGERSOLL & BRO.,
128 BLEURY STREET, - - MONTREAL.

FEEDING AND CARING FOR A FLOCK OF PURE BRED SHEEP

(Experimental Farms Note)

If the greatest profit is to be realized from a flock of pure bred sheep, they must receive the very best feed and care the shepherd can give them. Not that they of necessity require greater care and feed than the grade, but the fact that the breeder of a pure bred flock expects to put the most of his surplus stock on the market as breeders, means that he must feed the best and give the best care possible, that his stock may reach its best development.

At the Experimental Farm, Nappan, this has been well brought out in the feeding and caring of the pure bred flock. It was found that even during the summer season the pure bred flock could not be neglected, otherwise the results would be bound to show in the following seasons increase and development of the young.

The flock must have a good pasture with not too rank a growth; preferably a short, thick bottom growth with an abundance of clover and plenty of good running water to which the sheep can easily get. Sheep take much more water than the average farmer would think. This holds true, especially in winter.

Just before the breeding season the ewes should be culled; all undesirables taken out; and a certain period given between weaning and breeding time for the ewes to get into condition again. Best results are obtained where the ewes are turned in a nice colver field and flushed just before mating season. It is found that where ewes and rams are in the best of health and condition a greater percentage of twins and triplets are dropped. All ewes should be tagged before the mating season. The best time to breed is in the fall. If you have warm quarters for the ewes and lambs it will pay to have the lambs dropped early; otherwise it is not advisable to do so. It is also found that a small flock of twenty to twenty-five per pen is better than a large one. When ewes go into winter quarters they should be supplied with good, well-cured clover hay. The next best is a mixture of clover and timothy. Pulped turnips at the rate of from 2½ to 3 pounds per head per day should be given up to within a month of lambing, with the addition of ½ to 1 pound of a meal mxture (100 oats, 100 bran and 50 oil cake). This will keep the ewes in a good, thriving condition. For the best results, ewes should not be too fat especially at lambing time. We have had our heaviest losses from over-fat ewes. Just previous to lambing (say about a month) the turnips are gradually cut down to nothing. The percentage of bran, if it is good, is increased slightly until after the lambs are dropped. Then the oats are increased, as there is nothing like good oats to stimulate the milk flow. Salt should be supplied at all seasons of the year. A careful watch over the flock at lambing time will often save the lives of many lambs that will, at the end of six or seven months, be worth $25.00 to $30.00 each.

AGAINST EXPRESS RATE INCREASES

(Continued from page 713)

A Creamery

Interest in the farming sections of the country is diversified.

The Creamery management find it extremely difficult to keep the creamery popular.

The creamery could not compete in prices with B on a butter fat basis.

PRIZE WINNERS AT THE KINGS COUNTY SEED FAIR

The Sixteenth Annul Kings County Seed Fair held under the auspices of the Sussex and Studholm Agricultural Society in the Agricultural School, Sussex, on March 22nd, was the best in the history of Sussex Seed Fairs. S. J. Moore, Maritime Representative of the Federal Seed Division, placed the awards. The increased interest in the production of the various garden and and farm seeds is quite noticable. Mr. Moore, in the course of a few remarks after he had completed judging, pointed out that as seed fairs and field crops competitions were instituted for the stimulating of a greater interest in the production of good seed, the time has arrived when the growers must sow registered seed, in order to take part in competitions. This rule will come into effect next year in New Brunswick. It will be well for our interested growers to be governed accordingly and make provision for the securing of sufficient registered seed to start them on the right track.

The prize winners and the number of entries in the respective classes were as follows:

Wheat, White or Red Fife, 5 entries.—1, W. E. Wallace & Son, Penobsquis; 2, McIntyre Bros., Sussex Corner; 3, W. J. King, Smiths Creek; 4, H. S. Secord & Son, Penobsquis.

Wheat, any other variety, 7 entries.—1, W. H. Vening, Sussex; 2, H. B. Parlee, Sussex; 3, W. F. Mosher & Son, Sussex; 4, H. B. Parlee.

Barley, any variiety, 7 entries.—1, H. B. Parlee; 2, W. H. Venning; 3, W. J. King; 4, W. B. Tamlyn, Newtown.

Oats, and white variety, 15 entries.—1, W. F. Mosher & Son; 2, 4 and 7, W. H. Venning; 3 and 8, W. B. Tamlyn; 5, W. E. Wallace & Son; 6, H. S. Secord & Sons, Penobsquis.

Oats, Black, 2 entries.—1, A. J. Marr, Newtown; 2, H. R. McMonagle, Sussex Corner.

Buckwheat, rough, 6 entries.—1, W. H. Venning; 2, J. F. Roach, Sussex; 3, H. B. Parlee; 4, D. S. Law, Head of Millstream.

Buckwheat, smooth, 2 entries.—1, H. B. Parlee; 2, D. S. Law.

Peas, field, 2 entries.—1, McIntyre Bros.; 2, W. J. King.

Beans, white, 2 entries.—1, H. B. Parlee; 2, J. Titus Barnes, Apohaqui.

Corn, yellow, 1 entry.—1, H. B. Parlee.

Corn, sweet, 2 entries.—1, H. B. Parlee; 2, H. R. McMonagle.

Clover Seed, Common Red, 2 entries.—1, W. H. Venning; 2, Byron McLeod & Son, Penobsquis.

Clover Seed, Alsike, 1 entry.—1, H. W. Venning.

Timothy Seed, 4 entries.—1, McIntyre Bros.; 2, W. H. Venning; 3, D. S. Law.

Potatoes, Green Mountain type, 8 entries.—1, McIntyre Bros.; 2, H. B. Parlee; 3, W. E. Wallace & Son; 3, W. F. Mosher & Son; 5, H. R. McMonagle; 6, Byron McLeod & Son; 7, D. S. Law.

Potatoes, Irish Cobbler type, 6 entries.—1, H. B. Parlee; 2, H. R. McMonagle; 3, W F. Mosher & Son; 4, McIntyre Bros.; 5, W. E. Wallace & Son; 6, H. R. McMonagle.

Potatoes, any White long variety, 1 entry.—H. R. McMonagle.

Potatoes, any Rose variety, 1 entry.—1, McIntyre Bros.

Potatoes, and Red variety, 1 entry.—1, H. R. McMonagle.

Potatoes, any Dark variety, 1 entry.—1, W. F. Mosher & Son.

Six Turnips, any variety for seed growing, 9 entries.—1, H. S. Secord & Son; 2, R. E. McAulay, Sussex; 3, H. R. McMonagle; 4, McIntyre Bros.

Turnip or Swede Seed, 8 entries.—1, R. E. McAuley; 2, McIntyre Bros.; 3, John Knox, Sussex; 4, H. B. Parlee.

Best colection Vegetable Seeds, 3 entries.—1, McIntyre Bros.; 2, H. R. McMonagle; 3, H. B. Parlee.

Oats, from standing Crops competition of 1918, 7 entries.—1, W. F. Mosher & Son; 2, W. H. Venning; 3, H. S Secord & Son;; ', W. E. Wallace & Son.

Wheat, from Standing Crops Competition of 1918, 7 entries.—1, W. E Wallace & Son;2, H. B. Parlee; 3, W. F. Mosher & Son; 4, T. J. Davis, Smiths Creek.

The Auction Sale of first prize grain brought the following prices:,

1 bus. White Fife Wheat	$4.25
1 bus. Marquis Wheat	4.00
1 bus. Six Rowed Barley	2.75
1 bus. Oats, O.A.C. 72	3.00
1 bus. Black Oats	2.75
1 bus. Rough Buckwheat	3.00
1 bus. Timothy Buckwheat	3.30
½ bus. Field Peas	2.75
	$25.80

Total Prize Winnings

D. S. Law	$ 4.00
H. B. McMonagle	11.50
W. E. Wallace	13.25
McIntyre Bros.	17.75
H. Secord & Son	4.50
W. J. King	3.50
W. F. Mosher & Son	12.75
W. H. Venning	28.75
T. J. Davis	.50
H. B. Parlee	27.25
W. B Tamlyn	2.75
A. J. Marr	5.50
J. Titus Barnes	1.50
J. H. Manchester	2.00
N. W. Eveleigh	1.50
Byron McLeod & Son	2.75
R. E. McAuley	3.00
John Knox	.75
J. Frank Roach	2.00
	$146.50

IF YOU WANT AUTO TIRES

If you want auto tires for small cars it will be well for you to write the Maritime Farmer. We have a splendid non-skid tire to offer our subscribers. It is well worth investigating. The tire is perfect. It is not a second and has a good guarantee behind it. Before you buy new tires for your old car or spare tires for your new car, drop us a line. We have something to tell you which will be of interest. It will pay ou to do this.

MARITIME FARMER REPRESENTS POULTRY ASSOCIATION

At a recent meting of Nova Scotia Poultry Association it was unanimously decided to ask the Maritime Farmer to act as the official organ of the organization. Arrangements have been made whereby the doings of the various branches of the N. S. Poultry Association will be chronicled in the columns of the Maritime Farmer. Every effort will be made to keep branches of the Association in touch with the progress each is making in promoting poultry interests. In other ways, too, the Maritime Farmer hopes to serve the Association.

Let This Engine Save Money on Your Farm

Money saved in labor means greater profits on production. That is the purpose of the "Z" Engine on your farm. It means work done quicker, better and at less cost than by the old methods.

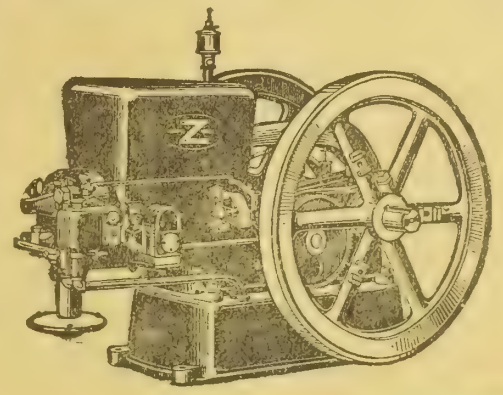
A 6, 3 or 1½ Horse Power

"Z" Engine

does its work day and night at the lowest upkeep cost because of its simplicity of construction and its fuel economy.

No matter for what purpose you want power on your farm investigate the "Z" first—the engine that meets the farmer's needs.

Your local dealer can tell you about the "Z". He sells it; he is the direct representative of the manufacturer and he, personally, stands behind each engine he sells to see that the purchaser gets the fullest satisfaction. Ask your dealer or write today to our nearest office.



3

The Canadian Fairbanks-Morse CO., LIMITED

St. John Quebec Montreal Ottawa
Toronto Hamilton Windsor

HINTS FOR MOTORISTS

by ALBERT L. CLOUGH — Editor Motor Service Bureau Review of Reviews...

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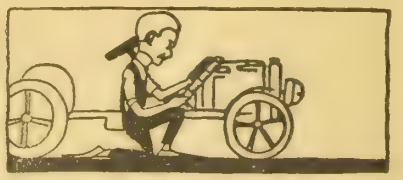
COMPRESSION LEAKS AND ENGINE PERFORMANCE

"Sweet Running" Presupposes Uniform Action Among Cylinder

Smoothness of engine operation is dependent upon uniformity of performance of the individual cylinders. Lack of such uniformity is very noticeable in a four cylinder engine, somewhat less so in a six and comparatively unobtrusive in an eight and twelve. It is more noticeable in all engines as the speed is less and the work is harder. Unequal distribution of the charge and inexact valve action is responsible for considerable such non-uniformity of action among cylinders and the "raggedness" in performance, which it brings about, but differences in the gas tightness of individual cylinders, under compression is the most common cause of such "lame" action. The weak cylinder so often complained of, which causes the characteristic "halting" action so noticeabel during hard, slow pulling is usually a cylinder with very imperfect compression and indeed in extreme cases, the presence of such a cylinder may actually cause a knocking sound—the momentary reduction in crankshaft speed, while it is firing, being sufficient to cause chatterng of the timing gears and the taking up of lost motion in bearings and other parts, similar to that noticed when an actual miss occurs. Cylinder leaks usually come on gradually and, unless compression tests, with the hand crank, are occasionally made, the cause of failing power and lack of "sweet" action may not be realized for some time. Leaky valves, badly fitted pistons and rings and lack of tightness of valve cap, spark-plug and head gaskets all conspire to produce weak compression. Such leaks act in several ways to reduce the activity of a cylinder. During the suction stroke, burned gas may be drawn in through a leaky exhaust valve or past the piston and thus foul the charge. During the compression stroke, a part of the charge taken in is returned to the intake or sent into the exhaust, the crank-ease or the external air reducing the charge which is fired to the proportions of a much throttled charge. Finally, during the power stroke, the escape of gases, reduces the working pressure upon the piston and consequently the power developed. A cylinder suffering with such ailments, necessarily "lags" and the even purring of its engine is destroyed, especially when hard work is called for. If an engine is to be kept in tune and if operative economy is sought, the compression of each cylinder should be frequently tested and, if found wanting, the appropriate remedy should at once be applied, whether it be the grinding in of valves, the provision of tighter rings or the renewing of gaskets under leaky parts.

EFFECT OF SHORT PISTONS ON COMPRESSION

R. H. P. writes: I am rebuilding an engine of obsolete model and the only pistons I can obtain for it are ⅛-inch shorter than they should be, from



wrist pin to head. Using these will, of course, reduce the compression. How much if any will the power be diminished?

Answer: You do not mention what the stroke is. The effect upon compression of this eighth-inch difference will be less in proportion as the stroke is long and vice versa. If the stroke is fairly long and the engine was built sometime ago, when high compression ratios were in vogue, these pistons may prove satisfactory. If the flanges at the bottom of the cylinders are thick enough to possess some excess strength you can perhaps have them accurately milled off slightly, which will tend to raise the piston travel. In some engines having flat piston heads, plates have been riveted on them to decrease the compression space, but this method has some objections. Why don't you try these pistons and, if they make the compression too low, adopt some of these expediments? Quite likely they may work well as they are.

SLOW LEAKS IN TIRES

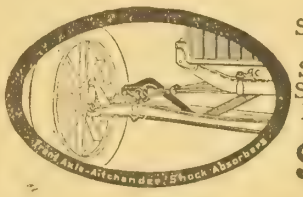
S. C. asks: Why is it that I have so much trouble from the tires of my car getting soft? It seems to me that I pump them twice as often as other

You Save Your Springs, Engines and Tires—You Get Easy Comfort in Riding—when you equip your Ford with

H&D AITCHANDEE SHOCK ABSORBERS

"Make Rough Roads Smooth"

Easy to attach. No holes to bore. Weight, 20 lbs. per set. This is the original cantilever shock absorber, Canadian Patent 172892. No other can have the same efficiency or give the same easy riding and freedom from jolts, jars and side-sway.



Single Arm Style, Set of Four $10

Twin Arm Style, Set of Four $12

Make your Ford ride like a limousine. Over 200,000 in use to-day. Remit by Money Order or Postal Note. Put a set on and try them for 30 days. Money back if you are not satisfied.

Richards-Wilcox Canadian Co. Limited
308 Chelsea Green
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MALTESE CROSS TIRES

Maltese Cross Tires are the individual handiwork of expert Craftsmen, as proud of their workmanship as were the Craftsmen of the Guild of the middle ages..

Ask Your Dealer to Show You the New Non-Skid Tread

TRADE MARK

Gutta Percha & Rubber, Limited
Head Offices and Factories, TORONTO
BRANCHES: Halifax, Montreal, Ottawa, Toronto, Ft. William, Winnipeg, Regina, Saskatoon, Lethbridge, Calgary, Edmonton, Vancouver, Victoria.

Greater Strength and One-Quarter the Cost

FOR the heavy work rope traces are stronger and will wear longer. In rough work leather traces are stiff and get scraped; or they rip. Griffith Giant Rope Traces are flexible, can be slipped on in a jiffy and will not break. Remember, they are, by actual service tests, proven stronger than leather.

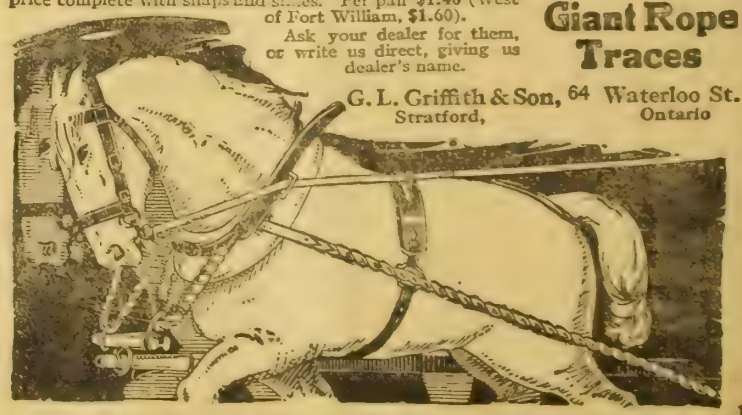
Giant Rope Traces are complete with malleable iron ends and electrically welded steel chains; either 7/8 inch for farming or 1 inch for lumbering. Price complete with 7/8 inch rope, set of four $6.00. (West of Fort William $6.50) 1 inch size $6.50. (West of Fort William $7.00.)

Griffith's Giant Yoke Ropes to replace leather pole-straps; price complete with snaps and slides. Per pair $1.40 (West of Fort William, $1.60).

Ask your dealer for them, or write us direct, giving us dealer's name.

Griffith Giant Rope Traces

G. L. Griffith & Son, 64 Waterloo St. Stratford, Ontario



people. There seem to be no real punctures.

Answer: Most likely because the plungers in the valves are leaky. These have to be changed frequently,

as the seat is very small and wear out rapidly. The old plunger is removed by screwing it out, using the slotted end of the valve cap as a spanner and the new plunger is screwed into place with the same tool. It should be seated firmly and a cap, with a good rubber packing, should be used over it. It is possible that some of your inner tubes have developed very slight leaks and you can assume this to be the case, if renewing the valve plungers does not prevent the premature deflation of your tires.

ELECTRIC STARTER HINTS

Careful Usage Reduces Repairs Here As Everywhere Else

The following suggestions relate to the use of starters, especially to those in the operation of which a motor gear has to be meshed with the flywheel gear: Do not force the starting operation by jamming down the pedal abruptly. Do it gently, especially at the last of the movement and, if the gears do not engage readily, let the pedal back and go through the operation again. Avoid holding down the pedal atfer the engine is running under its own power, as the over-running clutch mechanism which is then called into action, is not intended for anything but momentary operation. Under no conditions operate the starter, when the engine is running, as the bringing together of the gears under these conditions will most certainly burr or strip the teeth. This caution may seem unnecessary, but a meddlesome person or a careless operator may do it One may forget that the motor is running or, in a very noisy place, may think that it has stopped when this is not the case. A touch upon the accelerator will always indicate whether or not the engine is in operation. It is inadvisable to operate the starter with the spark too far advanced, even though a safety device is provided to guard against damage from "back kicks." Throwing out the clutch, considerably lessens the load on the starter motor, when a car is cold, particularly if the gearbox lubricant is very stiff. Do not allow the mechanism of the motor-pinion engaging drive to become sluggish in action from the presence upon it of gummy oil. It should work freely. Starter connections, the switch, commutator and brushes have to carry very large currents and they should be kept tight and clean at all times. Be sure that the alignmetn of the starter-pinion wtih the flywheel gear does not become faulty. Do not make the starter spin the motor more than half a minute at a time. Verify carburation and ignition conditions before trying it again.

EXCESSIVE FUEL SUPPLY

J. H. G. asks: Can you tell me the cause of the following trouble: My en-

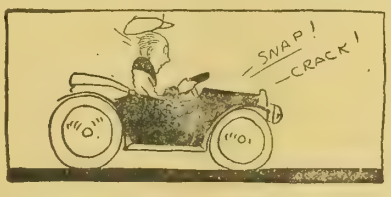
gine will not speed up and it seems to be choked all the time? It does not fire regularly and, thinking the spark was at fault, I took out the plugs, and found them badly sooted, but the spark proved to be as strong as ever. The carburetor has had nothing done to it recently.

Answer: It looks as though your engine is getting too much gasoline and not enough air. If you carburetor has an auxiliary air valve, designed to open as the engine speeds up, you better inspect it and see that it is not stuck in the closed position. If it is, this accounts for your trouble. Many cars have a strangler or choker, which is used to close the carburetor air-intake when starting and perhaps the mechanism which operates this has gone wrong, so that it stays closed. Be sure that this air passage is free. Sometimes there is valve trouble in the vacuum feed tank which causes gasoline to be sucked directly into the intake manifold. Possibly the needle-valve adjustment of your carburetor has worked loose and opened the spraying nozzle too wide.

LOST MOTION IN TRANSMISSION SYSTEM

A. W. P. writes: Sometimes, when I start my car into moton, I notice quite a loud "snap" and a slight jerk, neither of which ever occurred until lately. Does this indicate that something is wrong?

Answer: The cause of this is well worth looking into and removal before its effects become any more marked. Probably, lost motion has developed in some of the transmission parts as the result of wear. So long as the engine is delivering power to the wheels, this looseness is kept taken up but, when the brakes are applied, it is developed so that, when you apply the clutch, certain parts move



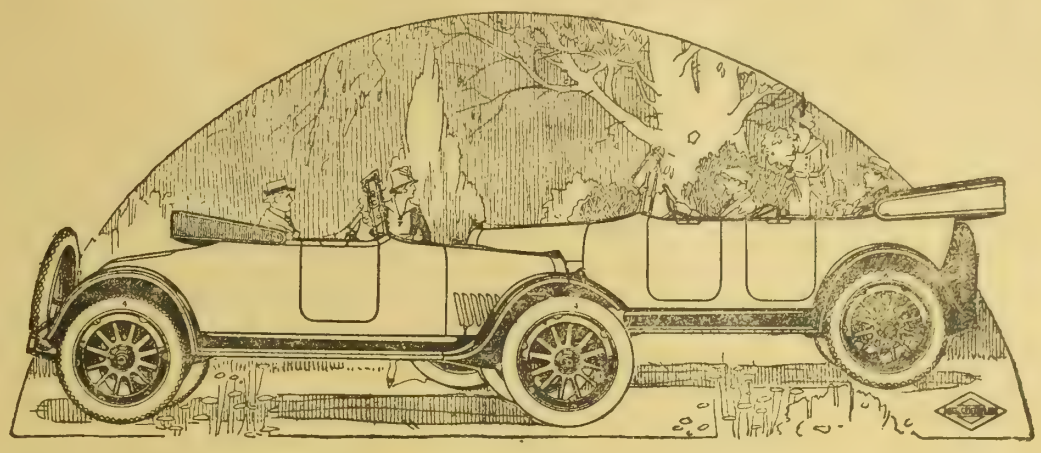
freely for a short distance and then take up the driving load suddenly with the noise and jerk which you notice. If you can expose the driven clutch member to view, try pushing the car alternately back and forth upon the garage floor and see if there is a period in the car movement when the clutch does not revolve. If there is, there is lost motion in the transmission, universal joints, final drive gears, driving wheel connections or elsewhere, which ought to be removed.

MAKING CRANKSHAFT REPLACEMENT

S. J. G. writes: The crankshaft of my 1916 —— car is broken. Please tell me how to remove and replace it myself. Is it necessary to get a new shaft or can the old one be repaired?

Answer: Unless you have regular repair shop facilities, this will be a pretty hard job. The best way is to lift the power plant right out of the frame, after breaking all the connections, and rest it upon convenient horses. Remove the clutch and transmission and detach the main and connecting rod bearings, which will free the shaft and fly-wheel. Detach the latter and fit it to the new shaft. You will have to "scrape in" the main bearings to fit them properly and then assemble. Crank shafts can be electrically butt welded, but special fittings and very accurate workmanship are required and the process is expensive and none too certain of success. We advise you to buy a new shaft. Perhaps you can obtain one in good condition and at a reasonable price, from one of the wrecking companies. As we say above, this is really a job for the professional mechanic.

NEW GASOLINE AND TIRE MILEAGE RECORDS
ESTABLISHED BY THE
McLAUGHLIN
LIGHT-SIX



Economy and stability of the McLaughlin Light Six is due to the fine balance struck between power and burden. There is not a pound of unnecessary weight nor is it impoverished of a pound that could contribute to its efficiency or its life.

Power, with the famous forty-four horse power valve-in-head Light Six engine, and roomy body in open and closed models set a new standard of value in Canadian built cars. Owners of this model get from 25 to 30 miles to the gallon of gasoline and from 8,000 to 12,000 miles on tires.

SEND FOR CATALOGUE

The McLAUGHLIN MOTOR CAR CO., Limited
OSHAWA, CANADA

See the McLaughlin models at the nearest McLaughlin Show Rooms

MARKETS.

CHARLOTTETOWN

Beef, carcass, 16c to 18c.
Veal, carcass, 12c to 14c.
Hogs, market higher; selects 19½c to 20c.
Lamb, carcass, 22c.
Mutton, carcass, 16c to 18c.
Beef Hides, 16c lb.
Sheep skins, $2.50 to $3.00 each.
Calf Skins, 30c lb.
Potatoes, market dull at 40c to 50c.
Carrots, very little demand and few offered. Normal price, $1.25 to $1.50 per 100 lbs.
Turnips, limited supply and demand, 20c to 25c bush.
Parsnips, none offering. Normal value $2.00 per 100 lbs.
Oats, market steady at 60c to 65c bush.
Cornmeal, $4.00 per bag.
Bran, $2.25 to $2.50 per bag.
Oatmeal, $5.00 to $6.00 per bag.
Middlings, $2.40 to $2.60 per bag.
Cotton Sed Meal, None.
Oil Cake, $3.60 to $3.75.
Buckwheat, none.
Ontario Flour, $12.00 to $12.25 in wood.
Manitoba Flour, $12.25 to $12.75 in wood.
Chickens, none.
Fowl, none.
Turkeys, none.
Geese, none.
Butter, Creamery, 55c to 60c lb. Market higher.
Butter, dairy, 42c to 45c lb. Market higher.
Cheese, very scarce, 26c to 28c lb.
Eggs, market steady, 35c doz.
Hay, pressed, $17.00 to $18.00 per ton.
Hay, loose, 85c to 95c per 100 lbs.
Straw, Pressed, $12.00 to $13.00 per ton.
Straw, Loose, 55c to 65c per 100 lbs.
March 27, 1919.

THE CATTLE MARKET

Montreal, March 29.—At the Canadian Pacific Live Stock Market the offerings for sale today amounted to 125 cattle, 30 sheep and lambs, 300 hogs and 650 calves. On account of the continued limited supplies of cattle coming forward here, and the scarcity of the top grades a very firm feeling continues to prevail in the market and prices today were fully maintained at the late advance noted. The demand was fair for small lots to meet immediate wants, and with the carryover from Monday and the above number offered, buyers had no difficulty in filling their wants with the quality of stock available, which consisted principally of common and medium grades. An odd good steer sold at $14.50, but the bulk of the trade steers was done at from $9 to $13, while a few choice light butcher's cows brought $11, and the lower grades from that down to $6, and some choice light bulls realized $11, and the commoner stock sold from that down to $6 per 100 lbs. The trade in canning cattle was dull owning to the fact that the bulk of them have been marketed, and the season is now over.

One of the features of the small meat trade was the offerings of a few spring lambs, and as the quality of some of them was choice, weighing from 30 to 40 lbs. each they met with a ready sale at $15 to $16 each. Another feature of this market was the weaker feeling in hogs, and prices were 50c per 100 lbs. lower than on Monday, with sales of selected lots at $19.50, and lots weighing less than 140 lbs. each at $17.50 per 100 lbs., weighed off cars. A few yearling lambs sold at $13 to $15 per 100 lbs. The demand for calves was good, and an active trade was done in this line. The quality of the offerings on the whole was better than they were last week, and as the suply was not in excess of the requirements prices maintained were at from $8 to $15 per 100 lbs., as to quality.

Grow Your Own Vegetables!

There's Money, Health and Pleasure In It

If ever a garden was worth while, it is NOW, when the cost of food is so high. Even a little plot, well cultivated, will supply a most surprising quantity of delicious, healthful food, and reduce grocery bills in a way that will make you smile.

But you should start right—and the first step is the choice of seeds. Buy

EWING'S SEEDS

and you will have gone far toward ensuring generous crops of choice quality.

Ewing's "Early Gradus" Pea

The most popular extra early wrinkled pea. About 30 inches high; bright green pods 4 inches long or more, well filled. Highest table quality. Lb. 50c; ¼ lb. 20c. Sent postage paid — cash with order.

Ewing's Seeds have a 45 year record in Canada that proves them clean, vigorous, true to type, and sure to grow. All the newest strains, as well as the old standbys.

Write for our Illustrated Catalogue, and if your dealer hasn't Ewing's Seeds, order from us direct.

THE WILLIAM EWING CO., LIMITED
Seed Merchants, McGill Street, Montreal. 59

Massey-Harris

For Spring Plowing

You take no chances when you buy a MASSEY-HARRIS PLOW—it has stood the test of time. You get a Plow it is a pleasure to handle, and that does the kind of plowing you can be proud of. It cleans readily, turns and covers perfectly, and gives all-round satisfaction.

The excellent scouring qualities of the Massey-Harris Plows enables you to get on the land and get your ground plowed earlier than with other Plows. This is an important matter, especially in the North-West, where a few days delay may mean the loss of a crop. They are light draft and easy to handle.

Durability is another of the strong points of the Massey-Harris Plows. The improved methods of tempering the Steel Mouldboards and Shares, and of hardening Cast Shares, together with careful erecting and rigid inspection of all Plows, combine to produce a line of Plows which look well, work well, and wear well.

Walking Plows, Riding Plows, Disc Plows, Engine Gang Plows, etc., in many Styles and Sizes.

MASSEY-HARRIS CO., Limited
Head Offices—Toronto, Ont.
Branches at
Montreal, Moncton, Winnipeg, Regina, Saskatoon, Swift Current, Yorkton, Calgary, Edmonton.
Transfer Houses—Vancouver and Kamloops.
Agencies Everywhere

DAIRY PRODUCE TRADE

Montreal, March 29.—The receipts of butter today were 1,254 packages, as compared with 104 for the same day last week, anad 127 for the corresponding date a year ago. The tone of the market remains very firm on account of the continued scarcity and the steady demand for small lots, and sales of the best grades of creamery were made at 59c to 61c per lb. in a wholesale way, and jobbing prices were also unchanged at 61c per lb. in 1 lb. blocks and at 60c in solid packages. An easier feeling prevailed in the New York market on Tuesday which was attributed to the loss of consumptive demand owing to the very high retail prices, and this created a nervous feeling in the trade which resulted in some shading of values. Sales of extra creamery were made at 64½ to 65c, and 93 score at 65½c per lb.

We quote wholsale jobbing prices as follows:
Finest creamery, solids....00c to 60c
Finest creamery, blocks...00c to 61c
Fine creamery, solids.....58c to 59c

The receipts of cheese today were 136 boxes, as against 104 for the same day last week and 98 for the corresponding date a year ago. There was nothing new in the market to note. The demand from domestic buyers for smal lots was steady and sales were made at 27c to 27½c per lb. but apart from this the market was dull.

The following prices are being paid by the Commission:
No. 1 cheese.....25c
No. 2 cheese.....24½c
No. 3 cheese.....24c

New York, March 26.—Butter lower. Receipts, 1,168 tubs. Creamery, higher than extras, 62½c to 63c; creamery extras, 92 score, 61½c to 62c; firsts, 59c to 61c; packing stock, current make, No. 2, 44½c to 45c. Cheese irregular. Receipts, 6,071 boxes. State, whole milk, flats, curent make, specials, 33½c to 34c; do. average run 33½c to 34¼c.

WINNIPEG GRAIN PRICES

Winnipeg, March 29—Messrs. Baird & Batterell wired Shearson, Hammill & Co. the following:

Oats—Market was decidedly weak during the entrie session and, although American corn and oats scored substantial advances during the early part of the session and the local element was bullish, endeavoring to advance prices in this market, in sympathy with the action of American grains, their efforts were futile.

Our western correspondents have advices that farmers are holding barely and oats and are unwilling to dispose of the balance of their crop at present prices. Spring is at hand, and it is only a few weeks before we will begin to harvest new oats in the extreme south of the United States and famine prices exist on all foodstuffs when there is an abunndance of it in the world.

Barley—Sharply lower. The buying of this recently has been in anticipation of the foreign demand, which apparently has not been realized to any extent and when buyers of bar-

GOMBAULT'S
CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $ 1.75 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Toronto, Ont.

ley endeavored to dispose of their holdings this morning they found the market bare of buyers with the cash handlers unable to dispose of their stocks for shipment either to the east or for export.

Flax—Trade very light with no particular feature. This is one commodity that might have merit at present levels, if the demand for oil sprung, because the stocks of flax in America are exceedingly small, but further enahncement in value of this commodity will be dependant on the inability of Argentina to export to America a portion of her surplus.

Fluctuations in grain today were:

Oats				
May ...	.74¼	.74¾	.72⅝	.72⅝
July ...	.74¼	.74¾	.72⅞	.73
Barley				
May ...	$1.05	$1.05	$1.00⅞	$1.01
Flax				
May ...	$3.54½	$3.56¾	$3.53	$3.53
July ...	3.43½	3.45	3.40	3.40

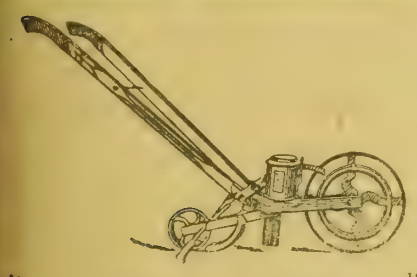
Cash prices closed:

Oats—No. 2. C.W., 71⅝c; No. 3 C.W., 67⅝c; extra No. 1 feed, 67⅝c; No. 1 feed, 65⅝c; No. 2 feed, 62⅝c.

Barley—No. 3 C.W., 99½c; No. 4. C.W., 94c; rejected, 90c; feed 89c.

Flax—No. 1 N.W.C., $3.57; No. 2 C.W., $3.48; No. 3, C.W. $3.33.

GARDEN SEEDERS!



A DANDY FOR TURNIPS

Makes the drill, sows, covers and rolls the seed while you walk. Does the work of two men in half the time. No better seeder built for the accurate sowing of turnip, carrot, cabbage, beet, pea, corn and all other kinds of garden eseds.

Price $10.50 Delivered at Your Station. Order To-day.

The Sussex Mfg. Co., Limited
Sussex, N. B.

CHICAGO GRAIN MARKET

Chicago, March 29.—All deliveries of corn soared today to new high price records for the season, but reacted sharply at the last. Gossip had been current that the seaboard exporters were bidding, and this factor was afterward more or less offset by bearish advices from Argentina. The market closed nervous at the same as yesterday's finish to ½c higher, with May at $1.48¾ to $1.48⅞, and July at $1,38⅞ to $1.39. Oats lost ¾c to ½c. Corn traders showed themselves extremely susceptible to bullish influences, such as the gossip about export inquiry. The underlying reason was that no domestic stocks to speak of were ready available, and that no movement of consequence was expected until after corn planting had been accomplished. After the resultant bulge in prices, however, the wave of buying orders became exhausted and prices swung backward with longs, in general, striving to realize. The immediate bearish impetus in the late day was a sudden fall in quotations at Buenos Aires, together with an estimate that the Argentine exportable surplus would reach 230,000,000 to 250,00,000 bushels.

MILLFEED AND ROLLED OATS

Montreal, March 29.—There was no further change in the condition of the market for for millfeed today, prices being maintained for all lines, but the volume of business was smaller and the market quieter on account of the great scarcity of some feeds which are in urgent request. Sales of feed cornmeal in mixed car lots were made at $64, mixed grain mouille at $58 to $60, pure ground oats at $58, mixed mouille at $50 to $52, dairy feed at $46, oat middlings at $44, bran at $41 to $42, shorts at $44 to $46 per ton, including bags, delivered to the trade, and car lots of bran were quoted at $40.25, and shorts at $42.25 per ton, including bags, ex track. The trade in rolled oats was dull and prices ruled steady for broken lots of standard grades at $3.90 to $4 per bag of 90 lbs., and Golden Cornmeal sold at $4.50 to $4.75 per bag.

THE BALED HAY MARKET

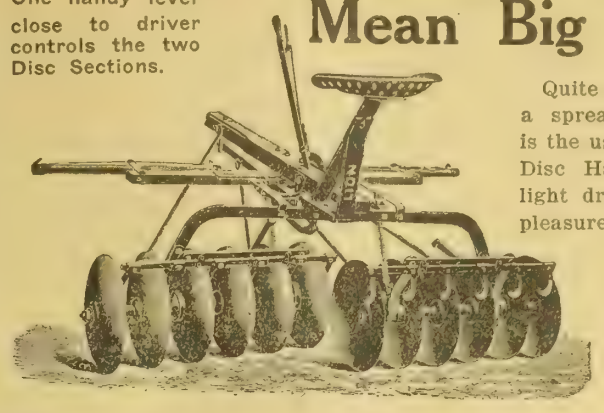
Montreal, March 29.—A very firm feeling prevails in the market for baled hay at the recent advance in prices noted, owing to the very limited supplies coming forward and the good demand for supplies for export and domestic account, and sales of car lot s of No. 1 timothy hay were made at $26, No. 1 light clover mixed hay at $25, No. 2 timothy hay at $25, No. 2 clover mixed hay at $24, and No. 3 timothy hay at $23 per ton extrack.

THE PROVISION MARKET

Montreal, March 29.—A weaker feeling has developed in the Canadian live hog situation since Monday, which resulted in prices declining at Toronto yesterday 25c to 50c per 100 lbs. as compared with those paid last Saturday, with sales at $19.75 to $20 per 100 lbs., weighed off cars, and at $19.50 to $19.75 fed and watered. In sympathy with the above outside prices here today were 50c per 100 lbs. lower than Monday. The offerings were not large and the demand was ample to absorb them, consequently a fair trade was done in selected lots at $19.50, and in lots weighing less than 140 lbs. each at $17.50 per 100 lbs. weighed off cars. Owing to the above there was an easier feeling in the market for dresed hogs, and sales of city abbattoir fresh-killed stock in a jobbing way were made at $26.50 to $27 and country dressed ilght weights at $25 per 100 lbs.

Frost & Wood Disc Harrows Mean Big Crops

One handy lever close to driver controls the two Disc Sections.



Quite as important as a spread of fertilizer is the use of a F. & W. Disc Harrow, and its light draft makes it a pleasure to use.

The value of a good seed bed cannot be over-stated. Take no chances THIS year.

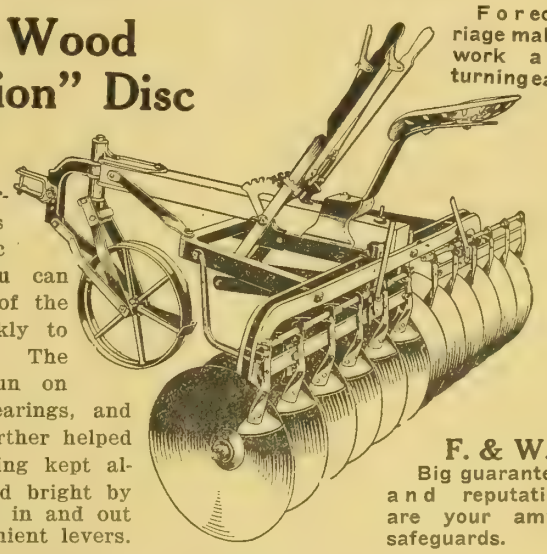
Frost & Wood "Lion" Disc Harrow

A staunch in-throw Harrow; the two disc sections held in place by an immensely storng main frame of steel are run on highly polished, dust-proof ball bearings. The angle of the "cut" is controlled by a handy lever. The inside discs are kept into the soil by strong springs. Driver's seat is well back so as to lessen neck-weight on horses, meaning extra light draft. Two sizes, 12 and 15 discs.

See Your Nearest Frost & Wood Dealer
He'll gladly show you these splendid Harrows and other modern implements in the relable "F. & W." line.

Work as hard as you please
Its light draft and staunch build enable you to tackle the roughest field. Be sure to see it.

Frost & Wood "Champion" Disc Harrow



For ecarriage makes work and turning easy

Two easily operated handy levers control the disc sections, so you can vary the "cut" of the discs very quickly to suit the ground. The disc sections run on splendid ball bearings, and light draft is further helped by the discs being kept always clean and bright by scrapers, thrown in and out of use by convenient levers.

F. & W.
Big guarantees and reputation, are your ample safeguards.

Immense strength, and high quality materials, ensure few repairs and year-in-year-out readiness for work.

The FROST & WOOD CO., Limited
Truro ST. JOHN Charlottetown

MILL FEEDS ARE SCARCE

Mill feeds are very scarce. The flour mills are operating at their capacity and bran and shorts are almost impossible to get. It is not necessary, however, to depend on bran and shorts for feeding purposes. There are many feeds on the market which are not only just as good as bran and shorts, but even better. If you are having trouble in getting feeds, write the Maritime Farmer. We will help you get all the feeds you want at WHOLESALE PRICES. You can buy just as cheap as any dealer, through the Maritime Farmer. We handled 150 cars of feed this year for farmer organizations. We can handle more, if you want feed. We address these remarks to agricultural societies throughout the Maritime Provinces.

CELERY CULTURE

Celery is a moisture-loving plant and does well especially in muck soils, although excellent celery can be grown on ordinary garden loam of a lighter character more especially if moist. The plants are slow to develop in their early stages. For a late crop the seed should be sown from the middle to the patter part of April. The old plan of digging a trench is not now practiced by commercial celery growers. It is considered better to grow the crop on the level and mould up the soil, or to blanch the crop by means of boards or pliable blanching material resembling "ready roofing" which may be used to keep the plants together and exclude the light. This subject, as well as onion culture and asparagus culture, is quite fully lovered in Pamphlet No. 24 of the Central Experimentaal Farm, available at the Publications Branch of the Department of Agriculture, at Ottawa.

When the farmer desires to sell a heavy horse of quality and breeding he can always locate a ready market, whereas inferior animals ordinarily can be disposed of only at a sacrifice.

NEW BRUNSWICK'S FARMERS AND DAIRYMEN'S CONVENTION

(Continued from page 711)

by using a grade . Two regrettable features about using pure bred sires are that in many cases it is impossible for purchasers to get any reliable information regarding the milk producing qaulities of the dams of the animals offered for sale; and that too many dairymen apparently do not realize the importance or value of knowing something about the milk producing qualities of the sire's ancestors.

Be it therefore resolved that this Dominion Dairy conference regrets the fact that many breeders of pure bred dairy stock do not keep records of the milk and fat produced by each cow, and are therefore unable or unwilling to provide purchasers of pure bred dairy cattle with this most valuable information, with the result that farmers often purchase pure bred dairy sires expecting to improve the milk producing qualities of their herds, but fail to get results because the animals are bred from low milk producing stock.

We, therefore, recommend that a special effort be made to the Dairy Schools, Dairy Instructors, Dairymen's Conventions and other suitable avenues, to place before the milk producers of Canada the importance of buying pure bred dairy sires from only the breeders who can show reliable records of the milk and fat produced by the dams of the animals offered for sale."

Resloved that this Association concur in the spirit of the above resolution recently passed at the National Dairy Convention at Ottawa.—D. J. Mundle, A. J. Doucett.

Whereas the Government of this Province is desirous of promoting the Livestock industry, especially sheep raising,

And whereas there now exists upon the statute books a law protecting the sheep owner from loss of sheep by dogs,

And whereas large numbers of deer are also destroyed each winter by wild cats,

And whereas the number of wild cats is steadily increasing while the number of deer is steadily decreasing this decrease being caused largely by the depredations of wild cats.

Be it resolved by the Farmers and Dairymen's Association here assembled that we petition the Provincial Legislature now in session to amend the game law of the Province now in force so as to increase the bounty on wlid cats from two dollars to the sum of not less than five dollars per head.

And also be it further resolved that a acopy of this resolution be forwarded to his Honor the Minister of Lands and Mines, and a copy to his Honor the Minister of Agriculture.—L. T. Leaman, C. B. Keith.

Resolved that we, the Farmers of New Brunswick, in Convention assembled do hereby endorse the action taken by the Provincial Legislature of Manitoba and Saskatchewan in requesting the Federal Government to adopt the reciprocity compact formerly proposed between Canada and the United States and humbly request our Legislature to do likewise.—J. E. Porter, H. H. Smith.

Resolved that this Convention of the Farmers' and Dairymen's Association of New Brunswick concur in the resolution adopted by the Boards of Trade of St. John and Moncton protesting against the proposed removal of the office of the Canadian National Railways from the City of Moncton.—A. J. Doucett, C. B. Keith.

Wherease we believe a great number of bredeers of pure brd stock for breding purposes in this Province have lost sight of individuality for pedigree and also that the attention is not givei to care and feeding for development that should be in many cases,

Therefore resloved that the Farmers' and Dairymen's Convention draw this matter to the attention of the breeders and advise them to pay more attention to selection of individuals for performance as well as for certain lines of pedigree and that more care be given to the development of young stock which is being reared for breeding purposes.—D. B. McKinnon, C. B. Keith.

Whereas it is aparent that a number of Vice-Presidents of the Association are present at this Convention, having travelled at their own expense

And whereas there seems to be no provisions made for the re-imbursement of these expenses,

Therefore be it resolved that this Convention submit the matter to the Department of Agriculture for their kindly consideration.—Scott A. Shaw.

METHODS FOR INCREASING THE YIELD OF OATS

By O. C. Hicks, B. S. A.

Oats constitute the most important grain crop of the province of New Brunswick. According to the statistics for different crops taken from the report of the Department of Agriculture, the average annual production fo rthe past ten years was 5,837,243 bus.

The yield per acre for the same period was 28.5 bus. This yield is low and efforts should be made to increase it. Better methods of culture, the use of more productive varieties for seed purposes and seed treatment for the prevention of smut, will aid materially in increasing the yield per acre and the profit to growers.

The average annual importation of oats and mill feeds into the province before the beginning of the war was valued at $1,900,00. Owing to the rise in prices and to increased freight rates this ameunt was greatly increased during the past four years. Theer are several reasons why an increased area of oats should be sown.

Firstly, there is a large yearly importation of oats for feeding and seeding purposes, which under average weather conditions could as well be grown at home.

Secondly, with every bushel of imported feed oats used, the number and variety of weeds on our farms is increased, which makes the farms more difficult and expensive to operate in after years.

Thirdly, our climate and soil conditions are such that oats is a crop which we can grow at a profit, as it fits so well with the many systems of crop rotation in use and is the crop

You Can Examine

INVINCIBLE FENCING

Before you buy it

INVINCIBLE Fencing reaches the farmers through the most economical channels of manufacture and distribution. The steel for the wire is made in our own mills—and so is the wire for the finished product. Thus we ensure a quality of raw material in keeping with our high standard, as well as eliminating unnecessary profits. Then we distribute Invincible Fencing through dealers, which has been proved to be the most economical and satisfactory method.

From these Invincible dealers—the best dealers all over Canada—you can obtain immediate delivery; no waiting for shipments, no sending your money before you can see the goods.

You do not have to take our word for the high quality of Invincible Fencing—you can examine it at your local store. You may check its weight, see the straightness of the stays, note the heavy galvanizing, observe the perfection of its weave and test the strength of its locks.

Do this—then buy on your own good judgment—this fencing that is made by Canadian workmen—and keep your money in circulation in Canada.

"Trade Mark"

CATALOGUE MAILED UPON REQUEST

THE STEEL COMPANY OF CANADA LIMITED

MONTREAL

Now sold in a new *waxed board* package — a great improvement over the old lead package

RED ROSE TEA "is good tea"

Sold only in sealed packages

124

which we can compete with the grain growing areas of Canada.

One of the reasons for the low yield per acre is because of the lack of attention given to the selection, purchase, and preparation of the seed used. Too frequently the seed is not graded but sown just as it comes from the thresher. An investigation made in the Province in 1914 showed that only on 38% of the farms were the oats cleaned to remove the weed seeds and light kernels. On none of the farms were the oats treated with formaldehyde to prevent smut. Neglect of these two precautions is responsible for a large acreage of oats being grown at a loss.

Repeated experiments at Guelph, Ottawa and at MacDonald College show that plump large seed give a substantial increase in the number of bushels harvested over ordinary marketable types of oats.

The increase in the yield of oats treated with formaldehyde to prevent smut is borne out by the following data: Mr. Wm. Palmer, Keswick, a member of the Canadian Seed Growers Association, treated one portion of his first generation registered Banner oats to prevent smut and sowed the remaining part without the Formaldehyde treatment. On inspection the part treated was practically free from smut heads, while the untreated part contained 5%. The loss on this crop therefore was 2½ bus. per acre.

Mr. Albert Tracy, Secretary of Agricutlural Society No. 116, Fredericton Jct., treated 27 bushels of seed oats for smut prevention in the spring of 1918, and reported for Banner Oats, a yield of 14 bushels from one, and from another variety, 15 bushels from one.

On the other hand Mr. Wm. Hayes of Millville reported a yield of 750 bus. of oats from 110 bus. sowed, a yield of 7 bus. from one. This low yield Mr. Hayes said, was due to an excessive amount of smut heads, estimated by himself to be 25%. The loss in this instance amounted to 250 bus. of oats as 1000 bushels at least was expected.

Most of our best varieties of oats have been brought from Europe where more attention has been given to the improvement of the crop than in this country. These varieties do best here however, when grown under conditions similar to those in the regions where they were developed, consequently a good variety originated in Sweden or Scotland can be expected to give better results than one originated in Russia. It has been found repeatedly with various plants that varieties originated in one locality and adapted to one set of conditions, when removed to a different locality where different conditions prevail, may give indifferent results or fail completely.

A change o fseed is by no means the surest step to take in the desire to increase the acre yield, indeed, it is usually the wiser course to clean and grade up one's one seed than to make such a change, unless a superior variety is being secured.

In addition to the fanning mill selection the farmer can increase the yield and the quality of the oats he grows by selecting the best heads or the best plants in the field. This is the system of improvement adopted by the Canadian Seed Grower's Association to produce what is known as 'Registered' Seed. The extensive experiences of oat breeders in various parts of the world have demonstrated that we can greatly improve our varieties by careful breeding. For instance in Ontario today the O. A. C. No. 72 (a selection from Siberian) is the most outstanding variety. It is the heaviest yielder, and is veyr resistant to smut.

The most reliable method of improving the quality and yield of the oat crop is by the selecting and testing of strains developed from individual plants or heads. It is probable that several sports or mutations of oat plants are produced every year in the province any one of which is observed and propagated without any further selection would form a valuable new variety, possibly superior to any we now have.

Varieties are frequently very much mixed with different types, and growers ordinarily fail to observe this mixture. Almost all farmers think they know a good oat plant, though it requires keen observation to recognize different qualities such as size of head, yield of grain, strength of straw, number of stools, etc. The grower should be on the lookout for desirable plants. These should be marked and later on the seed gathered and placed in separate paper envelopes.

Each selection should be planted separately in a short row—with a few rows of standard varieties alongside for comparison.

When the selections begin to ripen, note the season of maturing, the tendency to lodging, presence of such diseases as rust and smut and whether the selections have a tendency to shatter the seeds.

Retain the superior good rows, and discard all rows which are apparently inferior in yield or are badly affected with any disease or subject to lodging, etc.

The next year an increase plot can be sown of the row chosen as the best. It is remarkable how rapidly seed can be increased from a small beginning. A single head of oats may yield 50 bus. within 3 years time. The former should take advantage of this generous quality of nature. Seed selected from grain crops will yield an abundant increase in a surprisingly short time and the yield of farm crops can be greatly increased by the use of well bred seed.

The hybridization of oats is a different process and the selection of hybrids and the fixation of pure types is a problem which should be left to the professional plant breeder and experiment stations. Much can be done in the improvement of the oat crop through the selection of the best individual plants to increase the yield. Greater results can be secured as a first step by cleaning and grading all oats use dfor seed and still further advancement be made toward securing a maximum yield by field selection followed by a rigid fanning mill selection and by treating the seed with formalin to prevent the loss caused by smut.

Large, plump seeds give better results than small seeds. This is especially true of garden seeds.

Do not leave seedlings in the seed box to become crowded. Transplant as soon as largn enough to handle, if you would have good plants.

The best of garden seed is the cheapest in the long run. Demand seed not of low cost but of high quality.

An English gardener says that salsify or vegetable oyster sprouts that come up from plants left in the garden over winter may be cooked and used like asparagus if they are not allowed to grow more than six inches tall.

Splendid Record Achieved during 1918

THE year 1918 was for the business of life assurance a year of supreme achievement. Owing to the combined effect of the war and the influenza epidemic, death claims were unusually high. The payment of these claims enabled the Companies to render an unprecedented measure of public service, and to fulfill to a more noteworthy degree than ever previously the beneficent purpose for which they were founded.

The record achieved during 1918 by the Sun Life of Canada was one of particularly striking success. For the first time in the Company's history new assurances paid for exceeded Fifty Million Dollars. The growth in size, strength and prosperity accentuates the Company's position as not merely the leader among Canadian Life offices, but one of the great insurance corporations of the world.

The Company's financial power is emphasized by its large Assets, Income and Surplus. During the year $7,460,000 was added to the Assets, which at December 31st, had reached the huge total of $97,620,000. The Income is now $21,651,000, while the undivided Surplus is $8,027,000.

THE RESULTS FOR 1918

ASSETS

Assets as at 31st December, 1918	$97,620,378.85
Increase over 1917	7,460,204.61

INCOME

Cash Income from Premiums, Interest, Rents, etc., in 1918	21,651,099.69
Increase over 1917	2,362,102.01

PROFITS PAID OR ALLOTTED

Profits Paid or Allotted to Policyholders in 1918	1,546,607.16

SURPLUS

Total Surplus 31st December, 1918, over all liabilities and capital (According to the Company's Standard which is more severe than that laid down by the Insurance Act.)	8,027,378,55

TOTAL PAYMENTS TO POLICYHOLDERS

Death Claims, Matured Endowments, Profits, etc. during, 1918	9,768,564.28
Payments to Policyholders since organization	78,862,881,15

ASSURANCES ISSUED DURING 1918

Assurances issued and paid for in cash during 1918	51,591,392,04
Increase over 1917	3,779,824.56

BUSINESS IN FORCE

Life Assurance in force 31st December, 1918	340,809,656.13
Increase over 1917	28,938,710.42

THE COMPANY'S GROWTH

YEARS	INCOME	ASSETS	LIFE ASSURANCES IN FORCE
1872	$ 48,210.73	$ 96,461.95	$ 1,064,350.00
1883	274,865.50	735,940,10	6,779,566.00
1893	1,240,483.12	4,001.776.96	27,799,757.00
1903	3,986,139.50	15,505,776.48	75,681,189.00
1913	13,996,401.64	55,726,347.32	202,363,996.00
1918	21,651,099.69	97,620,378 85	340,809,656.00

SUN LIFE ASSURANCE COMPANY OF CANADA

HEAD OFFICE MONTREAL

T. B. MACAULAY, President

1871 1919

BUY W-S-S WAR-SAVINGS STAMPS

QUEEN'S UNIVERSITY

KINGSTON, ONTARIO

SCIENCE SUMMER SESSION FOR Returned Men

In all four years. Counting as full University Year.

Mining, Chemical, Civil, Mechanical and Electrical Engineering

Preparatory classes for any soldier wishing to study Engineering.

Classes Open April 28th, 1919

For further Information write GEO. Y. CHOWN. 23

BEST ANNUALS FOR THE HOME GARDEN

(Experimental Farms Note)

Annual flowers succeed exceptionally well in nearly all parts of Canada. For the "Home Garden," whether it be in the city or the country, the best annuals are the old favorites which have become so popular because they have fitted in with the needs of a large class of flower lovers. The reason for the popularity of the "annual" is that it can be raised easily and grown with but very little expense or labor. A few packages of seed costing five or ten cents each, a garden patch and someone interested in flowers form a combination which in the sapce of four or five short months may produce the most delightful results.

The old favorite annuals are the best because they have stood the test of time. In addition, they have been improved and incrased in size, form and color by the plant hybridist and by the seedsman so that today they have almost reached perfection. In one hundred years or less they have made as much advance as most other forms of life have made in several thousand. The "poor man's orchid" is the descriptive term for the modern sweet pea and the term is legitimate because the sweet pea of today is wonderful. It is a new creation as compared with the sweet pea of a century ago. The same is true of many other annuals.

The favorite annuals are those which can be depended upon to give results. Th efinal results will depend upon: 1, seed; 2, culture.

1.—Seed. Some annuals are difficult to raise from seed and, therefore, the best for the home garden are those which produce seed that will germinate well. The seed of such annuals can be dealt with in two ways: (a) It may be sown in pots or flats in the house and the seedlings transplanted to the garden or (b) it may be sown direct into the garden. Latitude and climate must settle which method is better for the greatest success although with many annuals either method might give good results.

2.—Culture.—The culture of an annual flower is not a laborios task or trial of skill. The cultural directions are generally printed on the seed packages. Soil, cultivation and rainfalls are three ifactors of importance. SoiSl should be of garden loam quality, and neither too sandy nor too heacy. Barnyard manure will stimulate good growth. Cultivation will keep the growth vigorous and healthy. Rain or artificial watering not less than once a week in the early stages of growth is almost essential.

Annuals are splendid for purposes of cut bloom. Some of the best for this purpose as well as for garden display are as follows: China Asters, Sweet ePas, Nasturtiums, Sweet Sultan, Sweet Scabious, Snapdragons, Everlastings, Zinnias, Pot Marigold or Calendula.

Other good anuals are:

LOW GROWING—Pansies, California Poppy, Mignonette, Petunias, Portulaca, Pinks, Drummond Phlox, Verbenas.

MEDIUM HEIGHT. — Everlastings, Balsams, Coreopsis, Larkspurs, Gaillardia, Clarkia, Salvia, Stocks, Poppies.

TALL GROWING.—Cosmos, Helichrysum, Tall Larkspurs, Nicotiana, Salpiglossis, Sunflowers.

THE MARITIME DAIRY SCHOOL

Circumstances, such as epidemic conditions which are still existent in some parts of the country, no special rates granted by railways, the necessarily higher rates for 'board, etc., have somewhat reduced the attendance at the Dairy School this year, but the quality of the students and the interest taken were never higher. The instruction is all being carried on by Maritime men.

Special emphasis is this year being laid on Pasteurization, and experimental work in neutralization. Several labour saving devices have come to the front. Among these perhaps the most noteworthy is a can steaming outfit to remove quickly and thoroughly the cream adhering to the inside of the can. When the statement is made that one creamery estimated its loss through this leak at $2,000, it need hardly be added that the use of the device will be pushed among the creameries.

The great need of the Dairy School is a longer and more thorough course. Inasmuch as the Dairying Associations of the three Maritime Provinces are unanimous in their determination to have a well equipped and thoroughly efficient institution of this kind at pects of this branch of technical education are bright. Following is a list of those in attendance at the Creamery-men's course. The Cheese course begins on Wednesday the 26th inst. The attendance at this course will be more representative of New Brunswick and P. E. Island.

MARITIME DAIRY SCHOOL.

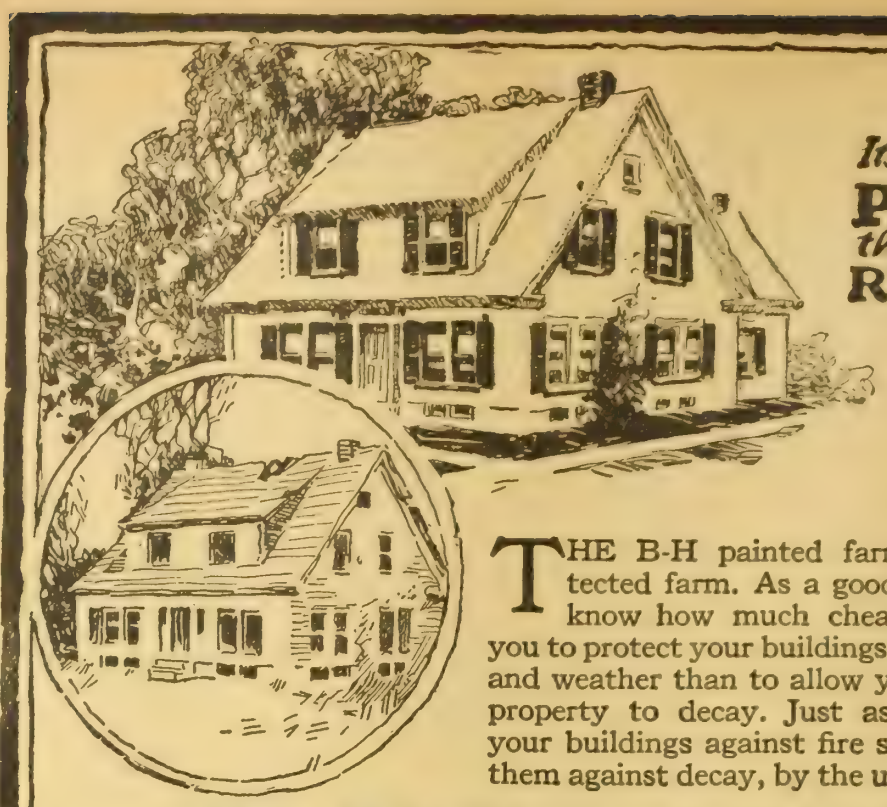
CREAMERYMEN'S COURSE

March 12-25, 1919.

Attendance

J. Andre Robicheau, Meteghan, N. S.; Robert Cousins, Loch Katrine, N. S.; E. Parsons, Woodstock, N. B.; Paul L. Blaikie, Great Village, N. S.; Harold Lockhart, Londonderry, N. S.; C. E. Gamble, Tryon, P. E. I.; John L. Cameron, Brookfield, N. S.; James Osborne, Moncton, N. B.; S. D. Innis, Halifax, N. S.; A. J. MacDaniel, Margaree Forks, N. S.; Miss Marion Archibald, Brentwood, N. S.; Edwin Blaikie, Middle Musquodoboit, N. S.; Fred I. Murray, Scotsburn, N. S.; Alvin Graham, Scotsburn, N. S.; H. M. Aitken, River Hebert, N. S.; Harold Falconer, Stellarton, N. S.; Alex. Cameron, South River Station, N. S.; John Falt, Antigonish, N. S.; W. L. Brenton, Brookfield, N. S.; R. T. Stewart, Scotsburn, N. S.; J. P. Simonds, Moncton, N. B.

Save all of the manure and apply to your poor land. This is one way, and a most excellent way to have richer land and larger crops.



It's better to **PAINT** *than* **REPAIR**

THE B-H painted farm is a protected farm. As a good farmer you know how much cheaper it is for you to protect your buildings against wind and weather than to allow your valuable property to decay. Just as you insure your buildings against fire so you insure them against decay, by the use of

B-H "ENGLISH" PAINT

70% Pure White Lead (Brandram's Genuine B.B.)
30% Pure White Zinc
100% Pure Paint

This is the paint to use for true economy. While it is slightly higher in price than ordinary paints yet a smaller quantity of this guaranteed paint will cover a much larger surface. This safe dependable paint will last longer than other paints.

The difference lies in the basic formula. No other paint contains anything like the quantity of pure, finely-ground white lead that B-H "English" possesses.

Ask your dealer to show you a can—right on the face of it you'll find the reason for B-H superiority—the guarantee, our hard and fast commitment by which we bind ourselves to the use of the best white lead (Brandram's Genuine B.B.) and pure white zinc in equal proportions.

Insist then upon getting B-H "English" Paint, for it's only by using such high-quality paint as the B-H guarantee ensures that you can be certain of real economy and the utmost satisfaction.

B-H PRODUCTS FOR OTHER PURPOSES

For Interior Finishing "China Lac" the perfect varnish stain.

Staining the Roof B-H Shingle Stain in 19 different colors.

B-H Porch Floor Paint For porch floors, ceilings and parts exposed to the weather.

Plaster Ceilings and Walls B-H "Fresconette,"—A flat tone oil paint.

Finishing a Floor B-H "Floor lustre"—excellent for interior floors.

For Barns and Outbuildings Imperial Barn Paint

BRANDRAM-HENDERSON LIMITED

MONTREAL HALIFAX ST. JOHN TORONTO WINNIPEG
MEDICINE HAT CALGARY EDMONTON VANCOUVER

HOW TO FERTILIZE

Every farmer knows that plants need Food as much as cattle. He knows, too, that plants cannot get all the Food they need out of the ground alone. He must supply them with certain Foods himself, or they will not thrive and bear their full yield of fruit. Exactly as he supplies hay and oats to his horse, he must supply Nitrogen and phosphate to his plants. He may buy these in the open market exactly as he does his hay or his oats, or he can buy them in combination. Moreover, there is no secret value in the "complete fertilizer," it is nothing more nor less than the ingredients combined and sold at a higher price. Nitrogen is by far the most expensive as well as effective of plant foods, and will pay the farmer well to stop and think before he buys it in this combination form or waits season after season for legume nitrogen, or organic nitrogen to become available.

These compounds generally averaging 8-2-2 do not supply what nature requires, for the crops take out more nearly the equivalent of a 2-4-3; that is why we can in most cases and in most soils use Nitrate alone as a straight top dressing, and the earlier the better.

Translated into Commercial Fertilizer terms, the comparison is as follows:

	What Nature Requires	What the Average Brand Supplies
Phosphoric Acid....	2.02	8.00
Nitrogen	4.33	2.00
Potash	3.65	2.00

THE BEST AND CHEAPEST NITROGEN

The cheapest and most practical form in which to furnish Nitrogen to plants is Nitrate of Soda. In the rainless region of Chile are stored away vast quantities of Nitrogen in what are known as Nitrates—the only form in which Nitrogen can be utilized by plants. The Nitrogen which exists in organic, vegetable or animal matter—that is, roots, stems, dead leaves, weeds, leather, tankage, dried blood—and nitrogen as well in the form of Ammonia salts, must first be changed to Nitrate before they can be taken up by plants. This change is dependent upon conditions of weather. If the season be backward, or there be a prolonged drought, this change may be so retarded as to deprive the plant altogether of Nitrate of Food at the very time it needs it most; moreover, certain mineral forms of commercial nitrogen leave acid residues in the soil. Nitrate of Soda, on the other hand, is entirely independent of weather and leaves the soil sweet. It is immediately available under all circumstances, for it is readily soluble, and as soon as it comes within reach of the roots of the plants it is taken up by them. It can, therefore, readily be seen that the practical value of various forms of Nitrogen ranges from nothing at all, where conditions of temperature or soil prevent Nitration, to 100 per cent. as Nitrate of Soda, where Nitrogen has already taken place. Moreover, the process of transforming the Nitrogen of cotton seed meal, dried fish, drier blood, tankage, and other Nitrogenous constituents into Nitrate is very wasteful, for much valuable Nitrogen is lost in the process, as well as by natural oxidation. Official soil experiments have shown that 100 pounds of Nitrogen in these organic forms has only about one-half to three-fourths the manurial value of 100 pounds of Nitrogen in its nitrated form of Nitrate of Soda.

A GREAT SAVING

In view of these facts it seems extraordinary that farmers should continue to purchase their Nitrogen in compounded form in a ready mixed fertilizer, when they can procure it much cheaper, and ready for the plants' immediate use, in the form of Nitrate of Soda.

Nitrogen is often in a form which is not available for food for the plants, for it must first be converted into Nitrate. The time required to do this varies from a few days to a few years, according to the temperature of the soil and the kind and condition of the materials used.

It must be recognized that the grower should have a chance to derive some profit from the use of a fertilizer, and wise buying is a prerequisite to successful use.

HOW IT HELPS CROPS

If a young pig or a young calf does not have an abundance of the right kind of feed when it is young, it becomes stunted in growth, and never recovers fully, no matter how judiciously it is afterwards fed. The intelligent cultivator has learned that this holds good in the feeding of plants. Nitrogen is the element which enters most largely into the building up of the plant itself—roots, stems and leaves. Most plants need to take up the greater part of their Nitrogen during the early stages of their growth, as in oats.

Nitrate of Soda is a plant tonic, and an energizer; it is not a stimulant in any sense of the word.

It may be used alone without other fertilizers, as a Top-Dressing, at the rate of 100 pounds to the acre.

RESULTS WITH NITRATE

For four years in succession samples of Nitrate of Soda were sent to farmers. In each experiment two patches were marked out side by side. One received an application of Nitrate of Soda at the rate of 100 pounds per acre, the other had none. The following are fair samples of the results reported:

CROP—SUGAR BEETS

Name, Louis Lorquet.
P. O. Address, Farnham,
R. F. D.
State, Quebec.

Plot without Nitrate produced 480 lbs.

Plot with Nitrate produced 780 lbs.

Date of applying Nitrate of Soda, June 25.

Date of completing harvesting of the crop, October 20.

Remarks: "I am very satisfied with the effect of your Nitrate Soda. 300 lbs. with surplus, certain 4 furrows of 100 feet.

CROP—GRASS

Name, M. H. O'Brien.
P. O. Address, Upper Middleboro.
R. F. D.
State, Cumberland Co., N. S.

Plot without Nitrate produced 120 lbs.

Plot with Nitrate produced 210 lbs.

Date of applying the Nitrate of Soda, May 15.

Date of completing harvesting of the crop, July 28.

Remarks: Could see where the Nitrate was put on one yard away. The hay grew thicker and the quantity much heavier. Much pleased with Nitrate.

CROP—BARLEY

Name, F. M. Travis,
P. O. Address, Marlboro,
R. F. D. No. 1,
State, New Hampshire.

Plot without Nitrate produced 1 1 3 bushels.

Plot with Nitrate produced 2¼ bushels.

Date of applying the Nitrate of Soda, May 18.

Date of completing harvesting of the crop, August 5.

Remarks: The Barley where Nitrate was used was 8 inches taller than the Barley where no Nitrate was applied. I am well pleased with the results obtained.

CROP—OATS

Name, J. M. Winder,
P. O. Address, Williamsport,
R. F. D.,
State, Pennsylvania.

Plot without Nitrate produced at rate of 17 bushels per acre.

Plot with Nitrate produced at rate of 35 bushels per acre.

Remarks: The plot with Nitrate could be very plainly seen while growing.

CROP—WHEAT

Name, rFank I. Stevenson,
P. O. Address, Perry,
R. F. D., 1,
State, Ohio

Plot without Nitrate produced 75 pounds.

Plot with Nitrate produced 138 pounds.

Date of applying the Nitrate of Soda, April.

Date of completing harvesting of the crop, August.

Remarks: Crop was on gravel land, rather dry for it most of the Summer.

CROP—POTATOES

Name, T. J. Rhodes,
P. O. Address, Leitchfield,
State, Kentucky.

Plot without Nitrate produced 5 2 3 bushels.

Plot with Nitrate produced 11 1 3 bushels.

Date of applying the Nitrate of Soda, May 14.

Date of completing harvesting of the crop, October 13.

THE RATIONAL AND IRRATIONAL USE OF NITRATE OF SODA

Everywhere in the world where there is progressive experiment station work, the unique qualities of Nitrate of Soda are putting it ahead of every other Nitrogenous plant food. Nobody who advocates the rational use of fertilizers ever recommends such large quantities of Nitrate of Soda per acre as would result in any abnormal accumulation of alkali salts. Moreover, the use of acid phosphates, associated as they are frequently with sulphate of lime, converts any alkali residue into harmless forms of soda.

The use of potash salts tends to leave acid residuals in the soil, as do acid phosphates even when rational quantities of acid phosphate and potash salts are used. Nitrate of Soda is needed to help neutralize these residues.

In most of our experiments where Nitrate was used alone at the rate of only 100 pounds per acre, with no further application of fertilizers to the plots, a decidedly marked effect was noticed. This speaks very well indeed for Nitrate of Soda not leaching out of the soil. The readily soluble elements of fertility are the readily available elements. The natural capillarity of soils, doubtless, is in most instances a powerful factor in retaining all the readily soluble elements of fertility, otherwise all the fertility of the world would, in a season of two, leach away into the ocean; and be permanently lost. A case is yet to be seen where the after effects of Nitrate is not distinguishable, and in most cases such effects have been marked. The 2,000 or more tons of active service soil in an acre of land has a powerful holding capacity for all the useful, available elements of fertility.

HOW TO USE NITRATE

Recent experiments suggests that Nitrate may be applied as a Top Dressing to best advantage as soon as growth starts in the Spring, or even better, before seeding or planting.

Nitrate of Soda should be thoroughly cultivated in, as should other fertilizers, so that they may properly nourish the plant roots of the seeded and cultivated crops during the growing season. Most fertilizers should not touch the seed.

Nitrate has no acid residue to leave behind and it will leave nothing deleterious in your soil after using. It will enable you to overcome the effects of droughts and frosts in the shortest possible time and prolong the bearing period of your trees. Nitrate does not have to wait to get busy.

PROOF POSITIVE

In a twenty year test to determine the value of various sources of Nitrogen, the New Jersey Experiment Station found "that crop yields and the percentage of Nitrogen recovered in the crop was greater when Nitrates were used."

Official figures are—

"If we assign to Nitrate Nitrogen a value of 100, then the relative availability of the four materials stands as follows.

Nitrate of Soda.....	100.0
Ammonium Sulfate.....	76.1
Dried Blood.....	62.0
Manure	52.4

This research was published in "Soil Science," April, 1918.

VALUABLE BOOKS FREE

Numerous books have been written on the value of Nitrate of Soda in agriculture. These books deal with questions on which progressive farmers cannot afford to form incorrect opinions:

If you are farming to make money you owe it to yourself to send for the free books which pertain to your crop. If you want to know what farmers have done both in America and Europe, who grow the same crops as you do, these books will tell you. If you have any doubts on how valuable Nitrate of Soda would be to your particular crop, you should get all the available information you possibly can on the subject.

These booklets are free—write for them, addressing

Dr. Wm. S. Myers,
CHILEAN NITRATE COMMITTEE,
25 Madison Avenue, New York, U. S. A.

Why Europe Makes Bigger Crops Than America

Average Production of European Crops is as follows:

Wheat.....33 bushels per acre
Oats.....45 " "
Potatoes.....199.84 " "
Cotton in Egypt.400 pounds "

Europe uses a Home-Mixed Nitrate Fertilizer containing 8 per cent of Phosphoric Acid and 4½ per cent of Nitrate Nitrogen.

Average Production of American Crops is as follows:

Wheat.....14 bushels per acre
Oats.....40 " "
Potatoes.....97.15 " "
Cotton.....185 pounds "

America uses a Fertilizer containing 8 per cent of Phosphoric Acid and 2 per cent of Nitrogen which is mostly not readily available.

The difference in yields is largely due to larger amount of Nitrate Nitrogen used in Europe per acre as Nitrate of Soda. Our small American acre yields are due to failure to appreciate this necessity.

Write for "Chilean Nitrate Has Done in the Farmer's Own Hands."

DR. WM. S. MYERS,

Chilean Nitrate Committee 25 Madison Avenue, New York, U. S. A.

A GREAT CROP PRODUCER

It is plain, therefore, that the cultivator cannot afford to overlook Nitrate, and thus endanger the chances of his crops, which must have Nitrogen in a form the growing plants can use. The presence of Nitrate at the outset enables the plant to get its food when it needs it most, and develops a vigorous growth of roots, leaves and stems capable of withstanding the scorching rays of the sun or sudden changes of temperature, disease, or the attacks of parasites. It is then able to mature properly. Without Nitrate present the young plant will fail to attain stem and leaf growth sufficient to mature its fruit or grain. Why take chances with makeshifts or substitutes when the real thing is 100 per cent effective?

Nitrate of Soda is of high value for early crops, such as peas, corn, beets, cabbage, where rapid maturity is desirable. It is a special help to hay, grain, rye, wheat, timothy, cereals and orchards, all of which are unable to obtain sufficient Nitrogen from the soil just when they need it. It is a great specific in the production of sugar beets, potatoes, cotton, cane and apples, or other fruits.

Small fruits, such as blackberries, currants, raspberries and gooseberries, which need a steady, even growth, are greatly benefited by Nitrate of Soda, which can be furnished all ready for digestion when the plants require it.

The highest agricultural authorities have established by careful experimentation that 100 pounds per acre of Nitrate of Soda applied to crops has produced the increased yields tabulated as follows:

Apples	100	bushels
Barley	400	pounds
Corn	280	pounds
Oats	400	pounds
Rye	300	pounds
Wheat	300	pounds
Potatoes	3,600	lbs. Tubers
Hay, upwards of	1,000	lbs. Barn cured
Cotton	500	lbs. Seed cotton
Sugar Beets	4,000	lbs. Tubers
Beets	4,900	lbs. Tubers
Sweet Potatoes	3,900	lbs. Tubers
Cabbage	6,100	pounds
Carrots	7,800	pounds
Turnips	37	per cent
Strawberries	200	quarts
Onions	1,800	pounds
Asparagus	100	bunches
Tomatoes	100	baskets
Celery	30	per cent
Hops	100	pounds

WINTER EGG RECORDS FROM MEMBERS OF THE BOYS' AND GIRLS' CLUBS OF NEW BRUNSWICK

Many excelent reports are being received by the Poultry Division of the Department of Agriculture from members of their Boys' and Girls' Poultry Clubs organized in the spring of 1918. These clubs were formed in almost every county and are composed of boys and girls varying in age from 12 to 18 years. A few members are only 10 and 11 years of age and many of these are the most successful. Each member was provided with fifty eggs for hatching from heavy laying strains of Barred Plymouth Rocks which have been bred for heavy egg production for several years.

The following are some of the reports which have come to hand within the last week:

P. Stanley Tripp, R. R. No. 3, Burtts Corner, York Co, 17 pullets.—January 259 eggs, or 15.2 per bird, or 49.1% production; February 248 eggs, or 14.6 per bird, or 52.1% production. These pullets began laying December 27th so that only a small number were laying by January 1st, and yet the January record is exceptionally good.

Alice L. Lever, R. R. No. 1 Rollingdam, Charlotte County, 17 pullets.—December, 37 eggs, or 2.1 per bird, or 7% production; January, 107 eggs, or 6.2 per bird, or 20.3% production; February, 233 eggs, or 13.7 per bird, or 48.9% production. This members chicks were not hatched until May 30th. Earlier hatching would no doubt have greatly increased early wniter production.

Hazen I. Reed, R. R. No. 1, Rollingdam, Charlotte Co., 3 pullets.—January, 151 eggs, or 18.8 per bird, or 60.8% production; February, 87 eggs, or 10.8 per bird, or 38.8% production. This boy's pullets were hatched May 10th and began laying Sept. 20th, at 4 months and ten days, but the record previous to January 1st is not available. Two pullets went broody in February, which partially acounts for the decline in production. This boy has a pen of pullets in 5th place in the P. E. Island egg-laying competition.

Gilbert Emmerson, R. R. No. 1, Rollingdam, Charlotte Co., 15 pullets.—December, 108 eggs, or 7.2 per bird, or 23.2% production; January, 215 eggs, or 14.3 per bird, or 46.2% production; February, 200 eggs, or 13.3 per bird, or 47.6% production. Up to March 1st this member paid for eggs he received the previous spring, paid for the feed of both growing stock and laying bird,s accumulated a bank account of $36.00 and had 15 pullets and 1 cockerel worth $2.00 each as stock on hand, or a net profit of $68.00.

Harry Patterson, Hoyt Station, Sunbury Co., 19 pullets.—December, 85 eggs, or 5 per bird, or 14.4% production; January, 319 eggs, or 16.5 per bird, or 54.1% production; February, 389 eggs, or 20.5 per bird or 73.1% production. This boy has made an enviable record in his poultry enterprise and is one of the younger members. Such an egg production no doubt is an exceedingly profitable one.

Jessie and Harry O'Leary, Beaver, York Co., 14 pullets.—No monthly record was kept o fthese birds but to March 8th they had laid 72 dozen eggs (864) or an average of 61.7 eggs per bird. This is a remarkable record.

The foregoing records are from flocks of pullets where absolutely no culling was done. In the first four cases the number of pullets stated is the product hatched and raised from fifty eggs set by the poultry club member. In the latter two cases the number os the product of one hundred eggs. In two cases a few good pullets were taken from the flocks in payment for eggs supplied, making the number shown lower than is actually the case.

The figures given may be taken as unmistakable evidence that there is money in poultry in spite of war time conditions whch largely prevailed during the time these results were obtained. If the fourth member cited, (Gilbert Emerson) would sell his pullets and cockerel at $2.00 each (he has har this offer) his net profit of $68.00 is at the rate of $4.50 per pullet now in his breeding pen. Figuring on another oasis, he paid the equivalent of ten cents per egg for his hatching eggs and to March 1st has made each of those fifty eggs bring him $1.36 net profit. This boy i sabout twelve or thirteen years of age and has done al of the work in connection with his poultry.

In the last case (Jessie and Harry O'Leary) the egg production of the birds has been distributed uniformly throughout the winter. Estimating the eggs at a conservative market value of 60c per dozen or 5c per egg, these members pullets have returned them over $3.00 per bird practically to March 1st, or as what is commonly considered winter egg production.

It is commonly thought that birds which do not lay in winter will make up for lost time in the summer. Expermental data , however. does not confirm this belief. If it were true. it would be difficult to conceive of a pen of birds overtaking a lead of 61.7 eggs during the spring and summer months. Ordinarily these high winter producers can be relied upon for good spring and summer laying. Even if the winter non-producers did equal. in the course of the year the production of the winter layers they would still be considerably in arrears as to net value of eggs laid. Sixty eggs in wnter at 60c per dozen are equal to 90 eggs in summer at 40c per dozen or 120 eggs at 30c per dozen.

The secret of winter egg production lies largely within the stock, but it is up to the poultryman to reveal the secret. High winer egg producton is an artificially created faculty, i. e., it has been made possible by scientific breedng to prefix to the normal spring egg production, (when everything wearing feathers lays) a winter cycle of production. Some strains of poultry have this faculty much more highly developed than others. Many are almost or entirely devoid of ti. Furthermore it is not developed without effort and does not long continue to exist without further effort.

The male bird is a potent factor in the transmission of high winter egg production. His ability in this regard are inherited from both sire and dam whereas a pullet's power to lay heavily in winter comes mostly from her sire. To apply this fact to the practical economics of the poultry business we may suppose the birds owned by one of the club members mentioned (Jessie and Harry O'Leary for example) are sired by a certain male. The production of these birds to date may be conservatively estimated at 60c per dozen or $43.20 for the entire winter production. Such a male is therefore wirth $43.20 more than another which

The Big Leak Is In The Roof

Leaky roofs cost a lot of money. Each year time and dollars are spent to repair the damage done by frost, snow, ice, rain, sun and wind.

Figure the amounts paid for repairing materials alone and you will find it runs into big figures.

Save yourself future roofing troubles and expenses by putting on a real roof, now.

PAROID
A
NEPONSET ROOF

pays—because it lasts and protects.

Every building on the farm should be roofed with Neponset Paroid Roofing, from the big barn to the smallest cribs. It defies snow, rain, sleet or sun. It is fire-resisting and proves its economy by giving perfect satisfaction and years of wear.

Roof with Neponset Paroid and save money.

Neponset Paroid Roofing is made in three colors, red, green, and slate grey.

Sold by Hardware and Lumber Dealers.

BIRD & SON, LIMITED HAMILTON, ONT.

Mills: Hamilton, Ont.; Pont Rouge, Que.

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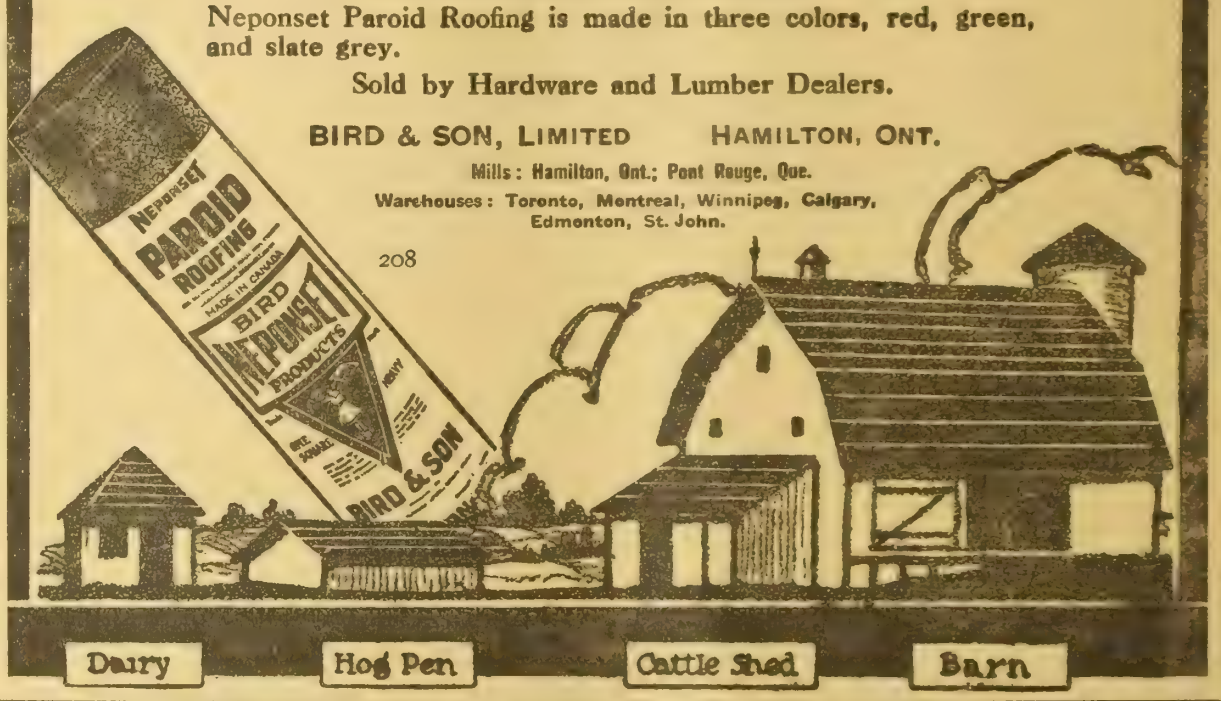


could not produce pullets capable of laying before March 1st. Yet it is a fact that cery few of our farmers or poultry raisers will pay the modest sum of $2.00 for a cockerel or a setting of eggs from such a strain if they can obtain one elsewhere with no breeding at all for $1.50 or less.

One of the environmental factors essential to winter egg production is **early hatching.** The general purpose varieties e. g. Plymouth Rocks, Wyandottes and Rhode Island Reds should be hatched in the latter patr of March or in April. Sometimes early May is satisfactory, but it is not dependable. Late hatched birds are sometimes forced to early laying, but they can seldom be depended upon to give a steady yeild and they are of doubtful value as breeders.

WINTER EGG PRODUCTION

(Experimental Farms Note.)

The possibilities for making a good profit from winter eggs were never better than they are at the present time; altrough many poultrymn and farmers have reduced their poultry activities during the last year, thinking that at the present high price of feeds profits from eggs would be impossible. However, the profit or loss from the poultry does not depend upon feed alone. The successful poultryman must pay the strictest attention to all the essentials of care, feeding and management. if he is to make his work proztable. Even the slightest negligence on the part of the poutryman in any of these essentials may mean the loss of many eggs. A high producing hen is very like a delicate machine, easily put out of repair. Anything that interferes with the health of the flock for even a day may cause a high producing flock to become non-producers for a period of from two to three weeks or longer. Remember a hen lays an egg, or doesn't, never a half. All hens or pullets should be efficient transformers of raw materials into a finished product. This transformation, to be the most profitable ,should ,take place when the price of the finished product (eggs) is at its maximum, which is during the winter months. All hens or pullets tend to consume a similar amount of food, regardless of whether they are good or poor winter layers. It is during the winter months of Nevembr, Dcember, January, February and March, when the poultryman has to supply his flock with all of the following: grain, mash, vegetable and animal food, grit, shell and charcoal, that his expenses are the heaviest; therefore if, by careful and judicious feeding and management, he can have his flock producing eggs enough to defray expenses, or to give him a small profit, he is bound to be more successful than the poultryman who has to pay the winter's board of his flock from his spring egg production.

During the months of November, December and January the egg production at the Experimental Station, Charlottetown, from a pen of 50 White Leghorn pullets was November 159, December 623, January 762, making a total of 1544 eggs.

From these records it will be seen that the White Leghorn pullets averaged 3.18, 12.46 and 15.24 eggs for the months of November, December and January respectively.

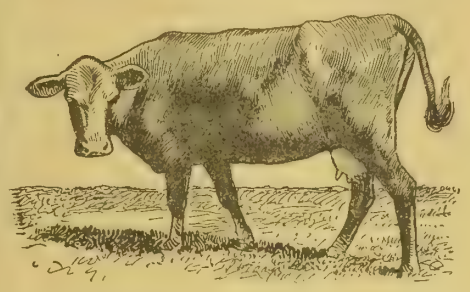
The cost of feed consumed was—656 lbs. whole grain $21.84, 328 lbs. mash $9.47, 38 lbs, shell 70c., 15 lbs. grit 27c., 22½lbs. beef scrap $1.35, and 500 lbs. mangels $2.00, making a total cost for feed of $36.13.

The value of the 128 1/3 doz. eggs at 55c was $70.77; deducting the cost of feed, $36.13, left a profit over cost of feed for the 50 pullets for three months of $34.64.

It will be seen from the statement above that these pullets not only paid for their feed during the time specified, but yielded a net profit of 69c per bird.

"Scrub" Feeding is as Bad as "Scrub" Breeding

A poorly fed cow that gives less than, or only enough, milk to pay for her keep requires just as much attention, just as much feed for upkeep and must be milked just as often as a good cow. Scrub feeding does not pay.



By feeding your cows a ration containing the proper amount of proteins, with a proper balance between constipating and laxative ingredients, together with sufficient bulk for proper digestion, you are bound to get larger yields of milk.

Your feed problem is solved quickly and satisfactorily by using

Monarch Dairy Feed

It is mixed in the proper ratio to produce the largest yields of milk. It keeps the cows in good healthy condition. Monarch Dairy Feed is highly digestible and is composed of oil cake meal, cotton seed meal, bran, corn feed and barley feed—an ideal ration for high milk production.

Monarch Dairy Feed, while being very rich, may be safely fed alone. The guaranteed analysis is: Protein 20%, Fat 4%.

Give Monarch Dairy Feed a trial. It solves one of the important points in successful dairying. Give your dealer's name and we will send you booklet, "Getting the Most Out of Dairying."

Monarch Hog Feed

A special Feed that meets all the requirements of the brood sow and the growing pig; consists principally of corn meal feed, shorts and digester tankage. Guaranteed analysis: Protein 15 per cent., Fat 4 per cent.

Sampson Feed

Meets the demand for a general purpose feed both for cattle and hogs. It is sold at a somewhat lower price than either Monarch Dairy Feed or Monarch Hog Feed. Guaranteed analysis: Protein 10 per cent., Fat 4 per cent.

The Campbell Flour Mills Co., Ltd., Toronto, Peterboro, Pickering

Canada Food Board Licenses Nos. 6, 7 and 8. 53

Bright Prospects

It looks as though the demand for beef will be strong for some years to come, and the man who is in line for greatest profits is the Shorthorn Breeder.

We haven't room to give our reasons here, but write the Secretary for our free publications, which furnish facts.

DOMINION SHORTHORN BREEDERS' ASSOCIATION

W. A. DRYDEN, *President*
Brooklin, Ont.

C. E. DAY, *Secretary*
Box 285, Guelph
Ont. 21

Shorthorns

SHORT CLIPS FROM THE SHORT COURSE

And now the poor farmer must learn Chemistry; not the elaborate laboratory science, but enough to make him an intelligent judge of the relative value of different fertilizers. The lecturer make it very clear that many farmers delude themselves with cheap fertilizers. The standard acid phosphate, for example, contains about 16% of phosphoric acid, the only element in the mixture that is of value as a fertilizer. The 14½ material comes at a lower figure per bag, but the purchaser of this latter simply buys a larger percentage of such sand as he might get for nothing on his own farm. He makes a bad bargain inasmuch as he pays bagging and freight charges on material that is of absolutely no value as a fertilizer. Ask for the high grade stuff. The tag on the bag gives its content of useful matter.

The motor tractor has come to stay. This season Nova Scoia will have a good look at it from the practical standpoint. There will be about a hundred of these machines scattered over the Province. Four different makes were on exhibition at The Short Course, Truro; the Cleveland Caterpillar type, the International Harvester 8-16, The Case 9-18 and the Fordson. Two years ago there was not one in the Province.

Plant a strawberry patch. The market was greatly undersupplied last eyar. The Annapolis Valley shipped les sthan one third the number of crates shipped two years before. This is a crop that sandwiches in well. Half grown children can manage nearly all the labour, and strawberries do particularly well in Nova Scotia. In these days when the cash income is such a vital matter, quite a substantial addition to it may be picked off the strawberry patch.

With a splendid protective law, with the best breeds available through the efforts of the Provincial Dept. of Agriculture, and with prices for wool and mutton products extremely high and likely to remain high, it is not remarkable that the sheep population of Nova Scotia has increased from 205,500 in 1915 to an estimated total of 259,800 in 1919. The Canadian Cooperative Wool Growers Association, which handled more than half the entire clip of Canada last year, buying in every Province of the Dominion, report that the highest prices were netted by the product of the three Maritime Provinces. There is ample room for big expansion in this profitable branch of agriculture.

PROFITS OF OTHERS

"I can't see why a farmer to-day can't make money," said a well-to-do grocer recently.

"No," replied a friend, in a friendly way, "and the farmers can't understand how you are making $20,000 a year in that store of yours—when you're not!"

The point he made was that there is a lack of understanding between urban and rural people; an antagonism exists which prevents it.

Overcome this antagonism and a great step in the direction of national unity will be achieved.

And the antagonism can only be removed by an intelligent study of the condition of both, by a frank recognition of each other's difficulties, and a DESIRE for unity and harmony.

N. B. DEPT. OF AGRICULTURE RULES GOVERNING STANDING FIELD CROPS COMPETITIONS SEASON OF 1919

Standing Field Crops Competitions will be held in the various counties of New Brunswick during the season of 1919 on the following basis:

There will be four competitions in each county, viz., Wheat 1 acre; Oats 2 acres; Turnips 1 acre; Potatoes 1 acre.

The variety must be named when making entry.

An entry fee of twenty-five cents will be charged for one crop and twenty-five cents for each additional crop entered by any one farm.

Entries wil lnot be received for more than one variety of wheat, oats, turnips or potatoes from one farm.

Entries accompanied by the stipulated entry fees must be lodged with the Secretary of each Agricultural Society on or before July 15th.

The Secretary of each Agircultural Society will forward all entries and fifty per cent. of fees thus received to M. A. MacLeod, Supt. of Agricultural Societies, Dept. of Agriculture, Fredericton, on or before July 20th.

Entries not lodged with the Department of Agriculture before July 25th and entries not accompanied by the specified entry fees will not be judged.

The minimum number of contestants necessary to constitute a competition in any one crop in a county will be five.

A prize will not be awarded on any crop that does not score 80 points out of a possible 100 points.

The number of prizes in each competition will be based on the number of competitors and the score they make as follows:

5 entries	$20.00
6 to 10 entries	40.00
11 to15 entries	60.00
Over 15 entries	75.00

The sum of five dolairs will be deducted from each of the foregoing amounts and the balance will be divided pro rata among the contestants scoring 80 points or over.

To the highest awards will be added an additional sum of three dollars and two dollars respectively (these amounts constitute the five dollars deducted as above mentioned) as a special inducement to aim for first place.

First and second prize winners will be required to exhibit their grain at the Provincial Seed Fair, Fredeicton, before the above mentioned additional amounts are paid.

The judging will be done by representatives of the Department of Agriculture. The Federal Seed Division will not grant prizes after this year on field crops competitions excepting in cases where the growers use registered seed. Get a small quantity of registered seed this year so that you will be in line to participate in the 1920 competitions.

Prize winners in the Standing Filed Crops Competition will find it to their advantage to select, clean and grade their surplus food grain and offer it for sale for seed purposes and buy their feed oats if necessary. The growing of good grain is a profitable side line for the progressive New Brunswick farmer.

A special competition in clover growing is being planned, full particulars of which will be announced in good season.

M. A. MacLEOD,
Supt. of Agricultural Societies.

GET MACHINERY READY NOW

Winter is almost over and the rush of spring work will soon be here. To many of the farmers the thought of approaching spring acts somewhat like a sudden jolt, while to others it cannot soce too quickly. Why the difference ? As a general rule most people are glad to see the approach of spring and budding life, but on the other hand thre are farmers who have so many odd jobs to do before they are ready to start the spring cultivation that they are behind all the time This shows a lack of considerate management, which in most cases could be easily overcome.

The chief trouble lies in not being prepared for the spring rush when it comes. The marhinery is in need of repairs, the seed grain has not been fanned, harness not ready and in some cases colts that are expected to do a share of the work have not been trained. All these things piling up at once are enough to wreck the year's efforts, which a little planning ahead could have averted.

Winter is the farmer's spare time, and during that slack period he should aim to get all the little preparatory jobs done that are possible, and thus save valuable time during the busy season later on.

Now is the time to go over the machinery and see that it is in proper repair and ready to go out to the fields on short notice. It is true most farmers have their implements stored in a shed, more or les closely packed and it is no little chore to take these out and overhaul them. However, most men can remember, if they try to, whether any part of their implements were broken last year, and have not been replaced. If not the extra parts should be ordered now before the implements are required. If they cannot be put on without taking the machinery out of the shed they should be ready, and a day before seeding begins can generally be spared, and the work done without too much loss of time. If any whiffltrees or eveners have been broken they should be repaired now, and an extra few made for emergency. The harrow teeth sould be sharpened if necessary, and the disc and disc drill should receive attention. Oil the harness, replace worn out pieecs and mend breaks that may have occurred. In short, put everything possible in shape before the season's work starts, and it will help out greatly when spring activities commence. The present is not a very busy time and no better use can be made of idle days than to go over the machinery and equipment needed for the spring and summer work, to put everything in good working shape. It may save serious delay later on.

FINE MEETING AT DARTMOUTH

A fine meeting was held at Woodlawn Schoolhouse, Dartmouth, on Wednesday evening, the 26th inst., when Mr. J. D. McKenna, of the Maritime Farmer, spoke on co-operatiin. The President of the Dartmouth Agricultural Society, Mr. Maynard Tullock, was in the chair. The attendance was good and those present decided to get down to business. They will have another meeting on April 2nd, when arrangements will be made to carry on business as a society next season. The Dartmouth society will probably buy its fertilizers, feeds, seed, etc. co-operatively.

If I will take care of my character, my reputation will take care if itself.

Men do less than they ought unless they do all they can.—Carlyle.

THICK, SWOLLEN GLANDS

that make a horse **Wheeze, Roar,** have **Thick Wind** or **Choke-down,** can be reduced with

ABSORBINE

also other Bunches or Swellings. **No blister, no hair gone,** and horse kept at work. Economical—only a few drops required at an application. $2 50 per bottle delivered. Book 3 R free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Cysts, Wens, Painful, Swollen Veins and Ulcers. $1.25 a bottle at dealers or delivered. Book "Evidence" free.

W. F. YOUNG, P. D. F., 124 Lymans Bldg., Montreal, Can.

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CANADA PAINT

is the choice of the Farmer who buys his Paint by the cost per year of service—not by the price per gallon. *The sound economy of CANADA PAINT is proven by the years of service it gives, inside and outside the home.*

"Homestead Liquid Red"

is the Paint for Barns and Silos. It protects, brightens, lasts.

Our book, "What, When and How To Paint", free on request.

FREE DECORATIVE SERVICE. Write for color schemes and suggestions for painting, staining and varnishing any part of the house.

THE CANADA PAINT CO., Limited,
Makers of the famous "ELEPHANT BRAND" White Lead.
572 William Street, Montreal.
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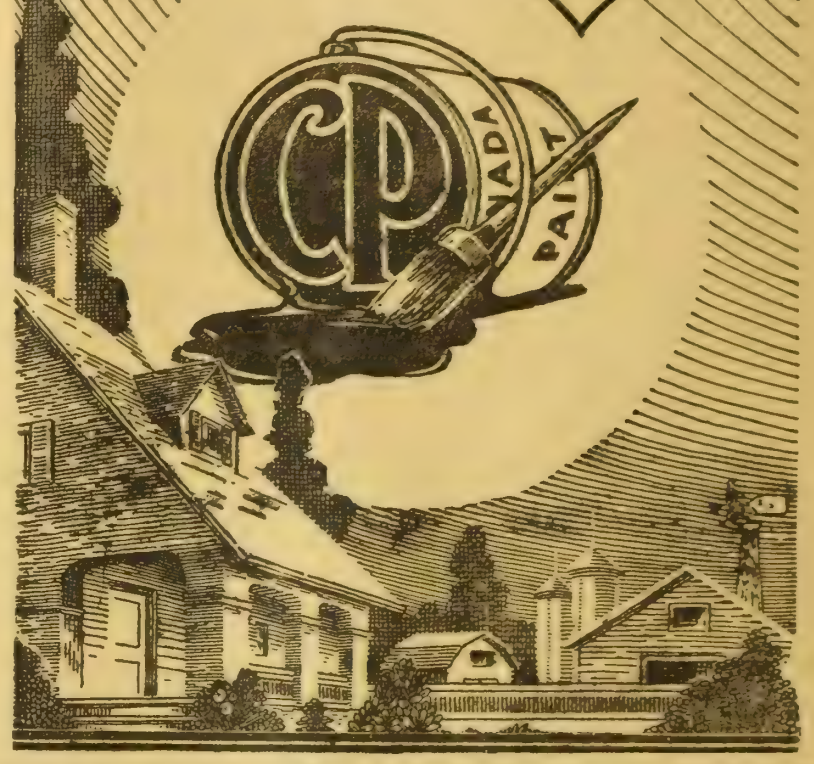


A GARDEN FULL OF VEGETABLES FOR $1

In preparing the following Home Collection of Vegetable Seeds, which, if purchased separately from our catalogue, would cost $1.50, we have given critical attention to the varieties offered, selecting only those which have been tried and proven of excellent merit under widely different conditions of soil and climate.

One packet each of the following for $1.00

Beans—Sutton's Masterpiece
Beans—Ferguson's Golden Wax
Beets—Ferguson's Imp. Dark
Carrot—Ferguson's Early Market Red
Corn—Golden Bantam
Cucumber—Davis' Perfect
Lettuce—Ferguson's Peerless
Lettuce—May King
Onion—Ferguson's Red Wetherfield
Parsley—Ferguson's Perfection
Peas—Gradus
Radish—Long White Icicle
Radish—Ne-Plus-Ultra
Swiss Chard—Giant Luculus
Turnips—Early Stone

ORDER YOUR COLLECTION NOW

Mail this advertisement with Check, Money order, Dollar Bill, or Stamps, or present at our store, and secure this excellent collection of Vegetable Seeds for only $1.00 sent prepaid anywhere in Canada.

Our Spring Catalogue sent on request.

DUPUY & FERGUSON
38-42 Jacques Cartier Sq., Montreal

THE AGRICOLA CENTENNIAL

The world owes a great deal to men of vision—men who recognized possibilities, and who formulated ways and means whereby the latent possibilities might be brought to light and put into successful operation. Men such as these have set ideals towards which many of their fellow men have set their faces in the onward movement of their respective professions to a higher plane. Might movements frequently eminate from small beginnings. Such a movement we find in the development of agriculture in Nova Scotia. One hundred years ago agriculture was a despised and neglected art in that province. Men were in the habit of apologizing for being farmers and their methods were frequently crude. People from the Old Country believed that her climate rendered farming in Nova Scotia little better than a joke, while the Americans made merry over the efforts of the Provincialist farmers and sold them most of their food.

How a man of vision changed all this in a few years by proving conclusively that Nova Scotia's climate and soil were fitted for the development of practical farming and putting confidence into the hearts and knowledge into the minds of men of the land is clearly set forth in the following extracts from a letter to the Maritime Farmer by Prof. Cumming, Secretary for Agriculture and Principal of the Nova Scotia Agricultural College, a gentleman who has been in the formemost ranks of those who have given and are giving our agriculturists a broader vision of the possibilities of their calling:

"On July 15, 1918, the first of a series of 38 letters on Agriculture signed by Agricola, appeared in the Acadian Recorder, a newspaper still published in the city of Halifax. The occasion of the publication of these letters was a marked depression in Colonial business following the conclusion of the Napoleonic wars, during which the Atlantic Provinces in particular had been extremely prosperous on account of the profitableness of building ships and prosecuting various lines of trade in connection with the war. The depression had become so marked that real estate values had diminished and the country was facing still greater depression.

"Agricola, who nine months afterward revealed himself as John Long, a gentelman who migrated frrom Glasgow, Scotland, in 1814, who prosecuted business in Halifax and who subsequently bought and operated a farm at Willow Park, near the Exhibition Grounds at Halifax, argued in the course of his letters that the only hope for the prosperity of the country ws the development of its agriculture. The letters aroused the most enthusiastic response and were responsible for the rejuvenation of the art of agriculture in Nova Scotia. Within less than a year of the publication of the first letter, 25 Agricultural Societies and a Provincial Secretary at Halifax were organized, a system which has remained in existence ever since that time.

"Agricola himself was appointed Secretary of the Provincial Agricultural Society and subsequently as Member of the Legislature of Nova Scotia for the then County of Sydney (now Antigonish) pioneered the present Department of Agriculture.

"On the centennial of the appearance of these letters of Agricola, the Acadian Recorder has begun the republication of these letters.

Last year a great interest was taken in the erection of a memorial to Herbert, the great agriculturist of Quebec. It would seeem fitting that some similar recognition should be given Agricola, the great pioneer of agricultural development in Nova Scotia.

"Already it is planned to erect a fitting memorial to him in Nova Scotia and in the meantime marked interest is taken in the appearance of the letters.

"I am sure a reference to this in the columns of your paper would be very much appreciated by readers in Nova Scotia."

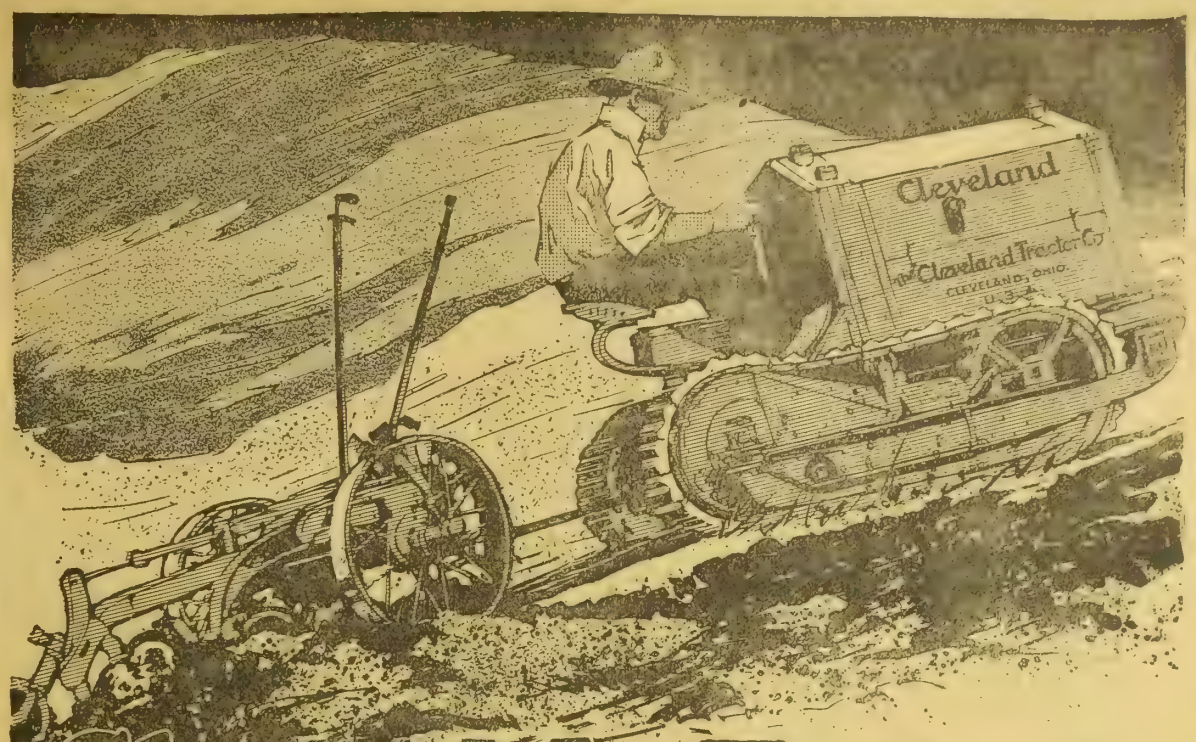
The thirty-eight letters were devoted to the following subjects:

1.—The low state of Agriculture and trade in the Province.

2.—Agricultural Societies.

3.—Benefits elsewhere of such So-

(Continued on page 787)



Show Me Facts !

BEFORE you buy *any* tractor you have every right to say to the manufacturer : "Show me what the USERS of your tractor have to say. *Show me* that it has already proved itself economical and practical in everyday work. *Show me* the *figures* your *users* have given you so that I may figure costs and so determine why I should own one of your tractors."

Here, then, is part of one of the large number of letters constantly received from farmers telling us what their *Cleveland Tractors* do for them.

To begin with, I used my Cleveland Tractor to plow about 305 acres during 1918 and used double discs, two 60 tooth harrows and a heavy wooden drag on one load for fitting.

When I plowed I covered from eight to ten acres a day with a two-button gang and covered about 40 acres a day with the harrows.

I harvested 150 acres of wheat and oats at 25 acres per day.

In July I used the Cleveland in loading hay, and got in the crop from 140 acres at the rate of about 35 tons a day.

Besides these things, I used my Cleveland for a great many belt jobs—put in 300 tons of ensilage in 32 hours, on 30 gallons of kerosene, for instance.

I now keep six horses instead of the fourteen I had before and need two men less than previously.

My Cleveland is in excellent condition, ready for the 1919 season, and counting everything, I haven't spent over $10 for repairs.

F. H. JOHNSON,
New Augusta, Indiana.

Such specific, definite facts tell why the Cleveland is so fully justifying the faith that so many farmers have placed in this compact, powerful Tractor. *Write today* for complete information and the name of your nearest Cleveland dealer.

The Cleveland Tractor Co.

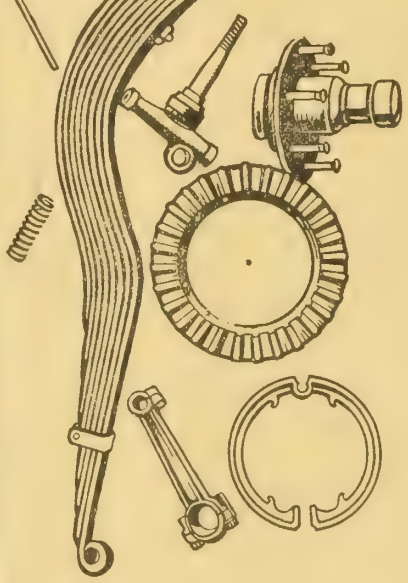
19129 Euclid Ave. **Cleveland, Ohio**

The largest producers of track-laying tractors in the world

The Cleveland Tractor Company of Canada, Limited, Windsor, Ont.

Cleveland Tractor

Now *Staple* Articles of Trade



THE parts of a Ford car—*every* part—can be bought *anywhere* in Canada.

They need not be "ordered from the factory."

—nor from a Ford Branch.

—nor even from one of the 750 Ford dealers.

They can be delivered "on the spot" by over 2000 garage and repair men.

Although highly specialized pieces of engineering and machining, Ford parts have become *staple articles of merchandise*. They are as easy to obtain as a hatchet or a saw.

This is a most unusual service to the owner of a car.

Its value is incalculable.

The Ford car need never be "tied up" while repair parts are being "brought on from the factory."

There need be no annoying delays while touring because Ford Service Stations are located everywhere.

The owner of a Ford (barring serious breakdown through accident) may enjoy uninterrupted use of his car.

Caution to Ford Owners

Never allow "spurious" or imitation parts to be used in repairing your Ford. Your repair man—if he is earnest in his desire to serve you well—can get genuine Ford parts and sell them to you at a reasonable profit.

You need never accept "spurious" repair parts. In any locality, in any emergency, there is sure to be close at hand, a Ford Service Station.

Demand genuine Ford parts. Be firm.

Keep your Ford running at full Ford efficiency.

FORD MOTOR COMPANY OF CANADA, LIMITED, FORD, ONT.

DEMAND Genuine Ford Parts

91

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 24. SUSSEX, NEW BRUNSWICK, APRIL 22, 1919. Number 14.

N. B. Fruit Growers Annual Convention

The fourteenth annual meeting of the New Brunswick Fruit Growers' Association was held in the Council Chamber of the Fredericton City Hall on April 2nd. A representative number of members were present.

The President's Address

When the convention opened the President, Mr. S. B. Hatheway, of Springhill, York County, read the following address:

"Your executive has considered it in the best interest of the Association to hold the annual meeting apart from any other organization. We have felt that our members are sufficiently interested to attend a busines meeting where fruit growing alone is discussed without having to offer other inducements to come to Fredericton.

"As you have observed, the programme we have prepared has to do with all phases of fruit growing and althought the total fruit output of the Province is not large yet we must consider our possibilities for greater production rather than present conditions.

"The strawberry crop in 1918 throughout the province, was one-half to two-thirds of an average. Prices generally were high and yet thousands of boxes from up-river points sold in St. John for comparatively low prices. While these growers have learned to expect such prices there is absolutely no reason why they should.

"During the discussion on berry growing it wil lbe shown that by organization with proper methods of handling and packing, New Brunswick strawberries can be sold at prices that will make it a very attractive business.

"Other soft fruits have not been allotted any special place in the programme yet it is to be hoped that some of the members will discuss their growing and marketing. Undoubtedly we have a splendid opportunity to develop the raspberry and gooseberry shipments to the equal of the strawberry business.

Good Prices for Apples

"Apples, the past year, while a short crop, returned exceptionally high prices. No. 1 McIntosh sold as high as $8.00 per barrel and $3.50 per box, while the fall varieties shipped through the Association returned prices ranging from $4.16-$4.60 for No. 1; $3.73-$4.16 for No. 2; $2.85-$3.29 for Domestic, and $2.40 t o$2.85 for No. 3, f. o. b. coach, Fredericton.

"It would seem that there is no connection between price and demand of apples, the public are going to have them at any price. The only desert apples offered on New Brunswick markets after December 1st have been Western boxed at a wholesale price of $3.50 or more per box. There is no reason why our McIntosh, Wealthy, Fameuse and Pippins should not supply this local demand. Again, as in the berry growing, we must be organized and devote our energies to better fertilizing, pruning, spraying and grading produce apples of quality that the public wants and is willing to pay for.

"Our Horticultural Department, under Mr. Turney, has accomplished a great deal. Much of the work is educational—calling on individual growers and giving pratcical advice and help in looking fter their plantings. In so doing, this Department, while not being able to show tangible results in dollars and cents, yet is doing a work that we must concede is greatly needed and demonstrates that the Department is justified for this purpose alone. For the future welfare of the province it is the duty of this Association, through our Department to make it known that fruit can be grown on New Brunswick farms and, secondly, that large portions of the Province are as well adapted to the production of fruit as other crops.

"Through the efforts of our Department we are now able to buy nursery stock from Provincial nurseries. Our local nurseries, with assurance of recommendations from the Department, have increased their supply and offer all suitable varieties in excellen quality.

"Another feature in the policy of the Horticultural Division that is highly commendable is the establishment of commercial test orchards in different parts of the province, with the best men attainable, in order to get detailed information as to cost of growing, time for development, and comparisons in methods of handling.

"Some years ago the Horticulturist prepared a bulletin on 'Orchard Opportunities in New Brunswick.' This was revised in 1914, but the issue soon became exhausted and with the additional knowledge we have today, I think that a new and revised issue is advisable. In this conection it would be a benfit to point out the opportunities for bee-keeping.

"Probably nothing has appealed to our members as much as the co-operative shimpments of apples so ably organized by our secretary. The return has been satisfactory and the rapid handling enabled growers to clean up their crop early in the season. It is to be hoped that the shipments will be continued another year.

"Another feature is the purchase of all kinds of suplies for our members at cost price. In this conection I would point out that there is a prevailing idea in some quarters that it is the Government who handles these supplies and is cutting into the retail men. Other reports are that our secretary is acting as agent for the manufacturers and pushing certain lines on the growers. These inferences are due partly to the fact that the secretary is a Government official, but I wish to assure the members that the business of the Association is done through the executive of which sercretary is a member, and not through the secretary alone.

"In conclusion, let me ask each of you present to enter fully into the spirit of this meeting. The subjects we will discuss are most helpful only when everyone hase their say—our welfare is mutual. If there is anything you have to ask about fruit growing, the asking and the aswers will benefit not only yourself but the others present."

Provincial Horticulturist Presents His Annual Report as Secretary-Treasurer of the Association.

Mr. A. G. Turney, the energetic secretary-treasurer and provincial horticulturist, then read his annual report, which was as follows:

I beg leave to submit my report, which is divided into two parts, the first dealing with the secretarial and general work of the association and the second, with the financial statements.

This association, which was organizen in 1902, continues to do good work for the advancement of fruit growing in New Brunswick. Encouraged by the active sympathy and support of the Department of Agriculture it has steadiyl increased its membership. The growth in this respect is as follows: 1905, 34 members; 1906, 37 members; 1907, 37 members; 1908, 30 members; 1909, 24 members, 1910, 79 members; 1911, 115 members; 1912, 72 members; 1913, 113 members; 1914, 122 members; 1915, 91 members, 1916, 110 mebemrs; 1917, 151 members; 1918, 128 members.

During the past year the association continued the co-operative work of supplying its members with nursery stock and spraying materials and supplies, and distributed goods to the value of $3,000. The supplies handled consited of lime sulphur, soluble sulphur, arsenate of lime, hydrated lime, Black Leaf 40, Paris Green, bluestone, power and hand-spraying outfits, pruning shears, barrel presses, berry boxes and crates, apple barrels apple boxes, wrapping and lining papers, venner tree protectors and nursery stock.

It is with a good deal of satisfaction that I call your attention to the gratifying financial position of the association—the bank blance of October 31st, 1918, plus the excess of assets over liabilities giving us approximately $1,370. I am not one who believes in accumulating a balance at the expense of carying on important work but as yet we are hardly open to this criticism for a substantial balance is necessary to the most advantageous purchase of materials, and it must be remembered that one-half or more of our value is always in outstanding accounts and supplies carried in store. However, Ithink we have about reached the time when the association can begin the development of a still more ambitious and useful programme and this is a matter which I hope may receive proper consideration before the members now in attendance leave for their homes.

Rated as Agricultural Society

Some years ago I made application to the Superintendent of Agricultural Societies for the granting to this association of a charter as a regular Agricultural Society, so that we might have all the privileges and protection which they have, and receive a regular annual grant based on our membership. I think you will agree that as an organization we are, to say the least, as active and energetic as any of the regular Agricultural Societies and deserving of equal encouragement.

At the last annual meeting I was appointed a delegate to represent the association and New Brunswick at the Conference of Dominion Fruit Growers to be held at Ottawa on March 26th and 27th. Accordingly I attended the meeting which I am glad to report was most successful.

During the past ten years previous conferences and various provincial and local meetings of fruit growers had from time to time discussed and suggested certain improvements to the conference was to complete that work and crystalize it into definite recommendations for enactment into legislation at the coming session of Parliament.

The late Mr. D. Johnson, then Dominion Fruit Commisioner, presided at all the sessions and was assisted by Messrs. C. W. Baxter, G. E. McIntosh and F. H. Grindley, members of his staff. Representatives and inspectors from the different provinces, together with representatives of the barrel, box and basket manufacturers constituted the conference of about thirty-five members.

The ease and dispatch with which apparently conflicting views were harmonized and questions of years of contention were amicably settled enabled the meeting to crystalize in two days matters that had drifted on for years and to pass resolutions the substanace of which became law on May 24th, as amendments to the Fruit Marks Act. These resolutions in detail may be found on pages 105-107 of the Report on Agriculture for 1918 and no doubt reference to some of them wil be made later in this meeting.

In the untimely death of Mr. D. Johnson, who did much to bring about the amendments to the Fruit Marks Act, the fruit growers of this province and the rest of Canada lost an able, energetic and prudent admistrator. Those of us who were privileged to have met and known Mr. Johnson feel that his death had removed a warm personal friend, and an enthusiastic, whole-hearted worker in the interests of the Canadian fruit industry.

Summer Field Day Advocated

For some years I have felt that the Association might, with advantage to its members and the fruit industdy, hold a ummer meeting in the form of a field or inspection day. Such a meeting would afford growers an opportunity of seeing some of our best

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Farm Notes From Nova Scotia

OPTIMISM IN THE CREAMERY BUSINESS

During the past month a number of Nova Scotia Creamery organizations held their annual meetings. As many as possible of these were attended by representatives of the Dairy Branch at Truro. In every case renewed interest was manifest and optimism expressed regarding the future of the business.

The Antigonish Dairy Company held its meeting on March 5th. The reports shewed an increase in business during the year. To encourage herd improvement among its patrons a resolution was passed authorizing the payment of a bonus of $5.00 at the end of the season to each person who will carry on cow testing during the year.

The Pictou Co. Cooperative Creamery Co. met on the 6th. It was decided by way of a forward step to hold a monster picnic during the summer for its patrons. A substantial grant of money was also voted for the encouragement of cow testing.

On the same date the Cumb. Cooperative Creamery Co., held its annual meeting at River Hebert. This Company has been fighting for existence for a number of years; but this year it recorded an incerase in business of over 50%, which puts it on a good working basis, and the prospects are bright.

The La Have Creamery Co. met at Bridgewater some three weeks earlier. This company has become the second largest in the Province, and the people of the district are determined to make it the largest. In no place is there greater enthusiasm over dairying than here.

The Scotsburn Ceramery Co. met on March 11th. This Company has developed from a business of $4,000 in 1908 to a business of $200,000 in 1919. Probably in no place has a company realized so fully the importance of close cooperation between the company and the milk producer, with the result that, among those who have taken advantage of it, a great increase per cow has been made. Plans are being developed for yet more strenuous work this year.

A number of companies have not yet held their meetings, but there is good spirit everywhere, and a keener realization of the fact that the interests of producer and manufacturer are really one, and their welfare must be sought in common.

POTASH ON POTATO LAND

Potato growers will be interested in an experiment carried out by the Horticultural Division of the N. S. Dept. of Agriculture, Truro, during the season of 1918. The main object of the experiment was two-fold: To ascertain, 1. Is Potash so necessary an ingredient in the production of potatoes that it can be profitably used at the extremely high price which is now commands? 2. If it should be used, what quantity per acre is best and most profitable?

Former experiments at the College indicated that no great benefit is to be derived from the use of Potash on lands which had in previous years been liberally supplied with barnyard manure, and were therefore well furnished with this ingredient. The 1918 experiment was tried on land that is naturally poor, a light sandy loam which had been in pasture for a number of years.

Two kinds of fertilizer were used in the experiment, a home-made and a commercial mixture, both containing throughout 3% Ammonia and 10% Phosphoric acid. Each of these mixtures was divided into four parts, one of which was used as it stood, i.e., as a 3-10-0 mixture. The other three lots had varying amounts of muriate of potash added to make mixtures containing 1%, 4% and 10% of potash. The four lots of fertilizer used, then, may be designed as 3-10-0, 3-10-1, 3-10-4 nd 3-10-10, in both the home-made and the commercial forms.

The plots were each 1/16 of an acre in size and the fertilizer was applied at the rate of one ton per acre, no barnyard manure being used. The varieties of potatoes grown were Irish Cobbler and Dreer's Standard. Throughout the season a difference could be clearly seen in the appearance of the plots. The foliage of the potatoes on the plots to which no potash had been applied was greenest in colour, and the growth was tenderest when the fall frosts came. Those to which fertilizer containing potash was applied were lighter in colour and less injured by the fall frosts. The ripening of the tops reached a higher degree where potash was used, and was greatest on the plots where the greatest amount was applied.

The following tables show the yields cost of production and net profit per acre of the different plots.

HOME MIXTURE

3-10-0 ...	249.23	$232.94	$89.00	$36.08	$125.08	$107.86	
3-10-1 ...	238.175	231.00	89.00	41.08	130.08	100.92	$6.94 Loss
3-10-4 ...	283.16	266.75	89.00	56.08	145.08	121.67	13.81 Gain
3-10-10 ..	321.06	304.39	89.00	86.08	175.08	129.31	21.45 Gain

COMMERCIAL MIXTURE

3-10-0 ...	235.39	$218.99	$89.00	$45.00	$134.00	$84.99	
3-10-1 ...	228.36	215.79	89.00	50.00	139.00	76.79	$8.20 Loss
3-10-4 ...	250.845	237.45	89.00	65.00	154.00	83.00	1.99 Loss
3-10-10 ..	297.355	280.55	89.00	95.00	184.00	96.55	11.56 Gain

Detailed cost per acre of growing potatoes.

Preparation of land and drilling	$8.00
Planting by hand	10.00
Seed, 15 bushels at $1.40 per bushel	21.00
Cultivating	8.50
Spraying, 5 times	12.50
Weeding out cadlock by hand	7.00
Digging and harvesting	22.00
	$89.00

Detailed cost of Fertilizers—Home Mixture and Commercial Brand.

Home Mixtures.		Commercial Brand	
Nitrate of Soda	$110 per ton	Commercial 3—10 fertilizer	$45 per ton
Acid Phosphate	$30 per ton	Muriate of Potash	$250 per ton
Muriate of Potash	$250 per ton		
Home Mixture 3—10—0		**Commercial Brand 3—10—0**	
330 lbs. Nitrate of Soda	$17.33	2000 lbs	$45.00
1250 lbs. Acid Phosphate	18.75		$45.00
1580 lbs	$36.08		
Home Mixture 3—10—1		**Commercial, 3—10—1**	
1580 lbs. as above cost	$36.08	2000 lbs. as above cost	$45.00
40 lbs. Muriate of Potash	5.00	40 lbs. Muriate Potash	5.00
	$41.08		$50.00
Home Mixture 3—10—4		**Commercial, 3—10—4**	
1580 lbs. as above cost	$36.08	2000 lbs. as above cost	$45.00
160 lbs. Muriate of Potash	20.00	160 lbs. Muriate of Potash	20.00
	$56.08		$65.00
Home Mixture 3—10—10		**Commercial, 3—10—10**	
1580 lbs. as above cost	$36.08	2000 lbs. as above cost	$45.00
400 lbs. Muriate of Potash	50.00	400 lbs. Muriate of Potash	50.00
	$86.08		$95.00

Price of Potatoes

Marketable table potatoes were sold for $1.00 per bushel.
The small potatoes were sold for .50 per bushel.
Both grades are included in the returns from each plot.

While the results of the experiment cannot be fully set forth except in a rather elaborate tabular form, the main facts brought out are these. 1. That the application of potash in considerable quantity on certain soils, even at the present high prices, pays well. 2. That the application of small quantities on the same soil and with the same conditions gives so little results as to be practically lost. To be more specific—The addition of 1% of potash increased the cost of the fertilizer $5.00 per acre, while no gain in yield occurred. The addition of 4% of potash increased the cost of fertilizer $20.00 per acre, but the yield showed a corresponding increase of some 35 bushels per acre, thus more than compensating for the added cost. The addition of 10% of potash, increasing the cost of fertilizer by $50.00, resulted in a gain of about 70 bushels per acre.

These results are only from one year's test and are offered for what they are worth. It is worthy of note, however, that legislation has been enacted in several States of the Union prohibiting the sale of fertilizer containing less than 2% of Potash.

NOTES FROM THE COLLEGE OF AGRICULTURE, TRURO

The Cheese Makers' and the Milk Testers' courses, which ran concurrently from March 25th to April 3rd, have passed off successfully. Mr. H. W. Coleman, Dairy Superintendent of New Brunswick, and Mr. F. T. Morrow, Dairy Inspector for Prince Edward Island, were instructors. In the Milk Testers' course Mr. H. R. Brown was the instructor in charge. Mr. Brown is Supervisor of Cow Testing Associations in Nova Scotia.

Students in Attendance.

Cheesemaking Course, March 25th to April 3rd, 1919:—

Fred Myers, Malagash, R. R. No. 1, N. S.; B. R. Keith, Butternut Ridge, N. B.; Fred Fawcett, Killams Mills, N. B.; Miles Perry, St. John, N. B.; Harry Parlee, Folkins, N. B.; Albin Gallant, Mount Carney, P. E. I.; Heber McQuarrie, Summerside, P. E. I.; John Murcheson, Orwell, P. E. I.; A. W. Jones, Hazelbrook, P. E. I.

Milk Testers Course, March 25th to April 3rd, 1919:—

Herbert Murray, River John, R. R. 3, N. S.; Walter W. Smith, Shenimicas, N. S.; Miss Mary Fraser, Lower South River, N. S.; Patrick Hebert, Rogersville, N. B.; Urbaine L. Breau, St. Anthony, N. B.; Arthur H. Daigle, St. Charles, N. B.; A. C. Cock, Waldegrave, N. S.; Mrs. A. C. Cock, Waldegrave, N. S.; Miss McConnell, Antigonish, N. S.; Miss K. McArnias, Antigonish, N. S.

STANDRADIZATION OF FARM MACHINERY

Years ago the apples of the Annapolis County Valley were put into barrels and shipped to England practically as "run of tree." What price did these aples bring? That they sold at all was due to the fact that all apples in competition were packed in the same way, that is to say there was no particular grading of apples in those days. The same conditions obtained in the shipping of other fruits, vegetables and grains. Without following the grading or standardization of these foods just remember how they are sold and marketed to day.

Wheat, for instance, is graded and sold acocrding to standard, and pretty much all other farm crops are sold in same way. Butter, and all products of the dairy are today standardized. We all know the benefits derived.

Why not then adopt a standard in the manufacture of farm machinery of all kinds?

War measures forced the great milling companies of Canada to remodel their machinery so as to produce a standard grade of flour. The United States of America, which manufacture, use and ship more farm machinery than any other country in the world, appointed what is known as the United States Commercial Economy Board of the Conservation Division of War Industries Board. This Board in co-operation with the manufacturers of machinery made recommendation that practically 2,000 styles of the various implements could be eliminated from manufacture.

I have here the list of implements the manufacture of which the Board recommended to be discontinued and the dates when manufacture ceased.

Another illustration of standarization is the wooden and steel shipbuilding such as prevails at the Hog Island yards, one of the largest steel ship building plants in the world. I might also mention the evolution of the Liberty Motor.

Last winter a delegation from the British Government visited New York for the purpose of discussing possible co-operation between the two Governments in standardizing motor trucks, airplanes and other equipment. If the war had continued these and other reforms would have been accomplished. There is, however, no reason why this movement should not be developed in the arts of peace.

One of the main ideas of this movement is to lessen the cost of selling repairs. Instead of several merchants and implement dealers carrying repairs, one merchant or blacksmith could carry repairs that would fit any machine, wagon, motor or implement. At present a farmer has to purchase these repairs from the agent for the particular kind of machine he sells. This often means los of time, crop and money. One reason for the vicious system at present in vogue is that agents, encouraged by the implement manufacturer, try to make

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Potato Grading and its Relation to Market Prices, Transportation and Consumption

Address by Guy G. Porter, of Perth, N. B., at the Recent Potato Growers' Convention, Woodstock

I want to congratulate the potato growers of this Province on the advances they have made in the potato industry, during the last few years. Two reasons which help your position greatly, are undoubtedly, our suitable climate and soil. A great deal of credit is due to the pioneers in the potato industry of this Province and also to the efforts of the working heads of the Association. Neither climate nor soil will produce potatoes without hard work, and hard work, unless properly directed and coupled with scientific knowledge, will not produce the results we are striving for.

Grading and its Relation to Seed Selection

We must select our seed with the utmost care, being sure to use nothing but sound tubers, of medium size, free from all diseases. We must also select seed of straight varieties and true to type. We are cursed in New Brunswick, to a very large extent, by planting mixed varieties, and as a result, we are at the present time, receiving from 10c. to 30c. per hundred pounds less for our potatoes in the large consuming markets than the Aroostook County Shippers, who pay more attention to seed selection and the planting of straight varieties. Our seed potatoes are not only mixed, but as a rule, are grown from weak seed, and are of poor eating qalities. Certain varieties of potatoes are better to eat than others, just as certain apples are better than others. Moreover it is possible to grow varieties for boiling, others for baking and still others for starch. The production of potatoes of good eating varieties would not only be a surprise to 95% of our population but would increase our per capita consumption of this article. We have found the good eating apples, but we have neglected the good eating potatoes. Uniform and shapely potatoes are much more economical than the general run of mixed and unshaped tubers now found in our market, because they can be peeled thinly with the minimum percentage of waste and the best food elements of the potato lie close to the skin.

If you plant mixed varieties and unshoped potatoes you canot help but raise a mongrel crop, and it is impossible for the farmer to deliver to the potato buyer a good, clean, smooth crop from such seed. He will have a crop of mixed varieties, all shapes and sizes, including cuts and damaged tubers and marbles which should have been kept on the farm for stock feeding. The consumer has been getting a large percentage of trash in his potato basket, and there is little wonder he only eats the equivalent of one normal potato daily. And there is little use of asking him to eat more unt liwe can make it worth his while in better quality and value.

Therefore, let us begin to grade our potatoes, by selecting the seed properly.

Grading and its Relation to Proper Cultivation

It is of course important that good, clean ground be selected, in which there are no contagious diseases carried over from season to season. All good farmers, I believe, recognize the importance of frequent and thorough cultivation. In dry seasons this conserves moisture and in wet seasons it prevents an abundant growth of weeds. By properly cultivating the potatoes are hilled up so that we get a minimum of sun-burn and frosted potatoes when digging. Any potato crop which is not properly cultivated will be stunted in growth. Therefore, cultivation is highly essential, and bears directly on the quality of the potatoes to be harvested. If you get s smal, stunted growth, it is impossible to grade them properly, for the general average is small, and even by throwing away a very large percentage of the small potatoes, it is impossible to have the balance present a good appearance.

Spraying and its Relation to Grading

From my observation and experience, I believe it is impossible to raise a good, clean crop of potatoes, without proper spraying with Bordeaux Mixture. It has been estimated by scientific men connected with the potato industdy of this Province that 25% of our crop is lost through preventable diseases, which could be controlled or almost eliminated by proper spraying. It has been shown beyond all doubt, that proper sprsying increases the yield from 5% to 20%. Increasing the yield means potatoes of better size and quality. I fully believe that the increase in yield alone, from thorough spraying, will more than pay for the cost of spraying, and I also believe that the quality will be improved very materially. Improvement in quality is just as necessary as increase in yield. And I am strongly convinced that only as long as we produce the best quality of potatoes possible, with all our advantages of soil and climate, will be able to hold first place in the potato industry in Canada. Potatoes properly sprayed will keep muhc better in storage. I han an instance in our own business this fall, where we stored a carload of potatoes from a certain section, and the potatoes looked to be in first class condition, when put into the warehouse in October. We loaded these potatoes out about three weeks ago, and were surprised to find that nearly 20% of the potatoes were affected with dry rot. We took the trouble to find out who loaded these potatoes and found that they had not been sprayed. This convinces me that spraying is not only necessary, but profitable. As one of the most difficult jobe we have in grading our stock for market is taking out the drp rot, which can be prevented by proper spraying.

Digging and Delivery to Warehouse and its Relation to Grading

I believe that fully 10% of the entire potato crop of New Brunswick is spoiled by rough handling between the field and the shippers' warehouse. Many farmers and warehouse men handle their stock so roughly that the entire value of the crop depreciates fully 10% from bruises, cuts, cracks, etc., which later develope dry rot and deterioration. By rough handling, the nice, sound, smooth appearance is lost, when the potatoes are delivered at the buying point. Estimating the potatoc rop at ten -million bushels, and estimating the price as low as 50c. per bushel, the farmers are losing half a mililon dollars anually by rough handling. This amount of money which is lost through careless handling would pay the expense of selling the entire crop under proper organization. I advise you, gentlemen, to handle your potato crop more carefully, and cut out this unnecessary waste. The potato crop is one which can be raised profitably in this Province, providing the waste in raising and marketing can be eliminated. This 10% waste in handling, if converted into dollars and cents, would pay the interest on the debt of the Province every year. It is therefore important, specially at this time of general economizing, that both farmers and shippers elarn something about economy in the handling of their potatoes.

Grading and its Relation to Market Prices

Until very recently the farmers in this province made little or no atempt to grade their potatoes properly before bringing them to market. Competition has been so keen between the buyers that until last fall thy paid little attention to grading. The potato shipper seems to be afraid to be particular about the quality and size, fearing that he may drive his customer to some other shipper, who would accept the poor quality without protest. He overlooks the fact that in accepting the load of poor potatoes, he does an injury to the farmer who is bringing to market first class stock. He dumps them all in the same car together, and, as a result, the good stock which should have graded No. 1 is mixed with the poor stock, which would grade No. 2, and the whole car is thereby made nothing better than No. 2 grade. We all know that it is impossible to get the top price for a poor article. While on the other hand, a good article always brings the top price in any market, so in order to keep up the reputation of New Brunswick, and the potato industry of this Province, we must co-operate and work out and maintain a satisfactory method of grading. The growing end and the shipping end of the potato business, are separate and apart. So much so, that the growers generally take all the profit, and put the shippers in for all the losses. Still the interests of the potato growers and shippers are so closely connected, that the closest co-operation concerning quality and grading, would undobutedly be of advantage to both. Interlocked with these interests again, are those of the buyer and the consumer, whose money, we have to depend upon to keep the industry going. I can show you today, where New Brunswick potatoes are selling from 10 to 30c. per hundred pounds lower than Aroostook County Graded Stock, simply becouse our varieties are mixed and our stock is not properly graded for size. This has a direct bearing on the market price, and if we expect to stay in business and compete with other potato-growing sections, we must grade our potatoes properly so that we can get the top price.

I believe the best Grader we have on the market today is the Boggs Potato Grader, which is a very simple machine, belted with a wire mesh of suitable size, and grades No. 1's, 2's, and 3's at the same operation. The old fashioned system of grading over a hand rack is obsolete and does not give a unform grade. In using the old-fashioned hand rack you leave the grade entirely to the opinion of the individual at work, and I have found from running a number of houses, that the judgment of the men using the hand rack, varies very materially. In fact, so much so, that you would not recognize the grade as being similar to the grade put out at another house. It is impossible to grade potatoes economically and well on the old-fashioned rack. You have to depend upon your eye and your hand. You are either throwing out too many large potatoes, or not taking out enough small ones. I am therefore convinced that a system of mechanical grading is the only proper method.

About twenty-five years ago an organization of farmers on the Eastern Shore of Virginia formed themselves into a corporation wnown as the Eastern Shore of Virginia Produce Exchange. For the first few years they marketed their potatoes ungraded in the large cities up and down the Atlantii Coast. Their potatoes went on the market at a very opportune time, beginning about the 1st of June and finishing about the 1st of September, at a time when Northern grown stock did not come in competition. Nevertheless, it was not long before they conceived the idea that they should be selling their potatoes according to grade, and about ten or twelve years ago they decided to grade their potatoes No. 1, 2 and 3, and have continued to do so ever since. This was long before any compulsory grading in the United States was ever heard of. Last year this organization sold upwards of 3,000 carloads, and their New England salesman told me a few days ago that he only had two rejections in the New England territory last season. This goes to show that the buyer has confidence in the grade and is willing to pay the top price. Compare this with our system of shipping out anything and everything as we do from New Brunswick, and I believe you will decide that in order to get the top market price for potatoes we must first grade them.

I have seen potatoes from every Province in Canada and can say without hesitation that if our potatoes were graded, they would be in a class by themselves, but as they are today, being shipped ungraded to the different markets, we are finding it difficult to hold our own, and unless immediate steps are taken to put a better grade article on the market, we will not be able to compete with other potato growing sections. I might also state that the South Carolina Produce Exchange started in eight or ten years ago to ship ungraded potatoes. These potatoes went on the market, chiefly in competition with Virginia stock, which at that time was graded. The South Carolina people found they could not compete and hold their customers by shipping ungraded stock. They therefore decided about four years ago to grade their potatoes, and have continued to grade ever since with satisfactory results.

Transportation and its Relation to Grading

We very often have a car shortage in this province and very often this car shortage comes at a itme when we are most anxious to ship. Our firm has often been hard up for cars at a time when we would have anywhere from one to five cars turned down at destination on account of improper grading. This means a delay of anywhere from two days to three weeks in the unloading of cars. The consignee simply refuses to accept the car unless a special reduction in price is made. This generally takes from two days to a week, as the shipper must first satisfy himself that the reduction is warranted. He must inspect the car and finally arrange with the consignee, or some other buyer, to take the car over at a reduced price. This ties up the Railroad equipment, which is directly an injunry to the shipper, and besides this, the shipper generally has to pay the demurrage at the other end, which now runs from five to ten dollars a day, after the car has been at destination over five days.

Proper grading would eliminate these rejections and give us a better and omre regular car supply.

Consupmtion and its Relation to Grading

The potato is a key commodity in the food situation. It furnishes bulk and nourishment for price as no other food commodity can do. During the war when an attempt was made to save wheat and meat, our food experts

(Continued on page 786)

THE MARITIME FARMER

And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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DATES OF ISSUE.

May 6-27
June 10-24

APRIL 22, 1919

THE CHILD'S EDUCATION

Some doubt it, some disbelieve it, but history points out that most of the successes in all walks of life go to those best fitted by education. Some succeed by what they have learned outside of schools. They succeed in acquiring much learning by hard work and close observation. Their path would have been easier, their success greater with better schooling.

An education is no guarantee that a person will be a success in any line he may choose. It is no insurance against failure if one tries to follow an occupation for which he has no liking or aptitude. Education does not always give judgment. But the educated man has the best of it in any undertaking, for he can the more readily acquire the knack and the knowledge necessary to do the thing in hand.

Too many parents leave the education of their children entirely to the teachers. A considerable number of failures in life are due to this lack of interest in the education of the children on the part of parents. The child gets discouraged because he cannot understand some of the things in class work. The teacher may not notice the cause, and the child soon drops out simply because the parents have not willingly given a little help and encouragement or have failed to back the teacher. When parents sneer at education, or run down the teacher, or use every little excuse for keeping a child at home, the best of teachers will fail to give that child an education. He is handicapped for life.

There must be the closest harmony between parents and teachers if the school is to fulfill its mission. The parents must know educational problems and help in their solution. You do not leave the planning and execution of farm work to the hired man. Take as much interest in the children as in breeding and feeding and housing the livestock, and the children will rise up and call you blessed in the years to come.

THE FARM INVENTORY

An inventory taken once a year will show the net worth of the farm. By comparing inventories from year to year the exact progress of the business can be found. Many times a farmer feels discouraged at the end of the year because his cash is short, when an inventory taking in growing stock and crops, and unsold products would show that a handsome profit had been made for the year.

In taking an inventory the farmer must go over all of his property at least once a year. In this way his attention will be called to the condition of his stock, machinery, etc., and naturally, needed repairs, changes, etc., will be suggetsed and made.

Another step in stopping leaks in the farm business is to keep a record of receipts and expenses of the farm throughout the year. From these and the inventory it is easy to figure not only the net worth but the profits and losses as well. March is probably one of the best months in the year to start this work.

PURE-BRED SIRES BUILD UP HERDS

A good sire is half the herd, a poor one nearly all of it, said a pioneer Texas cattleman at a recent United States Greater Production meeting, where purebred bulls were being discussed.

Fifty years ago the cattle of Texas were a lean, shaggy, ill-conditioned lot; today they are low set, blocky, white-faced animals of excellent quality. What has brought about such a change? Simply the consistent use of good purebred Hereford bulls. It was by a similar method that the Argentine built up her great beef export business, Denmark her extraordinarily profitable bacon trade, and Australia her world-renowned wool sales. Shorthorn bulls, Yorkshire boars, Rambouillet rams, purchased or bred at no end of trouble and expense, representing the best blood obtainable and used, consistently year by year—these tell the story.

It is true Canada has produced, and produces, purebred stock equal to the best of the North American Continent. But it is also equally true that the cream of our good isres, both dairy and beef,, regularly find a market across the border in the United States. This should not be, and until the Canadian farmers and breeders use the best at home instead of sending them out of the country, they cannot make the progress they should.

Canada has a great task ahead of her, especially in live stock fields. It will require new intelligence and determination on the part of live stock men. Competition will be very keen in the struggle for commercial positions. The continued use of scrub sires will make progress impossible and defeat the purpose. The future of Canada's business is dependent upon the use of purebred sires. The best beef, the best bacon, the profitable production of milk and butter, cheese and eggs can be insured in no other way.

FARM YARD SPRING CLEANING

Though the farm home has unique surroundings for a healthy atmosphere it is often impaired by the accumulation of filth and debris around the buildings. Such accumulation of foreign matter is often the cause of disease and epidemics, both to man and beast. They act as breeding places for such and are the propagating hotbeds for all things that poison healthy life. How often one finds, when visiting a farm home, a pile of dirt alongside some building that is not only an eyesore to the place, but a source of danger to health. Pools of stagnant water, seepage, decaying carcasses of animals and such refuse are invaraibly found around farm places. Not only are they a source of contamination, but they spoil the general appearance of the place. There is nothing that mars the beauty of a home like a heap of rubbish here, a broken implement there, a broken fence, gate or door, or water hole close to the buildings. They make good shelter for weeds that never lose the opportunity of establishing themselves. As summer goes on thees weeds grow in abundance and it is very difficult to cut them down on account of all the rubbish that is around them. The result is, they are allowed to grow, ripen and disseminate their seed, and next year there are more weeds than ever.

It does not require much labor and very little expense to tidy up the farmyard, and the change in appearance is worth far more than the labor. It does not need much exertion to remove a pile of broken boards or old implements, either by carting away or burning when not in close proximity to the buildings. A day spent in rebuilding broken fences and gates around the buildings, nailing on the boards that have fallen out of the gable end of the shed, putting a few nails or a bolt in that loose hinge on the barn door will go a long way towards improving general appearance and utility. Moreover, when this has been done, the owner and his family will take more pride in their home, and that has a great deal to do with keeping people contented and happy. Perhaps a little paint can be used to advantage, and not cost much. If the job is not too big perhaps the farmer or the boys can do the painting during spare hours in spring and thus save on the labor bill. All these things tend to brighten up the farm home.

Then there is the very important item the health of the farmer's family, which must be protected. Cleaning up the place will do a great deal towards this end. It is well known that filth and rubbish forms an ideal breeding place for flies, and they carry disease into the home.

A couple of days spent in cleaning up the surroundings before spring seeding starts will make a great difference in the appearance of the place. Two men, a team, wagon, and a bonfire will do a great deal in a day, and then it is done for the season. Tidiness is a great asset to anyone, but more so to the farmer, and as a rule it is those same farmers who are satisfied with their calling and are not offering their farms for sale. The pride taken in a neat and tidy home is worth considering, and no better use can be made of a couple of days before seeding than cleaning up the farmyard.

* * *

SIZE OF THE FARM

Some of the brightest young men among those I know best pin their faith firmly to the modern science of farm management, and that is to me evidence of its dependability—in very considerable degree. They tell me that the average farm is too small for best results. The surveys show that it is the relatively large farms that give the good labor incomes to owners. Doubtless this is the rule, but I should like to know how much of this success is due to the big acreage within the farm, and how much ot the type of man who has the trick of succeeding and expresses his success in added acres. If the farm management man who gets the data about the farm took with him a psychologist to examine the owner the results would appear to me more authoritative and conclusive. However, that may be asking too much; our debt to this new science even now is great.

* * *

"To provide supplies we must build up reserves. The first reserve in dairy products is the maintenance of our herds."—Herbert Hoover.

* * *

When planting an orchard, remember that it is a permanent investment and no pains in the preparation of the land or reasonable expense of the purchase of good trees, should be spared.

NEW BRUNSWICK FRUIT GROWERS IN ANNUAL CONVENTION

(Continued from page 757)

orchards and observeing in the growing season points of orchard practice discussed in winter meetings. Representatives of Boards of Trade and the press and leading business men might well be asked to take part in such a meeting, as it would surely give them a better and bigger idea of our fruit growing capabilities and result in advertising of benefit to the industry. I would like to see the meeting give a free expression of opinion on the suggestion.

I desire to call the attention of members to the fact that the prize money allotted to apple exhibits at the forthcoming Fredericton Exhibition has been materially increased. In view of the absence during the past few years, of opportunities for displaying the products of our orchards, growers should make an extra effort this year to see that all fruit classes are well and creditably filled at the exhibitions, and particularly at this one, because the advertising thus secured is of prime importance, not only to the fruit industry, but to all of the province.

I wish to take this oportunity of expressing my appreciation of the cooperation and friendly feeling shown to me in my work as secretary-treasurer and to again point out that the most beneficial results may only be obtained by each member taking as active an interest and part as possible in the work of the Association.

The Financial Statement

Receipts	$3,497.23
Expenditures	3,090.08
Balance in Rayal Bank, October 31, 1918	$ 407.15

Assets

Accounts outstanding, October 31, but since paid	$1,223.75
Accounts outstanding, October 31, and still unpaid, March 31, 1919	335.18
Supplies on hand	883.86
Total assets	$2,442.79
Total ilabilities	1,479.32
Excessof assets over liabilities	$ 963.47

Afternoon Session

Following the president's address and the secretary-treasurer's report an address was made by Mr. George E. Sanders, of the Dominion Entmological Laboratory, Annapolis Royal, N. S. Mr. Sanders stated that the spraying calendar, recommended to apple growers of New Brunswick this year, have been well tested out in the province during the past two years, and have given the best satisfaction of any and, that as far as liquid spraying was concerned, it would probably remain with slight variation, as the standard recommendation for some years to come.

A spirited discussion followed Mr. Sander's address in which many of the growers took the opportunity, through questions,to gain particular information which they needed on this subject.

The afternoon session opened shortly after two o'clock with Mr. G. H. Vroom, of Middleton, N. S., chief fruit inspector for the Maritime Provinces, as the first speaker and he gave a very interesting talk on the Fruit Marking Act, explaining the nature of the amendment to it passed last spring.

He referred particularly to the new standard apple barrel, and explained, in detail, the way this barrel should be constructed in order to complete with the requirements of the law, and at the some time turn out a first class and satisfactory barrel from all standpoints. Mr. Vroom also made reference to the high quality of the New Brunswick apples, especially of the varieties which are most suitable for growing here, such as the McIntosh, Fameuse and Wealthy.

Mr. W. S. Potts, Dominion fruit inspector for the City of St. John, was the next to address the meeting, and he referred to the condition of the New Brunswick apples going into St. John markets from up-river points. He pointed out that while there was still room for considerable improvement yet the growers were to be congratulated on the improvements of the pack made during the past two years. In the course of his remarks, he stated that something like 20,000 boxes of western apples had gone into the city of St. John during the past winter, for sale in the province. These apples, he further stated, while having a fine appearance and being in good condition and a fair qpality, yet they could not be considered in the same class for desert purposes as the New Brunswick McIntosh and Fameuse, and that, in the production of these varieties, there was a big opportunity for apple growers in New Brunswick.

A keen discussion followed this address in which Messrs. S. B. Hatheway, W. P. Fox, A. G. Turney and others took part.

Following this discussion, Mr. E. P. Bradt, Deputy iMnister of Agriculture, addressed the meeting and spoke very interestingly on apple growing in the St. Lawrence Valley, stating that clean crops was the best system of growing the young orchards from the time of setting out until the trees came into bearing and the sod-mulch system had given best results in the management of the bearing orchards.

Mr. Bradt also spoke of the necessity of thorough spraying and of the co-operative marketing of the fruit.

He also stated that the principal varieties grown in the St. Lawrence Valley were the same as ours, namely, McIntosh, Fameuse and Wealthy and that many of the growing conditions were similar to New Brunswick's. His remarks were of particular interest and value to the growers in New Brunswick.

Following Mr. Bradt's address the meeting adjourned to the Gaiety Theatre which through the courtesy of the manager, Mr. W. W. O. Feeney, a film was run off depicting apple spraying work and investigations in the Annapolis Valley, which was taken by the Dominion Atlantic Railway.

The picture was very timely and much appreciated.

The Evening Session

The first item on the programme at the evening session was a practicable paper on strawberry growing and marketing, by Lt.-Col. O. W. Wetmore of Cifton, Kings county, but owing to his absence on account of sickness his paper was read by the secretary and the discussion on it was lead by Messrs. H. H. Smith, of Hoyt Station, S.B. Hatheway, R.E. Floyd, of Bloomfield, A.G. Turney, and others.

The fololwing resolutions were then brought before the meeting and adopted:

"Whereas the New Brunswick Fruit Growers' Association, in annual convention, have unanimously decided to carry on a series of summer meetings to further the Fruit Industry of the province; therefore resolved that the Department of Agriculture be asked to lend all possible assistance to make these meetings a success."

"Resolved that this Association wishes to express its appreciation of the assistance given the fruit growing by the Provincial Horticulturist, Mr. A. G. Turney and his staff. We regret that under war conditions his staff of assistants has been so reduced that he has not time to give the required assistance.

"And further, resolved, that the Department of Agriculture be requested to increase his staff to the requir-ed strength."

This motion was moved by H. H. Smith and seconded by J. W. Vanderbeck.

"Resolved, that the New Brunswick Fruit Growers' Association, in annual convention, have unanimously desided that it is in the best interests of the Association, and the fruit interests of the province, that the association be incorporated under special charter of the Legislature and that an annual grant, in keeping with the importance of the industry which this association represents, be made for the further work of the association; and that a representative committee be appointed to lay the matter before the Government In case this cannot be arranged, then application be made to have this Association incorporated under the Agricultural Act as an Agricultural Society."

This motion was moved by R. E. Floyd and seconded by H. H. Smith.

"Whereas the production of soft fruits in the province is a very profitable sideline, especially on small farms, and the sale for this crop is confined at present to local markets, often resulting in gluts and lower prices than is warranted; and whereas it has been shown that the shipping of strawberries, especially to Montreal, can be carried on very successfully, and to an almost unlimited extent, giving prices that leave a very satisfactory profit to he growers; and whereas the basis of success of such shipping necessitates the better organization and instruction in picking and packing of the fruit; therefore, be it resolved that this association, through the oHrticultural Departmet, make every effort to engage the services of competent men to so carry on such organization and instruction that this line of production may be materially increased."

This motion was moved by Allan B. Dingee and seconded by T. A. Clarke.

The evening sesio nclosed with the election of officers for the ensuing year, as follows:

Hon, President, James S. Neill, Fredericton.

President, Lieut.-Col. O. W. Wetmore, Clifton Kings county.

Secretary-Treasurer, A .G. Turney.

Additional members of the executive, Messrs. W. B. Gilman, Fredericton and R. A. Fillmore, Burton. .

PLAYING THE PART OF A NEIGHBOR

The pure-bred bull in a community is a fine asset and farmers owning such animals should feel free to ask their neighbors a service fee for the use of the animal that is in proportion to its value as a breeder. Neighbors that bring their cows for service should be prompt in paying fees as this is only right; and it encourages others to buy pure-bred bulls. When a fine pure-bred bull is owned by a neighbor it gives a farmer with an ordinary herd of cows an opportunity to improve his stock and finally own a herd that is nearly pure-bred. It may not be necessary for every farmer to have pure-bred cows. Of course, there are not enough to go around. However, it is important to keep as good cows as possible and never neglect an opportunity to improve them by good breeding methods.

Never use a tin vessel in making Bordeaux mixture or other solution containing copper.

The AutoStrop Safety Razor marks as great an advance in shaving methods as the reaper over the old hand scythe. All that the modern mower has meant in convenience, comfort, and economy is realized in the AutoStrop Razor.

The safety construction of the AutoStrop Razor enables the novice to use it with the same ease and dexterity as the veteran shaver. The self-stropping feature gives him a clean, keen-edged blade for every shave; while throughout stropping, shaving and cleaning the blade remains in the razor, thus removing the troublesome necessity of taking the razor to pieces and assembling it again.

There's nothing to learn about the AutoStrop Razor. A man takes to it as naturally as a duck to water, and he gets head-barber shaves from the start. So sure are we of this that we offer the AutoStrop Razor with strop and 12 blades, complete in an attractive case, on the distinct understanding that if it fails to please you, the purchase price—$5 will be handed back to you without argument. Any dealer will be glad to let you have an AutoStrop Razor on this condition.

AUTOSTROP SAFETY RAZOR CO., Limited
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AutoStrop Safety Razor

Nitrate of Soda--Its Nature and Use

By Frank T. Shutt, M.A., D.Sc., Dominion Chemist and B. Leslie Emslie, F.C.S., Supervisor Investigational Work With Fertilizers

Source and Composition.

Nitrate of soda, also known as Chile Saltpetre, as found on the fertilizer markets of the world, is the crystallized and purified product from extensive deposits of the crude nitrate (caliche), occuring in Chile, South America, whence it is shipped in 200 pound bags. This product is about 95 per cent pure and contains between 15 and 16 per cent of nitrogen, the element to which this material owes its fertilizing value.

The most Important Nitrogenous Fertilizer

Nitrate of soda is the most important and the most widely used of all nitrogenous fertilizers, chiefly for the reason that its nitrogen is directly and immedately available to growing crops. Since it has not to undergo any preliminary or preparatory changes in the soil, it is in a class by itself as regards efficiency and quickness of action; all other nitrogenous fertilizers, with the exception of nitrate of lime, (which is not on the market), must pass through some process of conversion in the soil before they are utilizable by crops.

Functions of Nitrogen as a Plant Food

Nitrogen as plant food is instrumental chiefly in promoting the growth of the vegetative parts, (stem and leaf) of crops and hence is more particularly valuable during the earlier stages of development. The nitrogen so stored in the tissues forms a reserve to be used later in the formation of seed and fruit.

From this property of available nitrogen, it will be evident that an excess of nitrate of soda or any similar source of readily assimilable nitrogen would tend to unduly prolong growth and possibly delay the maturing of the crop. Some crops are more particularly susceptible in this regard than others and the effect is more marked when there is a lack of phosphoric acid.

Nitrate of Soda as an Indirect Fertilizer.

Experiments have shown that nitrate of soda exerts an indirect fertilizing influence, in causing the liberation for crop use of potash from its inert stores in the soil.

Application.

Time and Method. From the fact that nitrate of soda is readily soluble and its nitrogen immediately available, this fertilizer, as a rule, is most economically employed as a top dressing to the growing crop during the earlier weeks of growth. A portion of the application may, however, be given at the time of seeding without danger of any appreciable loss through leaching, the remainder being subsequently applied in one or more top dressings to the crop.

In dressing the growing crop, broadcasting the nitrate should be done on a dry day, to avoid scorching the foliage.

Rate. The application per acre per annum may be from 100 to 400 pounds, the heavier dressing being used in market gardening and other intensive forms of farming, as in potato growing. For the ordinary farm crop on soils of average fertility, 100 to 250 pounds per acre probably represents the limits of profitable application.

If one half of the application, say 75 pounds per acre, is broadcasted and harrowed in at the time of seeding, the remaining half may be given as a top-dressing about two weeks after the crop appears above the soil. Or the first application may be made as soon as growth appears and a second some two or three weeks later. A single application should not exceed 100 pounds per acre. As far as may be practicable, it is well to conform to the practice of small and frequent dressings during the earlier weeks of growth, according to the crop's ability to utilize nitrogen. By this means loss through leaching will be reduced to a minimum.

Rate Suggested for various crops.

	Pounds per acre.
For grain crops	75 to 150
For hay and pastures	100 to 200
For corn (fodder) and turnips	100 to 200
For mangels, sugar beets, etc	150 to 300
For potatoes	200 to 300
For cabbage and similar leafy crops	200 to 300

Clover, alfalfa, peas and beans, though "nitrogen-gatherers" when well established frequently respond profitably to a small quantity of nitrate of soda applied during the initial stag-s of growt.h

The amount that can profitably be employed will naturally be determincd in a large measure by the character of the soil, the smaller dressings sufficing on liberally manured land.

Supplemental Use of Nitrate

As a supplement to low grade mixed fertilizers, containing only say one per cent of nitrogen, as well as to purely phosphatic fertilizers, such as superphosphate and basic slag, the use of nitrate of soda will usually be found profitable.

Symptoms of Nitrogen-hunger

When soil and weather conditions are unfavourable to the production of nitrogenous crop food (nitrification), early spring sown crops may suffer form a lack of assimialble nitrogen. If the young crop assumes a sickly looking yellowish appearance, it stands in need of nitrogen. An application of nitrate to such a stunted, starved crop will, in a few days, with a warm rain, change its colour to a deep green, a sure indication that the crop has obtained its required food and is again making healthy, vigorous growth. One of the chief advantages in using nitrate of soda is that is supports a continuous and vigorous early growth and that it will help the young crop to safely tide over a critical period arising from unfavorable weather conditions.

Storage and Preparation.

Nitrate of soda, as already pointed out, is extremely soluble and hence to avoid wastage should be stored in a dry, rain-proof building.

As received, it will in all probability be caked into hard lumps and masses. These should be broken down, by pounding or to a fairly fine powder, in order that the nitrate may be uniformly applied.

To facilitate distribution, especially when the application is of the order of 50 to 75 pounds per acre, the powdered nitrate may be mixed with any desired quantity of dry loam or sand.

Nitrate of Soda a Source of Plant Food

Though the principal function of the nitrogen in this material is to promote growth of the vegetable parts and its effects are frequently very quickly observable, nitrate of soda is not to be regarded as a mere stimulant; it offers plant food in the most acceptable form. Used rationally as indicated, it is an excellent and effective fertilizer. It is not a "lasting" fertilizer, but it is one that, other factors being favorable, yields a quick return on the investment.

Growing Pea-Fed Bacon Hogs in New Brunswick

By O. C. Hicks, B.S.A.

Pea-fed bacon and pea-fed smoked hams are a delicacy rare to the consumers of New Brunswick grown pork; though pea-fed home grown pork was produced last summer and marketed in each county. Present indications point to its becoming a quality common to our trade for pea-fed pork can be produced in all parts of the Province at low cost.

Farmers in each county who raise pigs cooperated with the Provincial Department of Agriculture to carry on a test during the summer of 1918, to introduce pasture crops for pigs that woulg dive cheaper pork production. The results of the test indicate that a highly satisfactory crop is a pasture mixture containing pease.

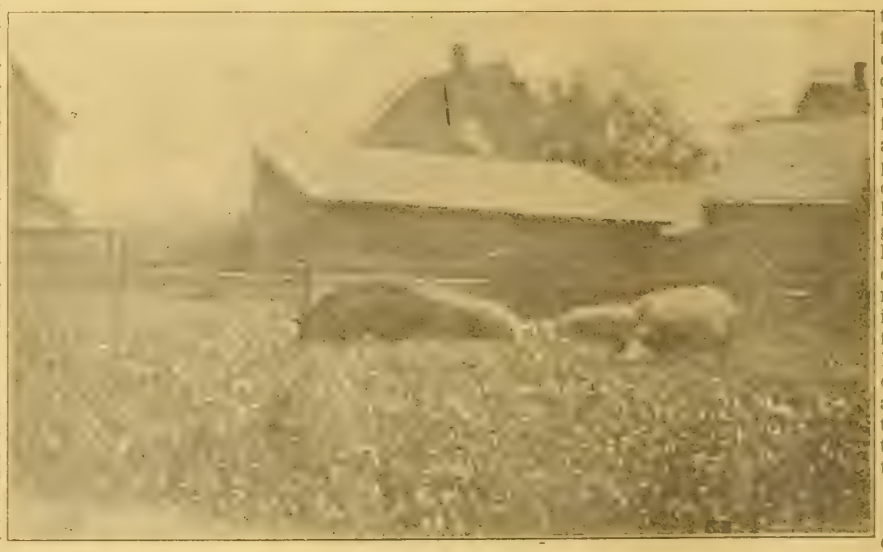
Forty-eight demonstration pastures were provided for and two hundred and forty-five pigs were pastured, while many more were fed in the pens upon green-cut rape, clover and pease.

Several popular breeds of swine were represented in the test, viz. Yorkshire, Chester White and O. I. C. Tamworth, Berkshire and Large English Black. The qeustion "which is the best breed as grazers"? cannot here he answered for in no instance were the weights of the pigs secuerd. But to the question do hogs make good grazers the answer is an emphatic "Yes".

Pasture Crops For Pigs

The plan of the cooperative tests included pasturing upon; Rape, Red Clover and three different grain mixtures, viz. (a) Pease and Oats, (b), Pease, Oats and Barley, (c) Oats and Barley.

Each experiment received sufficient seed for one acre of ground and a roll or woven hog fence-wire to enclose the pigs.



Good Pasturage Here.

The method of pasturing recommended was to divide the area into three parts and to pasture the pigs upon one section at a time. Thus a rotative system of pasturing was followed by which the part grazed off regained its growth while the other parts were being grazed and the pasturage was always fresh and succulent.

The test showed that pigs can be raised in large numbers without the cost of housing and that the out-of-doors mode of living contributes to an extraordinary thrift, cheap gains and consequently greater profit.

Location of the Pig Pasture

A favorable site for a pig pasture is one governed mainly by its convenience to the feeder.

Where a location can be had near the farm buildings and adjacent to a frequented farm lane, the thrice-a-day chore of feeding the pigs becomes an occasional pleasure only. An ideal situation for a pig pasture on many farms can be had by using the waste area of ground surrounding a duck-pond, swamp or spring brook so frequently an ugly feature of the farm lay-out. Such locations contribute a great deal towards maintaining the health and comfort of the pigs because of the advantage of the "wallow", so necessary a provision to their well-doing. Pigs perspire very little and suffer from heat, consequently a "wallow" and shade of some kind is needed. A rough shelter of boards or an area of bushes, or a large tree within the pasture to give shade and protection is an essential feature of a pasture.

The Preparation of the Pasture

A plan for pasturing pigs to be successful requires study beforehand, for other factors need to be considered besides the preparation of an area large enough for a given number of pigs and for a succession of pasture corps. A choice of successive crops can be planned to advantage only when the number and age of the pigs is considered. For example, one-half acre sown to rape in the first half of May would offer unsatisfactory forage for pigs littered during April, for by the time the pigs were 12 weeks old the rape would be so tough that only older pigs would graze on it, and for March born pigs, or for a late fall litter, the rape

would be in prime condition about the 15th of June.

Rape which is one of the best plants for pasturing pigs, requires fall preparation of the soil. This plant is a rank feeder, quite similar in this respect to the turnip or cabbage, and requires the same cultural methods. It grows most rapidly in the cooler months and consequently makes the best pasturage during the months of June, September and October.

A dressing of barn-yard manure applied either in the fall or early spring and harrowed in before sowing, produces a rapid growth of succulent forage. This crop grows but slowly during hot dry weather and when tough or stale it is less palatabel than the juicy young growth. Broadcasted sowing of this crop has the disadvantage that summer cultivation cannot be given, whereas sowing in rows two feet apart allows frequent cultivation to break up the hard paths along which the pigs have walked while feeding, and a fresh change of pasture can be given more frequently as the crop makes quicker growth. Five pounds of seed is ample for one acre sown in rows, while three times this quantity is used for broadcast sowing.

The replies received from different experimenters who pastured pigs on rape say that the amount of other food required by three months old pigs is less than half the amount ordinarily required and that old pigs will thrive on the pasturage alone. One correspondent, Mr. Jas. Easton, Chatham, says: "One-half acre of rape and one half acre of mixed grains had maintained eleven old pigs for three months."

Red Clover

Red Clover, the crop considered as forming the keystone of our agriculture has again proved its value as a pasture plant. For pigs of all ages red clover is the most satisfactory of any of the crops tested. It can be pastured very early, say June 10th in most places in the Province, and where the pasture is not overstocked ti continues to give good pasturage all summer. Several experimenters speak very highly of red clover as a pasture crop well suited to young pigs. Mrs. R. L. Hicks, Dalhousie Jct., pastured 6 pigs for 14 weeks on ¾ of an acre. Where a field of red clover can be had adjoining a piece of rape the combination is ideal for rapid growth and cheap gains.

Grain Mixtures for Pastures.

One of the essetnials to produce a good pasture with any grain or mixture of grains is that it must be sown thickly, consequently the quantities used per acre in these experiments was greater than is used in ordinary practice for grain growing. The experiments indicate that the mixtures containng the heavier quantities of seed prove most satisfactory.

A mixture of oats 2 bus. and barley 1½ bus. was the lightest sow pasture crop and contained 123 lbs. of seed. (b) Oats 2½ bus. and peas 1½ bus., contained 175 lbs. of seed and Oats 1½ bus., Peas, 1 bus. and barley 1½ contained 183 lbs. of seed.

Of these mixtures those containing pease were most satisfactory.

Fall preparation of the ground for any grain mixture is recommended. The ground should be well manured so that a rank, quick growing crop will be produced.

Pasturing should begin before the growth exceeds one foot in height, otherwise it becomes so tough as to be unpalatable.

Mr. L. J. Green of Blissfield reported as follows for a pasture of oats and barley; Sowed the plot, three-fourths of an acre, on June 27th on sod. Eleven 12-weeks' old pigs were turned in when the crop was 10 inches high. A pound of middlings and 4 lbs. of skim milk per head was given in addition each day. The pasture lasted for 5 weeks.

The oats-barley and peas mixture was reported on by Messrs. McIntyre Bros., Sussex, as follows: One acre was sowed on spring plowed sod June 17th and pasturing begun 6 weeks later on July 24th. Twelve 5-mos. old pigs were turned out to graze and fed in addition ½ the usual quantity of mill feeds and 100 lbs. of skim milk daily. The pasture was divided into 3 plots and the pigs changed about every week. We consider the pasturing plan gives good value."

A plan for pasturage, proposed from the experiences gained last summer, for a sow and litter of ten pigs farrowed, say April 5th, would include pasture upon Red Clover, peas and oats mixed, and rape for fall pasturage.

Approximately one half acre of each crop would be required. The clover to be of the previous year's seeding. The grain and rape to be sown on fall plowed sod or stubble. The peas and oats mixture to consist of ¾ bus. peas and 1¼ bus. oats for a half acre seeded down with clover and timothy. The date of sowing the 15th of May.

The rape to be sown the 20th of June in rows on soil well manured and prepared just as for turnips when sown on the flat, and 2 lbs. of seed used to the half acre.

The pigs to be eleven weeks old when turned on to clover at the time the clover is coming into bloom, about June 20th. They will not thrive on the clover alone and should receive for a time nearly the usual quantity of slop. Shelter should be provided in one corner of the field.

The half-acre of clover will give excellent pasturage for two weeks, or until July 1st, when the area sown to oats and peas on May 15th will be ready. At this time the young pigs may require to be ringed—in two weeks the pigs can be changed back upon the clover which will have regained a good strong growth and remain there two weeks or until the rape, sown June 20th is 6 or 8 inches high, or after August 1st. During this period the pigs will make rapid gains with but one half the grain and milk ration and while they are on the rape and clover alternately during August and September less than this will keep them growing well. They should receive at all time plenty of water.

This pasturage plan is suited to Kings, Charlotte and Madawaska, and parts of Westmorland. The dates of sowing should be one week earlier, in the counties of York, Carleton and Victoria, and in the remaining counties one week later than here outlined.

The results of the test last year proved that grazing was an economical method of growing pigs and the practice will be continued on the same number of farms. This year the Department of Agriculture will supply each of the experimenters with rape seed as it is proposed to try out this excellent forage crop on a more extensive scale.

How to Compare the Value of Fertilizer Materials

Sources of Nitrogen or Ammonia.

	Approx. price per ton.	Units or percentage of ammonia	Price per unit ammonia.
Nitrate of Soda	$125.00	19.5	6.41
Sulphate of Ammonia	153.50	24.5	6.27
xTankage	145.00	16.0	8.75

x contains 2 units of phosphoric acid worth $5.00

Sources of Phosphoric Acid

	Approx. price per ton.	Units or percentage of available phosphoric acid.	Price per unit of available phosphoric acid
Acid Phosphate	$32.50	16.	2.03
Basic Slag O.H.	22.00	6.	3.66

Source of Potash.

	Approx. price per ton.	Per cent of potash.	Price per unit potash.
Muriate of Potash	$200.	50.	4.00

By dividing the percentage composition into the price per ton, we get the cost of plant food in each material and comparison is then easy.

OR

We can determine the cost of a pound of plant food in the different materials. For example:

Sources of Nitrogen or Ammonia

	Approx. mar. ket price per ton	Percentage ammonia	Lbs. ammonia in ton=percentage multiplied by 20 (20—no. cwt. in ton).	Price per lb. ammonia= cost per ton divided by lbs. in ton
Nitrate of Soda	$125.00	19.5	390.	=32½ cts
Sulphate of Ammonia	153.50	24.5	490.	=31 1/3 cts.
xTankage	145.00	16.0	320.	=43¾ cts.

x contains 2.5% phosphoric acid worth $5.00

Sources of Phosphoric Acid

	Approx. price per ton	Percentage available phosphoric acid.	Lbs. available phosphoric acid per ton=percentage X 20	Price per lb. available phosphoric acid=cost per ton divided by no. lbs. in ton
Acid Phosphate	$32.50	16.	320.	10 cts.
Basic Slag, O.H.	22.00	6.	120.	18 1/3 cts.
Basic Slag War Brand	16.00	2.	40.	40 cts.

Source of Potash.

	Approx. makret price per ton	Percent of potash	Lbs. potash per ton=perecntage X 20	Price of potash per lb.=cost per ton divided by lbs. in ton
Muriate of Potash	$200.	50.	1000	20 cents

How to Value a Ready-Mixed Fertilizer

For example, a 2-8-2 fertilizer is offered for $61.25 per ton. The 2-8-2 means that the fertilizer contains 2 per cent of ammonia, 8 per cent of phosphoric acid and 2 per cent of potash. If we multiply the percentage by 20 (the number of hundred weight in a ton) we get the number of pounds of each element of fertility in a ton. Thus we find that this fertilizer would contain then 40 pounds of ammonia, 160 pounds of phosphoric acid and 40 pounds of potash. From our previous calculations we found we could buy ammonia for 31 1/3 cents per pound in Sulphate of Ammonia, phosphoric acid for 10 cents per pound in Acid Phosphate and potash for 2 cents per lb. in Muriate of Potash.

By applying these prices to our calculations we find:

	Percent.		Cwt. in ton.	Pounds in ton.		Price per pound.	Value in a ton.
Ammonia	2	X	20	= 40	X	31 1/3	= $12.53
Phosphoric acid	8	X	20	=160	X	10	= 16.00
Potash	2	X	20	= 40	X	20	= 8.00
							$36.53

This value $36.53 represents what a ton of this fertilizer could be bought for by buying the raw materials and mixing them at home.

To Fill a Fertilizer Perscription

Suppose you wish to prepare a 2-8-2 mixture, we want then 2% ammonia, 8% phosphoric acid and 2% potash. Now 2 per cent ammonia means 2 pounds per hundred. One ton contains 20 hunderd weight, so we multiply 2 by 20 and get 40 which is the number of pounds of ammonia required in a ton of the mixture. Sulphate of Ammonia contains as we saw from previous figures 24.5 per cent ammonia, or 24.5 pounds ammonia in 100 lbs. material. We want 40 pounds of ammonia so if there are 24.5 lbs. ammonia in 100 lbs. Sulphate of Ammonia, we would get 40 pounds in 100x40.x=163

24.5

pounds Sulphate of Ammonia. Using Acid Phosphate 16% available phosphoric acid and Muriate of Potash 50% potash, and proceeding in the above manner we would find as follows:

	Percent		Cwt. in ton	Total lbs. required in mixture	Pounds material required to furnish these amounts
Ammonia	2	X	20	= 40	163 Sulphate of Ammonia
Phosphoric acid	8	X	20	=160	1000 Acid Phosphate
Potash	2	X	20	= 40	¼ 80 Muriate of Potash
					12.43 total

or, as briefly put, the percentage composition required X 20 X 100 and divided by the percentage of plant food in the materials used gives the number of pounds of each material required.

In 1242 pounds of the above material we find as much plant food as is contained in a ton of the ready mixed 2-8-2 formula, hence such large applications are not necessary.

E. M. TAYLOR,
Soil and Crops Division,
N. B. Department of Agriculture

HORTICULTURE.

THE NEGLECTED ORCHARD

A few old decayed trees around the home fitly describes the orchard of today on far too many farms. A generation ago every farm home was an apple Eden. Apples were grown everywhere and by everybody. Now it is the exception to find an orchard that has been given the care usually given to other cultivated plants. Many orchards are worn out because they have been neglected, and many are in such a state that the trees are not worth pruning and waiting for results. Insects and fungi have been allowed free scope for reproduction and increase, and have contributed much to the downfall of the average farm orchard. Plant diseases and germs are continually increasing in kinds and in individuals. The kinds increase by importation from foreign countries and because as natural food is destroyed by the destruction of wild vegetation, pests are driven to the cultivated plants. The individuals of the innumerable kinds are increasing because farm orchard areas are becoming more and more the breeding ground for disease. Disease spreads faster and pests multiply as their feeding grounds extend and are left uncared for. The farmer with good intentions who spends time in pruning, spraying and cultivating is handicappel in his effort by his neighbor's pest propagating areas around his home.

The only attnetion many orchards have ever received is to have all the lower branches taken off. The argument put up in favor of this treatment is that "the good apples are always in the top of the tree anyawy." But those apples in the top of the tree had more sunlight and air, and as a result they were better than the apples that grew down in the more dense part away from the sun and in sheltered places where the bugs just love to work.

Few wornout orchards have been well pruned, a condition manifested almost at every farm. Trees with unsymmetrical heads, too many branches, decaying branches, and a growth of water sprouts fill the areas that get the name of orchard. Such orchards should be pruned to correct the defects mentioned; to let in light and air; to facilitate orchard operations, and increase the vigor of the trees. Have an ideal in mind as to the shape of the tree desired, and prune strong growing varieties lightly, and weak growing ones severely.

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A "crisp heading" variety that is very hardy and will stand extremes of weather. Head is large, hard, tender and crisp, with blanched centre; wholly free from bitterness, and remains long in excellent condition.

¼ lb. 90c; oz. 30c; pkt. 10c. Sent postage paid—cash with order.

Of all the places the farm home possesses the greatest opportunity for beautiful effects and profitable ornamentation is to be found in a well arranged and properly kept orchard. Judging by what is to be seen in many of the rural districts, this fact is not sufficiently appreciated. In many cases no attention is given to planting trees about the home, and as little attention to the trees that have been planned by a former generation.

Many times nature herself has given the country home and its surroundings al lthe main essentials of landscape beauty. With attention to some of the simple principles of oranemntal planting, or that necessary for keeping a well trimmed orchard, practically any farmer can make the grounds about his home a thing of beauty, thus not only making it a better place to live in, but enhancing the market value of his property.

USE OF ELEVEN AND SIX QUART FRUIT BASKETS

During the past few months there has been considerable difficulty in reaching an agreement as to the specifications of the new standard six and eleven quart veneer fruit baskets. This has meant an unavoidable delay in commencing their manufacture and has made it necessary to allow the use of baskets of the old sizes during the coming season. Manufacturers have therefore been advised that they may continue to make these until Septmber 1st next, after which date only baskets of the new dimensions, which have been finally agreed upon, may be manufactured.

So far as the use of the old baskets by growers and shippers is concerned, there are no restrictions. They may be used until the supply now in stock, or which may be manufactured up to September 1st next, is completely used up.

The necesity for arranging at an early date for a reasonable supply of fruit packages will be quite obvious to all fruit growers, as it will permit the manufacturer to meet the increased demand should the crop be above the average of the past few years. In past years, when the crop has been large difficulty has been experienced in obtaining sufficient packages to market it to advantage. This difficulty wil be removed if growers will place their orders well in advance of the harvesting season.

A circular letter has been sent to all fruit growers, dealers anad manufacturers on the mailing list of the Dominion Fruit Branch, embodying the foregoing information.

DISEASES IN HOT BED

Very frequently when plants are grown in the hotbed they are attacked by various diseases peculiar to the particular plant grown, sometimes resulting in the destruction of the whole bed. Various types of damping-off diseases and rots caused by either fungi or bacteria are common. The damping-off fungus is especially prevalent and also very destructive, often killing a whole bed of lettuce in three days.

Prevention is the best means of combat. First, insure that the disease is not in the soil by using new soil each year and thoroughly disinfecting the bed at the beginning of the season. During growth maintain as even a temperature as possible, avoiding high temperatures especially. To as great an extent as possible select hardy varieties of plants. When applying water, avoid wetting the leaves, if such is possible. At any rate do not have the plants thickly seeded so that when once wet they remain wet for several hours afterwards Keep a careful watch for disease and use the method of combat that best suits your own particular conditions and the plants being grown.

FIGHT CABBAGE WORMS NOW

Whenever the snow leaves the vegetable garden, gather up the old cabbage stumps that were left on the ground, the chances are that they are harboring cabbage worms in the dormant stage. To get rid of them, all that is necessary is to destroy the leaves, stems and everything that remains of the old cabbage in the garden. There is still time to rid the garden of many another pest by cleaning up and destroying the dead rubbish of last summer.

Never spray fruit trees when in bloom. The spraying is apt to wash off the pollen and when this occurs no fruit will set. The bees of the neighborhood may also be poisoned.

When using a solution of a strength that may damage foilage, try spraying but one or two plants at first. If no damage results after three days it may be safely applied on a larger scale.

The farmer by using his brains in winter can save his back next summer by scheming and plannngi the season's work.

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YOU BETTER KNOW THE TRUTH about this wonderful SEED CORN and our other SEEDS and SEED GRAINS before sending your order for your needs for this season to anyone.

GRAND CHAMPION and SWEEPSTAKES (Brands)

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We will credit this on your first order for SEED CORN, 10 Bu. or over. When you get this ALBUM you will have the facts before you.

RENOVATING THE NEGLECTED ORCHARD BY MODERN PRUNING YOUNG AND OLD APPLE TREES

Most fruit growers admit that pruning is essential in any orchard, but they do not always agree as to just which method of pruning is most desirable. This difference of opinion is not because all methods have not been sufficiently well tested, for all have undergone exhaustive tests. It is just because all growers do not have the same ideal tree before them when they think of what a perfect tree should be. In dealing with an orchard that has been neglected pruning will be guided largely by the trees as you find them.

The general idea is to have them so that the sunshine will reach every apple alike. The idea that the apples at the top of the tree are superior to others on the tree is due entirely to the fact that they get all the sunshine and the light, and if these trees were so thinned by pruning, all the apples on the tree would be of the same superior quality.

The Leader and Open Top Method

In some of the older sections the apple trees have and still are pruned chiefly to what we know as the "leader" system. Theoretically, a leader tree is one with a main stem running up in the air an indefinite distance and with several whorls of main branches arising from this main stem or "leader." But the open top pruning is the preferable way.

An open-top tree is in appearance just a big bush. The trunk is short and the main branches form a low head that is easy to spray and easy to harvest. It makes altogether the best type of orchard tree if you are intending to grow first-class fruit. The taller trees of the old style will produce more apples to the acre, but I doubt if they will produce as many dollars to the acre, and in this day and age it is money that talks.

Someone has said that the proper time to prune is "when your knife is sharp." That is largely correct provided you expect to use a knife to do the work; but even then it is possible to favor the tree by the selection of a favorable season.

According to experiments that have been conducted, it has been found that wounds heal just about as well if made at one season as if made at another. Many trees were pruned each month of a given year and all of the wounds seemed to heal equally well. If the same experiment had been conducted during some other year with a different set of climatic conditions, a difference might have been noticed.

If a tree is pruned early in winter and very severe weather follows, the pruned stub will nearly always be killed back for some distance. The reason for this is that moisture can more readily escape from the wounded surface than it can from a sound one. When too much moisture escapes from the tree death of the tissues occurs simply from the drying out process. In winter, with deeply frozen soil, it is often impossible for the tree to replace the moisture that is evaporated from the normal bark tissues. It is this drying out that produces the winter injury with which all growers are familiar. With a tree wounded from pruning this injury is very apt to be much worse. By delaying the pruning until late winter or very early spring, the wound is made just before growth starts. As a result the tissues round the cuts readily heal and the damage to the tree is quickly overcome.

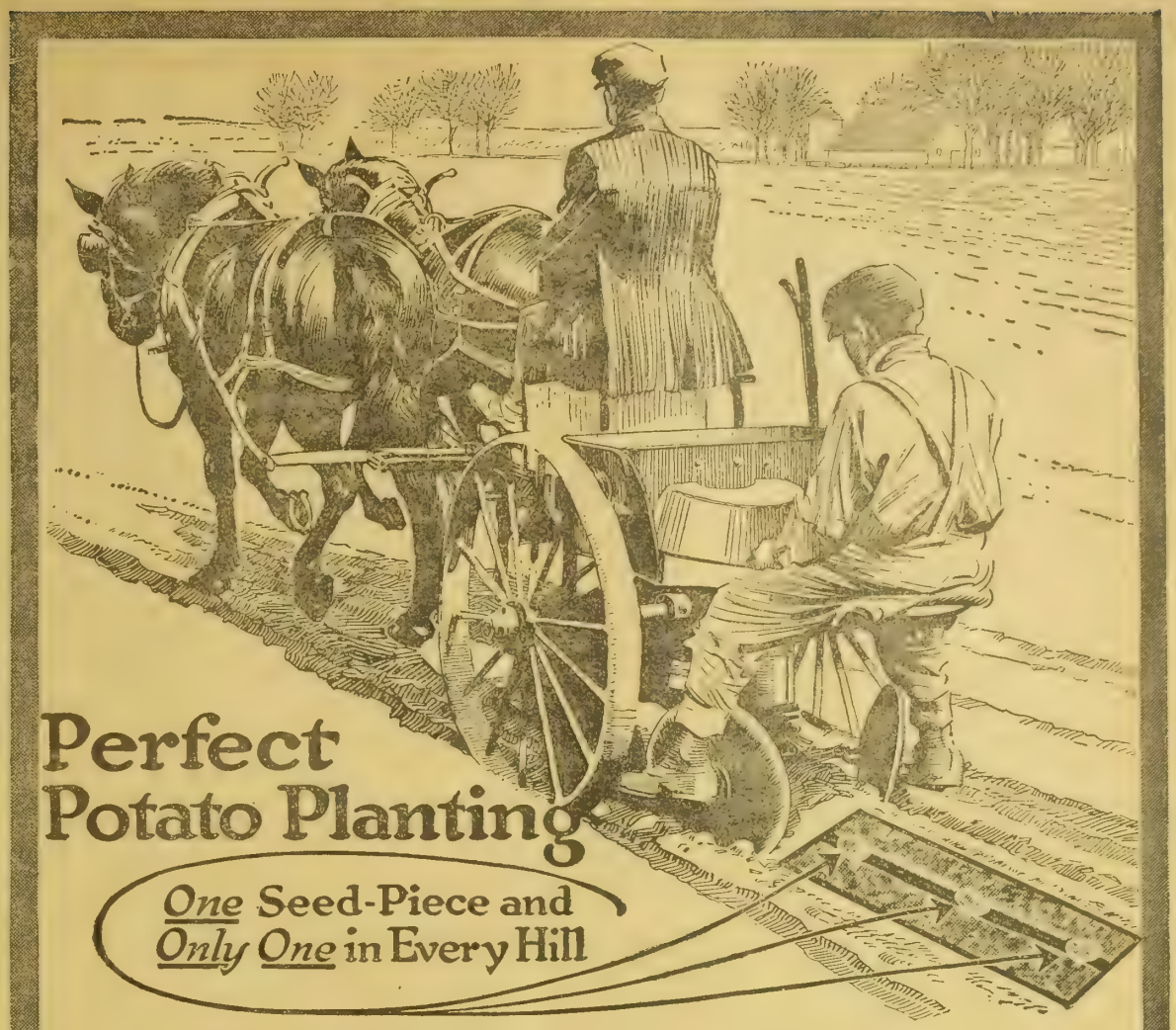
Stubs Must Be Removed

Regardles of the kind of tools you use to do your pruning, there are certain rules you must observe if you are to make a good job of your work. In cutting small branches always try to make the cut just above a bud. In this way the new growth will start close to the end of the branch you have cut off and no dead stub will be left to form a weak spot later.

In cutting large branches the cut must be made flush with the surface from which such branch originates. At the base of nearly all large limbs on an apple tree you will notice a very perceptible swelling. It was formerly thought that the proper place to cut was just where this swelling, or bulge, joints the branch. This, however, is not good practice. The branch must be taken off just as close to the tree as possible, regardless of any bulge and regardless of the size of the wound that results. A large wound flush with the tree will heal much quicker and give less future trouble than will a small wound at the end of the stub.

Short stubs or any other kind of stubs must never be allowed to remain on a tree. They can never heal over, and as a result they are a constant source of infection. Through them the spores of food-destroying fungi enter the tree.

There has been a good deal of discussion about the proper treatment of large pruning wounds. Some growers



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Save Seed! The Iron Age is known as the 100 per cent planter because it puts *one* seed-piece and *only one* in every hill. This means a saving of $10 to $20 per day in seed alone. Loss through puncturing and bruising is entirely avoided.

Save Time and Labor! The perfect planting of the Iron Age means a tremendous saving of labor, time, fertilizer and insecticides, which would be wasted on missing hills. Unplanted spaces in your rows have to be worked over with plow, harrow, planter, cultivator, weeder, sprayer and digger, and require fertilizer and insecticides, the same as if planted. This loss *must* be avoided.

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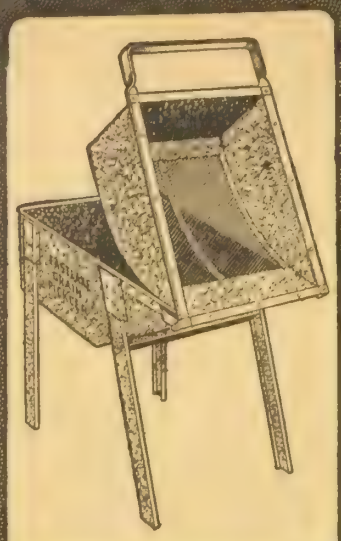

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have advocated one sort of "dressing" and some another. Here again the experimental horticulturist has been of service in determining what is what. Skilled orchardists have made extensive experiments, and at the end hav been forced to conclude that the wounds which received no treatment healed just as well as those that were painted. Some kinds of paint caused actual injury.

It has never been demonstrated, however that a coating of good white-lead paint was injurious to a wound, and there is every reason to think that it may be of some benefit.

Though the unpainted wounds heal just as rapidly as those that are treated the character of the tissues which are healed is not the same. If a large wound is left untreated the bark at the edges will in time entirely cover it, and it may appear to be in perfect condition. However, the exposed wood is certain to check and crack, and before the bark has entirely sealed up the opening, some decay may have started in the heartwood. Later, under the perfect scar, this decay will work down into the trunk and some day the orchardist will be surpirsed to find that an unsuspected hollow tree has blown over in the night.

On the other hand, the wood of large wounds is painted it is much less likely to crack, thus preventing decay from setting in. Cover every large wound that is made, and use grafting wav rather than paint of any kind. In the first place, it it not always possible to know just what chemicals are in the lead paint you buy, but you do know what is in the grafting wax because you will make it yourself. Then, too, the wax will remain on the tree indefinitely and will keep out the air and water perfectly until such time as the bark has grown entirely over the scar.

Very large scars will heal rapidly at first and then, as the new bark becomes tougher, the healing is less rapid. If at the beginning of a growing season this newly formed bark is cut slightly with a sharp, clean knife, it will again begin to grow vigorously and the complete healing of the scar can thus be materialy hastened.

Pruning Old Neglected Trees

Old trees which have been badly neglected for a long time often present many difficult problems to the pruner. In the first place, these old trees were often badly started and their early owners usualy spoke of their tree trimming as "pruning up the trees." That just describes it. They were "pruned up" until all of the lower branches were removed and the fruit-bearing area was finally high above the earth.

It is sometimes impossible to do much with such old trees. Severe heading back will often expose large areas of old bark that has been growing in the shade for years. The sudden exposure to the sun will result in sun scald, the bark will die, borers will enter, and in a short time the old tree is gone.

It is usually much better to thin out the tops so as to allow air and a moderate amount of sunshine to reach the fruit, and to remove all deadwood. Often each old tree is a problem in itself, and to attempt to describe the proper pruning of enough types to cover the ground would take more space than this entire article.

After any mature tree has had a moderately severe pruning there will be a tendency for it to produce a quantity of "water sprouts." These are simply vigorous shoots that originate along the trunk and on the main branches. Some varieties produce them early in life in great abundance. In all cases they are to be removed, except where a tree has been damaged and a water sprout may be useful in growing a new branch.

Training the Young Tree

It is quite possible that many of the trees will be beyond the stage that skilled pruning can court back to fruit-bearing, and in that case the only alternative will be planting young trees.

The pruning of an apple tree starts immediately after it is planted. In fact, it may be started even before it is planted, and as far as the roots are concerned it must be. tI is somewhat more convenient to plant the tree just as it comes from the nursery and then as soon as it is firmly fixed in the ground it should be pruned.

If a one-year old tree has been planted the pruning will be a simple matter because such trees usually consist of a single straight "whip." This whip is merely headed back to a single bud about 30 inches above the ground. This 30 inches will form the trunk of the future orchard tree and it should not be encouraged to grow any taller. It is understood, of course' that stems—of the sort of plants we are discusing—do not grow in length after the first year. Consequently, if the head of our tree is formed close to the ground it will remain forever so. Later the lower branches may be removed(but the trunk of the tree will never elongate, because it is physically impossible.

In planting a two-year-old apple tree you will find that the nursery has furnished a much-branched little thing that looks like a dwarfed orchard tree. There are nearly always more branches than there should be and they are always quite long for their age. These branches must be shortened to about one-third of their length and their number must be reduced to not more than five. Three branches left on a tree of this age are often enough, but five are more nearly an ideal numer.

These five branches will form the one-year-old tree will be very similar to that described for the initial pruning of the two-year-old from the nursery. After that you can usually simplify matters by preventing all formation of any more main branches and by treating each branch just as if it wtre in itself a small tree.

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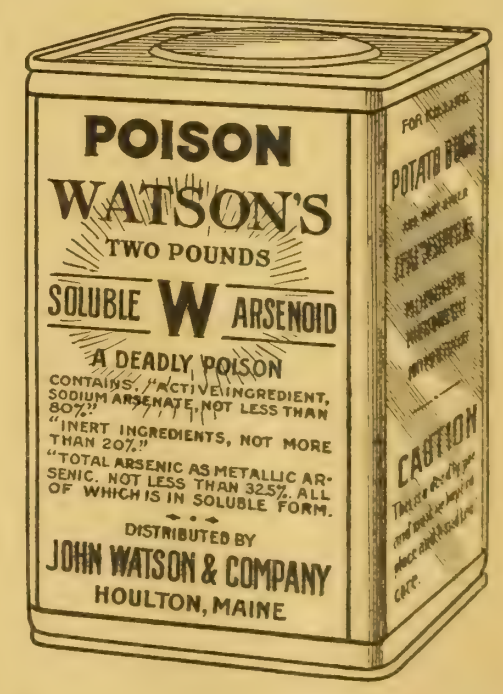
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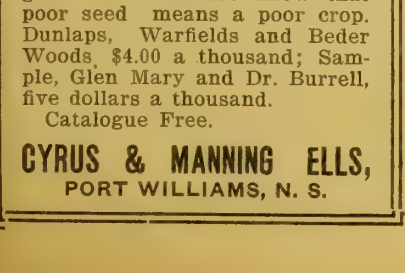

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is at this period of their growth that you must be watchful to see that the tree is properly shaped for if neglected now it will take a great deal of engineering to correct the error after the tree grows to a large size. There are some orchards over thirty years old in which the trees have not been pruned for at least fifteen or twenty years, but in spite of that they are well-shaped trees and really need comparatively little pruning now. Comparatively little later pruning was needed, owing to the fact that they had been carefully grown and pruned during the first ten years of their life.

After a tree gets to be six or eight years old—and in some cases at an earlier age than this—the need for severe pruning ceases. At this age the tree should begin to bear a little fruit, and it is reaching a size where it can hold quite a good load if it has the chance. Constant pruning does not improve this chance. In these older trees the chief pruning that is needed is to remove an occasional cross branch, to thin out branches that have grown too thick with twigs, and to cut out carefully all dead, diseased or otherwise damaged wood.—B. W. Douglas.

SOIL MANAGEMENT INVESTIGATIONS IN A YOUNG APPLE ORCHARD

The object of this investigation carried on at Laurel, Indiana, has been to study the effects, and particularly the factors responsible for the effects of tillage with cover crop, mulch, and sod on apple trees. The present report covers the formative period of the life of the trees. The land comprising the experimental plots had been user as premanent pasture for nearly 40 years previous to planting the orchard. The investigation has to do mainly with the upland area, the hillside plot being included for any additional light it might throw on the behaviour of th eupland plots. The systems of soil management include four major treatments, viz., clean cultivation with a winter cover crop; a heavy mulch of straw applied to the trees, and the grass cut and let lie; the grass cut and alolwed to lie where it falls, no mulch given the trees; the grass cut and raked up to form a mulch collar about the trees.

The Laurel soil contains a high percentage of silt and clay, and varies but little in its physical composition, specific gravity and water-holding capacity. The soil (to a depth of 9 in.) is not notably deficient in any essential element, however it is not very productive. The low organic matter content and the high proportions of silt and clay, make the soil one through which water percolates slowly and one which is easily puddled; coupled with these conditions is a slight acidity. The subsoil is not greatly different from the surface soil.

The average annual precipitation during the five year-period, 1912-1916, has been 38.71 in. The spring months are usually much better supplied with moisture than the autumn months. Periods of dry weather frequently prevail in June and July, which are commonly broken by heavy precipitation in August.

While there have been no wide variations in phenological behaviour of trees under different systems of soil management, yet there does not occur a marked slacking up of growth on grass plots during dry periods in summer.

Trees grown under a clean culture cover crop system or under a heavy mulch made 44.5 per cent. greater average yearly gains in trunk girth than trees grown as grass with a light mulch or no mulch at all. There was no significant difference between the three varieties, Grimes, Jonathan and Stayman, in their response to soil management treatments. The Stayman variety made slightly greater gain in girth of trunk on all plots than did the Grimes or Jonathan.

It is largely in dry periods that the value of certain systems of management in conserving soil moisture are made manifest. During two such periods, occurring in June two out the five years, where an adequate mulch was maintained on the surface of the ground, either through the agency of cultivation or a heavy supplemental covering, the percentage of soil moisture was more than twice that in grass land. These soil moisture conditions are closely correlated with the girth increase made by the trees. The great importance of water in tree growth is further emphasized by a study of the precipitation data which show that the variation in growth due to seasonal moisture conditions, appears to have been quite as lagre as that due to cultural practices.

The soil temperature studies were carried out under field conditions (at a uniform depth of 9 in. on all plots)

(Continued on page 788)

Spray Potatoes
To avoid Bugs and Blight—It Pays

The O-K Canadian 2-Row Sprayer works like a wheelbarrow and thoroughly sprays two rows at a time; agitator keeps mixture stirred. Nozzles adjustable for both height and width of row; can be used for spraying trees, whitewashing, etc., built for long service.

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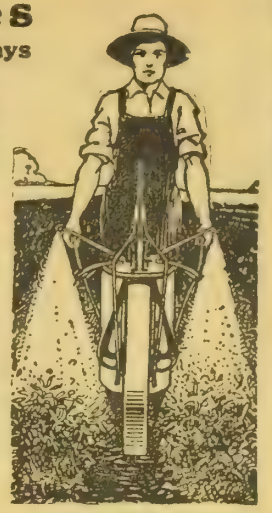

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47

DAIRYING.

DEVELOPING THE HEIFER TO DO HER BEST WHEN SHE BECOMES A WORKING COW

The profitableness of dairying depends to a large extent upon the careful rearing of the heifer calves from the best cows, and sired by a good purebred bull of quality The care and feeding of the calf during the first few months of its life is often the deciding factor as to whether that calf is going to develop into a satisfactory cow or not. The ill-fed calf seldom develops into a satisfactory animal, and no matter how skilfully she is cared for as a heifer, she cannot be developed into a high class mature animal.

On the other hand it often happens that the well-fed heifer calf does not develop into a good cow, simply because she was not developed as a heifer. It pays to feed the growing heifer well and develop her as she should be. Any extra amount of feed given her wil lbe repaid when she becomes a cow. Here is where a great many of our dairymn fall down, they practically let the heifer shift for herself as much as possible and consequently she does attain the size or development she should. One of the main reasons why the dairymen of Scotland are so successful is that they lay great emphasis upon the feeding of their heifers and consequently they grow into profitable dairy cows.

Feeding the Calf

The calf should have its mother's milk for the first three or four days. The fresh milk of the newly calved cow contains what is necessary to stimulate the newly born calf's digestive system into action. At least the calf should have fresh milk till two weeks old, five to six quarts a day being sufficient. After that time, skim milk may be substituted gradually, till finally the whole milk is dropped entirely. As the whole milk is decreased some substitute should be added to the skim milk to supply the fat which is lacking in that article. One part ground flax seed, two parts fine sifted cornmeal, two parts finely ground oatmeal, make a very satisfactory mixture when fed in addition to skim milk.

At three weeks or so the calf will commence to nibble at a little hay, and some nice clover hay should be within reach of it at all times. It is not wise to pasture calves until they are at least six months of age, and then only on good pasture with plenty of shelter. The calf requires more concentrated feed than grass supplies, and consequently young calves do not do as well on pasture as when stabled and well fed.

Developing the Heifer

In spring all calves over seven months old can be turned out to grass and if the pasture is good that is all the feed they require till fall. They should have plenty shade, water and salt twice a week. When brought into the stable the food should be plentiful. Silage, roots, clover hay and good quality straw, together with a little meal, will keep them growing steadily throughout the winter. There is nothing better than silage and turnips to put growth on a young animal and it wil pay to feed such feeds to the growing heifers.

It is not good practice to breed a dairy heifer until she is at least twenty months old, but this will depend largely upon the development of the heifer, and to some extent upon the breed. At any rate she should not be bred before she is properly developed. During the period she is carrying her first calf she should be handled occasionally, so that she may cause as little trouble as possible when first commencing to milk. Great care is also necessary just before the heifer freshens so as to prevent any udder trouble, etc., so often caused by feeding to heavily on strong meals.

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Thousands of dairy farmers have deluded themselves by using scrub bulls. Result—low producing, low testing, ill shaped, unprofitable cows.

Do you realize that a good bull is more than half the herd, but a scrub is mighty near all of it?

In this age of high prices—

Economy and Efficiency

is the watchword of every manufacturer.

Mr. Dairyman: Do they apply to you?

If so, remember that no breed has ever proved their superiority to the *Ayrshire* in these two great essentials. *Start right*—put an *Ayrshire Bull* at the head of your *herd* and grade it up.

For information about the *Ayrshire* breed, write:—

W. F. STEPHEN,
Secretary

Canadian Ayrshire Breeders' Ass'n
HUNTINGDON, QUE.

10

LANDS WANTED FOR... SOLDIER SETTLERS

POWERS have been granted to the Soldier Settlement Board of Canada by Order in Council of the 11th of February, 1919, to purchase land to be re-sold to qualified returned soldiers who desire to make farming their permanent vocation.

To assist soldiers in settling in any suitable district in which they may wish to locate, the Soldier Settlement Board desires to have filed in each of their Provincial Offices a select list of farm lands available for purchase in each district of the Eastern Provinces, with full description and lowest cash prices of the same. Purchases by the Board will be paid for in cash.

The public are informed that this land is for purchase by returned soldiers, and must be of good agricultural quality, and reasonable price, making possible the success of the soldier as a farmer. It should be within seven miles of a railway, open, free from weeds, water supply assured, and of moderate price. In giving particulars, mention nearest market and school. In comparison with the vast supply of vacant lands, the number of farms immediately required will be very limited. Owners, therefore, will kindly assist the Board by offering for the present only land which fills the above requirements.

No commission will be charged or paid. No offers to sell will be binding on the person offering, unless a sale is effected, and no obligation will be on the Board to accept any offer.

If application from a returned soldier be received for the purchase of land, an inspection and valuation of such land may be made by the Board, as soon as free from snow. If approved, negotiations may be entered into for the purchase and sale thereof. An approved list is desired for each suitable district throughout Canada

All communications concerning land in the Eastern Provinces should be addressed to the Provincial Supervisor of the Soldier Settlement Board for the province in which the land offered for sale is situated, a list of whom is given below:—

ONTARIO:
Mr. W. M. Jones, 32 Adelaide St. E., Toronto.

QUEBEC:
Lt.-Col. Bruce F. Campbell, Drummond Bldg., Montreal.

NEW BRUNSWICK:
Mr. Wm. Kerr, Post Office Bldg., St. John.

NOVA SCOTIA:
Mr. R. H. Congdon, 529 Barrington St., Halifax.

PRINCE EDWARD ISLAND:
Soldier Settlement Board, Riley Bldg., Charlottetown.

SOLDIER SETTLEMENT BOARD, Canada.

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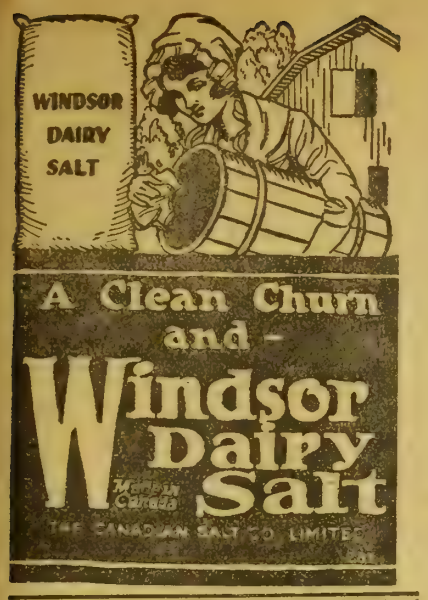

Bran is the best concentrate to give the heifer at this time and it is also wise to reduce the allowance of silago, especially if there is any amount of grain in it. It is also good practice to milk the heifer as long a period as possible the first year, as this tends to fix the length of her lactation periods in future years. The heifer that is allowed to go dry at nine months the first year is very likely to do the same the following year, and so on throughout her years of work as a dairy cow.

THE CARE OF THE MILKING MACHINE

(Experimental Farms Note)

In the production of pure milk with milking machine, great care is necessary in the handling and washing of the machine. Milk that is allowed to become dry on the parts is very difficult to get off. To avoid this, as soon as the cows are milked and the milk empitied, but while the pump is still running, cold water should be drawn through the teat cups into the can. The machines should then be removed to the dairy and dismantled. The can covers to which the pusator is usually attached should be washed, wiped dry and hung up. The teat cups and tubes should be washed in hot water to which has been added some alkaline washing powder. This will dissolve any fats adhering to the parts. Once a day, a brush should be used on the interior of the teat cups. These parts should now be put into a sterilized solution until next milking time. Once a week the teat cups and attached rubbers should be taken apart and thoroughly washed in hot alkaline water with the special brushes suplied for this purpose. The cans may be handled with the rest of the dairy utensils in the ordinary way, steaming or scalding and draining in a room free from dust being important.

On taking the teat cups from the sterilizing solution for the next milking, they should be rinsed in fresh, cold water and then be assembled. At this stage, the drawing of scalding water through the teat cups into the cans would have a beneficial effect but is liable to injure the rubber. When adjusting the milker and attaching the teat cups to the cow's teats, be careful not to draw barn air through the tubes into the can. In shifting the machine from one cow to another and changing the cans let the milk and cans be exposed to the barn ais as little as possible.

One of the best sterilizing solutions to use is composed of chloride of lime. Use fresh chloride of lime, preferably from sealed tins and provide an earthenware crock. Into this put one pound of chloride of lime and add a gallon of cold water. Break up the lumps, stir thoroughly and then allow to settle. Cover and keep in a cool place. This is a stock solution and only the clear liquid off the top is to be used. In making up the solution ofr the teat cups use one pint of this stock solution to every ten gallons of water. As the sterilizing action gradually decreases, add another half-pint of the stock solution every three or four days as long as this solution is kept in use. The old solution should be emptied out and a new solution made as often as is necessary to keep it clean. A new stock solution should be made at least every two weeks.

The keeping of the outside metal parts of the teat cups and pails bright is not so important but improves the appearance of the machines. For this purpose such polishing substances as Bon Ami, Dutch Cleanser, etc., may be used.

TESTS IN FEEDING BREEDING FEMALES

Proper feeding has much to do with assuring the full gestation period, and a normal birth of healthy, vigorous offspring. The use of good roughages, such as alfalfa and clover hay, solves the problem except where trouble is caused by contagion. These facts have been fully proved by a series of experiments covering the past ten years at the Wisconsin Experimental Station, where cows were fed a variety of balanced rations from calfhood to maturity and on through several gestation periods The first principal they discovered is that a balance between protein and energy in the feed is not sufficient Abundant mineral matter is necessary. Some feeds contain unknown injurious substances, whose evil effects are only counterbalanced by a suitable variety in the ration.

Even with good roughage it was found that wheat or its by-products should not be fed continuously too liberally, or the offspring would be weak. Injurious effects were produced especially by feeding the embryo of the wheat kernel. Poor roughages to cause early delivery of offspring and failure of the cow properly to clean, with the consequent liability to starting infection. The low mineral content seemed to be the cause of injury from feeding too exclusively on straw for roughage. The experiments significantly comment that "the condition of the straw-stack herd, without reference to what the calves may be, is direct evidence of poor nutrition." Cows fed entirely on wheat products and straw, or on oat products and straw, always produced either weak or dead calves or abortions. Those fed on these rations with half of the straw replaced by alfalfa hay produced strong calves.

Dairymen especially should apply these teachings. While it is well known that contagious abortion is common in dairy districts, it is important for breeders to recognize the fact that it is possible to produce dead or weak premature calves from the improper selection of feeds. Contagion is doubtless blamed for much damage which it does not cause. Heavy milking cows frequently secrete more mineral matter in their milk than is supplide by their feed. The evils of poor nutrition are added to those of contagion and the disaster is increased. On the other hand, sufficient minearl nutrition may be expected to check the damage done by infction. This phase of the problem is not covered by the Wisconsin tests, but logically presents itself for thoughtful consideration, because it is known that some cows naturally possess, and others acquire, a degree of immunity to infection. Proper feeding may help.—E. T. R.

Keep Cows Well
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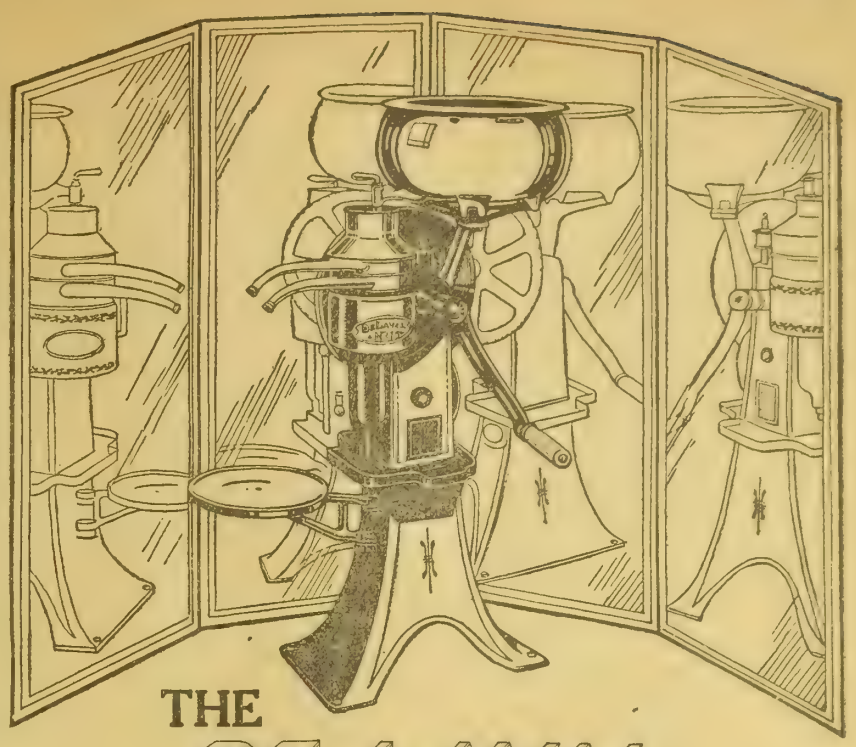

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LIVE STOCK.

ADVANTAGES OF DIPPING

It is important, in order to gain success in sheep husbandry, to be assured that the sheep are in a healthy condition when brought into winter quarters. Under close housing conditions infection runs rife and parasites increase at an alarming rate. This is especially true of mite, causing sheep scab, the louse and the sheep tick. The wool, being long in the winter, the tick is protected and, consequently, receives greater opportunity for rapid growth and for reproduction of hordes of its own kind. Its ravages, however, can always be lessened and, to a large extent, entirely prevented by fall dipping.

If any sheep ni the flock should appear to be infected with scab, that sheep should, without delay, be isolated from the healthy ones. The wool should be clipped from that portion of the body directly affected with the disease, so as to permit the dip coming in full contact with the scabby skin. The sheep should at once be dipped in some reliable material twice at least, and three times still better, at intervals of ten days. A longer period may elapse between the second anad third dippings. The stringent, precauationary measures of quarantine and compulsor dipping of infected cases adopted and pursued by the Dominion Department of Agriculture, has, however, happily kept in subjection the most dread disease.

It should be explained that sheep scab is a contagious disease governed by the Animal Contagious Diseases' Act and that the owner of a flock in which an outbreak has been discovered is bound to report the fact to the department. Failure to make such report involves the penalty of a fine of not more than $200.

Necessity of Dipping

With the average flockmaster, dipping is directed specifically against the sheep tick. Dipping for this purpose should be practiced twice a year, in the spring after the sheep are shorn and in the fall as they are taken from pasture. Most shepherds realize the necessity of dipping in the spring when the ticks are plainly visible on the shorn sheep. In the fall the ticks are deeply hidden in the recesses of the wool, and to the careless sheep raiser are not apparent. He rests under the delusion that the one dipping has destroyed all of these external parasites or that there are not sufficient left to compel a second dipping. This is a mistake that, it must be regretted, with the average farmer is far too usual. It is really more important to dip in the fall than in the spring, since in the spring, if the sheep are shorn early, cold weather will very frequently destroy the unprotected ticks. At that time of year it is more essential to dip the lambs, since the ticks will leave the shorn bodies of the ewes and take up their abode in the longer wool of the lambs where they can obtain some shelter against the cold. Besides, if sheep are severely infested with ticks during the winter they lose flesh and become debiliated more rapidly than during the summer, when both feed and weather conditions are of a more propitious nature to aid the upbiulding or recuperation of their vitality.

Classes of Dips

Diips can be classified according to the nature of the poison they contain, as carbolic, arsenic and tobacco. Most standard proprietary dips will produce effective results, providing the directions of the manufacturers are carefully followed. No material, however, should be purchased without a thorough investigation of its merits. The farmer who raises a small number of sheep may club together with others so as to permit purchase in large quantities, which will not only reduce the cost but assure a good quality of dip.

For a small flock of sheep it will not be necessary to construct an elaborate dipping apparatus. A tub or trough, large enough to hold a sheep will answer the purpose. There should also be a small pen connected with the dipping trough and with a floor sloping toward the latter, wherein the sheep may be perimtted to drain. The wool especially if long, will soak up a large quantity of dip, a part of which can be saved by keeping the sheep in a draining pen for several minutes.

Description of Tank

Modern steel tanks may be purchased on the market at a reasonable cost. One can readily be made by a tinsmith from galvanized iron, or a wooden frame can be constructed and lined with a thin layer of this material. Concrete vats are also coming into comon use. For the average sheep raiser quite satisfactory results be obtained from a tank made entirely from inch and a half pine plank, smoothly planed and firmly bolted together. The joints should be well covered with pitch to prevent leaking.

A tank conforming with the following measurements, will prove suitable for a flock of 50 to 500 head: 10 feet long at the top, 3½ feet at the bottom, 2 feet wide and 4 feet deep. The sides and one end are perpendicular, the other end having a slope in the neighborhood of 35 degrees. On the entire inner surface of the sloping end are fastened cleats 8 inches apart. These form a stairway by means of which the sheep with little or no aid, can climb from the vat. The tank is placed in the ground so that the upper edge rests only a foot or so above the surface.

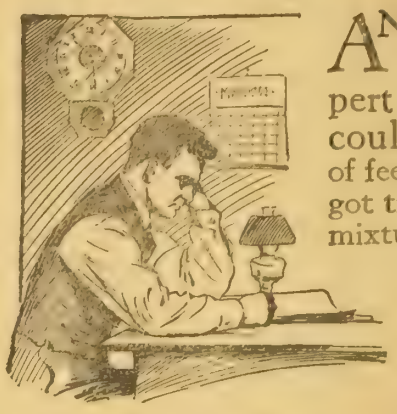
Draining Pens

The dripping pen is connected with the tank at its sloping end. The sides of this pen may be made of heavy 1 by 4 inch slats with a matched plank floor. The floor should decline gradually toward the vat, so as to permit the return of the dipping fluid. It should also be cleated, but openings, to provide for small narrow drains, must be left on both sides. The draining pen may be very long and the same width throughout as the vat, or it is commonoly made triangular shaped, the same width as the tank where it joins the latter, 5 feet at the other end, 10 feet long. In large flocks it is sometimes an advantage to have two dripping enclosures, one following the other. By so doing more fluid can be saved.

Unless the tank can be conveniently placed in close proximity to the gate of a sma'l yard, a pen 8 to 15 feet long and the same width as the vat, should join the vertical end of the latter. In structure it resembles the draining pen except that a sloping floor is not necessary. The floor should be on a level with the topmost edge of the vat. From this pen the sheep can be plunged into the dipping fluid. A cleated floor here is also an advantage, and a sloping runway at the entrance.

Dipping should be performed, if possible, on a bright, sunny day, so that the sheep may have an opportunity to dry off perfectly. They should remain in ithe dip at least two minutes. Several minutes must be allowed for draining. The fluid should be heated to about 110 degrees Fahr. Guard, however, against having it so warm as to give the animals a sudden chill when they return to the cold air.—By T. Reg. Arkell.

Let Experts Figure the Rations



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ANYBODY can feed a hog—but only experts can feed for *tip-top results*. Who but an expert with years of study and special experience could properly make available the odds and ends of feed materials about your farm. Certainly you haven't got time either to study scientific feeding or to figure out mixtures changing with the feed materials that happen to be available to you.

Let the experts figure your rations.

Our experts—Canadian experts with closest knowledge of Canadian needs—have the time, the scientific training and the facilities for proper selection and mixing of feeds. The result is

Monarch Hog Feed

the cheapest feed available because it means good, firm, hard bacon, commanding best prices. It means quality bacon at minimum cost of production when feeds are high-priced. In short, it means extra profits put into your pocket.

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Decidedly you should feed not only for results but for MAXIMUM profits. With Monarch you can do it. Give it a trial. Order a ton from your dealer. If he can't supply Monarch write us direct, giving dealer's name.

MONARCH DAIRY FEED

has guaranteed analysis of 20% protein and 4% fat. It is a properly mixed combination of Oil Cake Meal and Cotton-seed meal with the bulky feeds, bran and corn meal. Though very rich, ensuring splendid results, it can be fed alone.

SAMPSON FEED

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18A

INFLUENCE OF THE AGE OF THE COW ON THE COMPOSITION AND PROPERTIES OF MILK AND MILK FAT

The question of the changes in the composition of milk with successive lactation periods and particularly the question of relation to the percentage of fat in the milk of the heifer has been of great practical importance to th edairyman, as a possible index of what may be expected from the mature animals. The conclusions so far reached from data compiled by several investigators have not been entirely uniform. This paper offers new data on the question, taken from the records of the University of Missouri dair yherd, composed of purebred animals of the Jersey, Holstein, Ayrshire anad Shorthorn breeds.

The data showing the average percentage of fat for the successive lactation periods of all animals of each breed and similar data for the entire herd are given in tables in the Institute Buletin.

These data show that the percentage of fat in the milk of Jersey cows attains its maximum with respect to the average for the entire lactation ptriod during any one of the first three periods, but the chances appear to be greater that this will be attained in the second or thir period rather than the first.

Holstein cows on the contrary almost invariably show the highest average of fat for the lactation period during the first period and the conclusion seems justified that this is a breed characteristic.

Ayshire cows more frequently show a higher average lactation test during the first than during subsequent periods, but less frequently than in the case of Holstein cows.

The variations in the average percentage of fat among the first few lactation periods are not sufficiently great to be of much practical importance but the gradual decline in average test accumulates to a figure of considerable importance as the number of lactation periods becomes greater.

The fact that certain of the animals of the Jersey and Holstein breeds whose records are included in the data, comprised an experiment to determine the influences of the plane of nutrition during growth and age of first calving upon the dairy qualities of cows, suggested that the two factors may have contributed to the dif ference in the character of the data from the two breeds.

The data concerning the influence of the plane of nutrition during the growth, indicate that this factor may be of importance in connection with the average fat test for the first lactation period. The light-fed Jerseys showed both a lower average test in the first latcation period and also a less frequent tendency for this period to show the highest test, while the heavy fed Jerseys sowed exactly opposite results. The strong breed tendency for the Holsteins to show a higher average test in the first lactation period than in any subsequent period was also materialy diminished by light feeding during the growth of the animals.

It must also be considered that the light feeding of the animals for both breeds was by no means extreme, although it was widely different from the heavy feeding carried out with the other animals in the experiment.

The data bearing on the age of first parturition indicate that a difference of 16 months between the first parturition of the Jerseys had little influence upon the breed tendency already noted for the higher test to accompany the second lactation period. In the case of the Holsteins, however, calving at a more advanced age seemed to decrease the breed tendncy for th first lactation period to show the higher average test. As far as the composition and properties of milk of aged cows is concerned neither the percentage composition of the milk nor the physical and chemical constants of the milk fat of aged cows show any abnormalities attributable to old age.

Butter made from the milk of a cow 19 years old and in her thirteenth lactation period was pronounced to be of excellent quality and kept for a period of three months at a temperature of 8° to 10° C, (46° to 50° F.) without showing any marked deterioration.—C. H. Eckles and L. S. Palmer in the Journal of Agricultural Research.

Shorthorns

The Breed For You

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Dominion Shorthorn Breeders' Association

W. A. DRYDEN, *President*, Brooklin, Ont.
G. E. DAY, *Secretary*, Box 285, Guelph, Ont.

22

LESS DAIRY DRUDGERY

Nearly every dariyman who has used a milking machine for six months or more and knows how to handle it properly declares that there is nothing like it. If he had to go back to the old method of milking by hand he would go out of business at once. With two good machines one man can milk at least 20 cows in half an hour, which means that at least an hour and a half's time is saved. It is such laborr-saving appliances as the milking machine that keeps our boys on the farm. It is drudgery which sends boys to the city, and to most boys mliking cows after coming in from the fields is the worst kind of drudgery. The milking machine is one of the forces which are making the farm a better place to live and the farmer's life more pleasant.

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A savings bank account is a splendid thing, but if you own cows and have no silo you will find that a few dollars invested in a good silo will bring you very much greater returns than the same amount put into the bank. The average savings bank pays 3½ or 4%

An IDEAL GREEN FEED SILO will pay 100%

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Keep the cows in clover all the winter long

COWOLOGY

Rub-a-dub-dubs,
Three men all with scrubs,,
They flounder and flatter and feed,
'Till they're blue in the face,
And worn out with the race,
Then ask if there's value in breed.

The first thought he knew
Of only a few
Of dairymen who had made kale;
So he sold all his cows
But now he allows
That his is a slim dinner pail.

The second made a raid,
From scrub turned to grade
And now 'stead of bills has some debtors,
His friends thought it well—
His decision to sell
The cows that had kept him in fetters.

The third took the lead,
Sold out; ;bought a breed
And now he makes money galore.
He sells cheese and calves,
Then the proceeds he halves,
The right buys a bull to make more.

Left half hits the road
To lighten the load
Of the wife who has helped save the mon.
And the girls and the boys,
Have a life full of joys.
Sure! Life in the city they'll shun.

So if you've a scrub,
Don't be a dense dub
And conclude that there's nothing in cows,
Clean house; take the lead
Buckle up; name the breed
And your home will rest high in the boughs.

I. J. MATTHEWS.

The best practice in removing horns is to use caustic potash on the young calves, apply it before the horns are enough developed that they break through the skin. This operations is a simple one and is very much to be preferred to waiting until the horns are developed and then having them taken off with a saw or clipper.

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OR PAIN KILLER FOR THE HUMAN BODY
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THE HORSE

METHODS OF TONING UP "OUT OF CONDITION" YOUNG COLT AND WORKING HORSE

Had horses suffered from as many diseases while in the natural state as they do in the domesticated surroundings on the farm, they would, as a species, long ere now have ceased to exist. It is a well-known fact to all who take intelligent interest in the domesticated life of the horse that most of the diseases that follow the life of the farm horse are due to this domestication. Those who are most successful in horse raising are those who consider these changed conditions from that of nature, and substitute for them artificial methods of attention that bring health and vigor to the animals. The whole secret of success lies in adapting the artificial methods to meet the necessary requirements of the animal.

The conditions around the young horse stock of the farm in winter are so different from the natural that many of the diseases that afflict the animals in after years are generated in their organisms while under the average care in colthood. The number of queries that reach this office asking advice as to tonics and medicines for certain apparent maladies, gives evidence that many farmers still beleive that tonics can take the place of good food and good care, or at least they will put to rights the ravages of close confinement and poor feeding.

The "Condition Powder Craze

There are a host of popular ideas abroad with many farmers about the virtue of certain drugs and their believed magival effect on the horse. Under the name of "condition powders" large quantities of secret preparations are sold throughout the country, the avowed object of which is to restore to vigor horses which are out of condition, and to increase their appetite. The majority of these powders do more harm thai good. They are generally composed of stimulating and heating substances, and unwisely administered, by persons ignorant of their composition, they often give, for a time, an appearance of health and vigor to the animal, followed by a worse attack of disease.

It takes close observation to follow the dictates of nature in feeding horses, and colic, indigestion, inflammation of the bowels, impaction, and the more severe forms of a sickness following these ailments, is due to the failure to feed clean, wholesome food, or failure to feed regularly. An intelligent caretaker is the greatest factor in bringing success, while the slipshod, non-observant feeder is a loss though his services may be given free. This fact holds good with all classes of farm live stock. Sick horses are many times the result of failure to observe some of the simpie rules of health that nature teaches in governing horse treatment.

Out of Condition Animals

When a horses's general health is termed as being out of condition it may be applied to two very different states of the system. One is where the animal has been well fed and cared for, and is sleek and seemingly robust. But he begins to get particular about his food, searches for dainty morsels, loses much of his appetite, the eye is dull and bloodshot, there is an absence of spirit in the animal, and a general want of tone.

Now, this is nothing else than what medical men call a state of plethora; there is a formation of superfluous blood and fat, owing to too rich and abundant diet, and an insufficiency of exercise and pure air. When a horse is in this condition medicines are usualy of little use, and the quack "dope" may be decidedly dangerous. All that is required in a case like this is a change to a poorer diet, and a diminished quantity, and if abundance of exercise is given, these symptoms will soon pass away. If it is an extremely bad case it may still persist after this natural remedy. Then a small dose of aloes, say four to five drachms twice a week, should be given; and an ounce of saltpetre placed in the water about as often. These agents act on the bowels and kidneys, and will soon relieve the overloaded system.

Another form of "out of condition" is seen in young neglected colts, or underfed working horses. The coat is rough and staring, the skin dry and often hidebound, the bowels are irregular, and the animal has lost its natural "fire." With a young horse once down to this condition it is doubtful if ever he can be courted back by any kind of treatment, to resume the vitality he had when a sucking colt by the side of his dam.

The spirit and vitality he had then ought to be kept with him through life. No better ideal can be set up for horse rearing, than the spirited, thriving, young colt before weaning; a product of nature that too often gets the check that irreparably stunts it for life. To expect that condition powders wil lrepair the damage thus done to a young colt and that it is a short cut to removing the evil, will be fraught with failure, unless it is backed up with very painstaking feeding and care.

With too many farmers hay is hay, whether it is clover or timothy or whether it has come off sour land or land that has the fertile properties of lime and phosphates. In frame or bone building, the colt requires mineral matter in its food. In order to obtain ample bone growth in the young colt it is essential that an abundant supply of the soil ingredients for the formation of bone should be available in the soil. This is the natural way of providing the mineral matter in food, and avoids any risk which some are tempted to take without skilled knowledge in supplying mineral matter in feeds.

It is always a risky undertaking to drug young growing colts, prevention against an out of condition state should be practiced. If, however, one is found to make but poor headway in regaining health or attaining maximum growth, it is possible by judicious use of medicine, along with charged anad better quality of food. to give the colt a new start. But one thing to always remember in giving a colt drugs, or tonics is to never apply them when the colt is shedding his coat of hair.

The methods of courting the young colt back to health and vigor can likewise be given to the hard worked and often underfed horse. In every case the trouble is indigestion and the secretory organs must first be restored to activity. Grooming and cleaning the skin thoroughly, and an ounce of salt petre should be given in a mash every other day to excite the kidneys; a moderate dose of aloes given, and soft, easily digested food.

Some science and observation is needed too, even in feeding hay. The notion that clover or alfalfa hay is injurious to horses anda that clover hay causes heaves, come sfrom not understanading the horse and the feed. Timothy hay does not cause heaves because horses will not eat enought of it, they do not like it well enough. Over loading a horses's stomach, especially when a horse is called upo nto work in that condition, with any forage may help to cause heaves, and the belief that clover is a heave producer is established because horses eat a lot of clover when they can get it and most farm horses are fed too much hay. Neither clover or alfalfa is injurious when fed in moderation.

Feed alfalfa at the rate of about one pound of hay per day to each hundred pounds of horse, if grain is fed, and a little more won't hurt if the horses are being wintered on a hay diet. Never cram the horse mangers full of hay.

Roughage is the chief natural source of mineral matter in feeds, and clovers and alfalfa are much richer in this respect than other forage. This suggests the filling up of growing horses and working horses in winter on clover, alfalfa or kindred hay, and then supplying enough grain, principally oats, to maintain a suitable degree of flesh to accompany rapid growth in the young horse or motive power in the work horse.

HORSE BREEDING AND SALES

The intelligent farmer who is in the horse bredeing business for the mo-

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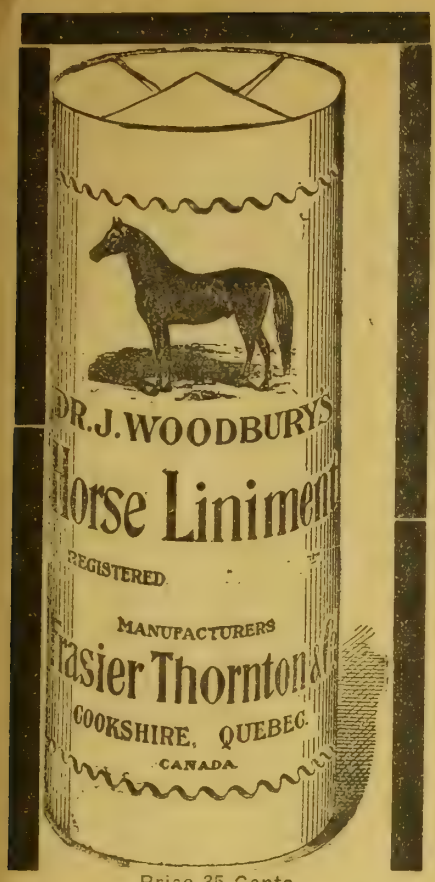
Pat. in Can. Apr. 6, 1915



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ney that is in it, and after all that is the real reason in every case, will dispose of all animals, except under unusual conditions, when they have reached their highest value, producing mares, of course, excepted. Every gelding and shy breeding mare should be sold between the ages of five and seven years. Once a farmer is in a position to raise horses to the best advantage, his producing mares and young horses can do the ordinary work of the farm If one would breed horses, and fit them for sale to the best purpose he must first learn what the market demands and then govern

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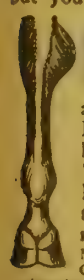

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his actions accordingly. Horse dealers, like dealers in other commodities, will pay the highest price for what they can sell the best, which means that they have constantly in mind three distinct attributes, the relative importance of which is probably indicated by the sequence in which they are mentioned, viz., quality, condition, and manners; soundness, of course, being understood.

A good horse in poor condition is always a poor investment for the dealer, as he cannot be disposed of for anything approaching his real value, while a very ordinary animal in prime fettle can be sold for the last cent that is in him. Always remember that a better return for feed used and time expended can be had in conditioning horses for sale, then in fitting any other kind of farm stock.

Good manners in work horses is a most important attribute, and one the intelligent buyer is always ready to pay for. A horse of the finest conformation and quality, if balky, vicious, or hard to handle is practically useless, while ordinary animals, if thoroughly educated, are a canstant source of satisfaction to the man who works them Good manners, however, cannot be taught in a day; they are the result of careful and intelligent handling. Breed to stallions of good temperament, as vice is very often inherited.

In good horse producing localities co-operative effort should be along the line of establishing regular sale days at local centres, where horses could be taken for sale. Once properly advertised there would be no dearth of buyers, as dealers could thus avoid the exepnese and trouble of driving the country to find out where a likely sale co uld be made. Wherever there are horse producing areas, concerted ffort should be made to properly advertise the fact.

YOUNG MARE THAT INTERFERES

I have a three-year-old mare that interferes, what way could I get her shod to prevent it? What will take away the lump the interfering has caused?—M. S. S.

Reply.—It is difficult to advise you without seeing the animal as interfering may be caused by a variety of causes that make the foot that is going forward strike against the other leg. Colts before being shod never interfere, but often do it as soon as shod. The shoeing is a common cause, the foot is often pared down too much on the inner side, tipping the fetlock in so as to bring it in the way of the other foot. Take the horse to a shoer who is an artist at the business. As a rule no two feet are alike, and it requires an artist and a mechanic to change the position of the feet and legs resjectively. A good rule to follow is to shoe so as to tip the fetlocks out, giving the feet room to pass without brushing. This is done by leaving the inner side strong and paring down the outer side, which will throw the centre of gravity in a new line and often prove successful. If the horse is overworked, thin and weak, give him a rest and a little better feeding. There is no plan much more effectual than to spread the legs with good solid flesh, making him travel wider.

An efficient, cheap and useful lotion to aid in removing the bruise will be found by mixing together acetate of lead, one ounce; vinegar and water, each one pint.

TWO-YEAR-OLD COLT HAS MANGE OR ITCH

I have a colt, coming two years old, that is not thriving. She seems itchy all the time and I cannot find any vermin on her. She has rubbed most of the hair from the root of her tail.—P. H. F.

Reply.—Your colt is evidently suffering from mange. The insects that cause the itching are hardy visible to the naked eye. This disease is very contagious and measures should be taken to keep the colt away from the others, and also thoroughly clean and disinfect every blanket, every piece of harness, curry comb or utensil that has touched her. In all cases the utmost precautions should be taken to prevent the disease from spreading.

Make up an ointment with the following ingredients: powdered staves-acre two ounces, lard eight ounces, olive oil one ounce. Mix at a gentle heat. Before applying the ointment, wash the parts with warm water and soap to remove the crusts, dirt and scabs, then dry thoroughly, otherwise it will not reach the insects, especially the varieties that burrow into the skin.

CORNS IN HORSE'S FOOT

Please inform me what can be done to cure corns in a horse's foot.—E. P.

Reply.—Corns are only found in the fore feet, and almost always on the inside heel. They are caused by bad shoeing or wearing the shoe too long a time.

The shoe should be removed and if there is inflammation the foot should be poulticed, and if the corns are festered, an opening made to give vent to the pus. The seat of the corn should be pared, care being taken not to cut out portions of the bars or the frogs. As a corn salve, use the following: Tar, beeswax, honey, of each one-fourth pound; glycerine, three ounces; lard, half a pound; nitric acid, two drachms. Melt the lard and beeswax to gether, stir in the other ingredients, and stir till cold.

STALLION EXERCISE

The stallion that has stood in a cramped dark box stall since the close of the breeding season last summer is not likely to be a very sure foal getter. Stallions in heavy service should be walked at least six miles every day during the breeding season and should have exercise every day in the year if they are to be kept in the best possible condition for service.

Leguminous plants are of special value in feeding animals as well as for improving the fertility of the soil. The hay of leguminous crops is rich in protein and also carbohydrates, hence is more economical for animals than hay made from non-legumes.

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4

POULTRY.

GIVE HATCHING EGGS A CHANCE

How They Should Be Handled.

Chicks that are healthy and well developed are those that come from well handled eggs. They are less liable to disease; better grown chicks; early winter layers; cockerels that are fit for broiling early; and pullets that will come broody early next spring. Early hatching and careful handling means gerater profit and better results all round.

Careless Hatching.—A large number of poor hatches are due to the fact that the hatching eggs have not been properly handled prior to the time that they have been placed in the incubator. One must remember that no matter how good the incubator, and how well it is taken care of, no incubator will hatch anything but the best eggs, and when one considers the complications which enter into incubation, and the many factors which are involved, it is surprising that as many eggs hatch or that as large a proportion of chicks are obtained from the number of eggs set. Because of these many difficulties which are involved in incubation, and because everything has to go along absolutely right, it is quite necessary and very important in order to secure good hatches, which means, of course, strong chicks, one must be careful in handling the eggs before they are ever set in the machine.

Ideal Handling.—Eggs should not be placed on their ends, but should be placed on the side, tilting slightly towards the point. It has been advocated by a great many, and it is being practiced still by many, to hold hatching eggs on their points. This is an unnatural position for an egg, and the saying goes that the only man who could stand an egg on its point was Columbus. As eggs naturally lie in a nest, they are on their sides. Had nature wanted these eggs held on their points, she would have given them another shape. The yolks in these eggs are held in place by the heavy, more tenacious part of the white known as the chalaza, and when the egg is placed on either end it is impossible for this chalaza to operate properly. The ideal way to handle hatching eggs previous to incubation is to gather them at least three or four times a day, and to place them in a cool moist place (40 degrees to 60 degrees F.) In holding eggs, it is well to keep a cover over them, as the dust which often comes from coal ashes or other sources is quite detrimental to them.

The Germ.—In considering the hatching egg as it should be, both as the germ from which the chick develops, and as the food from which this germ grows, let us first discuss the germ itself. When the egg is laid the germ is in what is known as the dormant stage. This is a condition which nature has provided to protect the germ while the clutch of eggs are being laid in the wild state, before the real incubation period starts. The germ in this state is able to withstand adverse conditions of temperature; quite low temperatures and quite high ones for a short time; it is able to stand quite a bit of jarring, and many other conditions which are very detrimental to the embryo chick as it later develops in the egg. It can be compared graphically to the buds on a tree during the winter tme. For nstance, it is a well-known fact that buds on a peach tree will stand quite severe cold weather during the winter. In the spring, when the warm weather comes along and conditions are right for these buds to start swelling or developing, they leave this dormant stage. They leave the stage in which they are protected, and it is equally well known that should a cold snap come along after these buds have swollen or left their dormant stage, that these buds will be killed by temperatures at this time which would not affect them in the least during the winter or during the dormant stage. The germ in the hatching egg is very much the same in this respect, and in the case of many eggs, which do not hatch, the trouble can be traced to this fact. Sometimes thees weakened germs will develop for the first seven days, but are not strong enough to go on farther. Occasionally they will hold on until about the fourteenth or fifteenth days before dying, but a great many of the germs weakened in this way die as full-developed chicks, just about the time when they are ready to leave the shell. Many have had the experience of having incubators almost full of eggs in which the chicks had reached full development, but lacked the strength to come through the shell, and they have been at loss trying to find fault in their method of handling incubators because their mistake had been made in improper handling of the eggs before they were put in the machine. Many cases of poor brooding can be laid at the door of improper handling of hatching eggs prior to incubation.

V. G. A.

THE BIRDS NEED SUNLIGHT

Poultry houses should be so constructed that sunlight may reach every part of the interior. Sunlight is our best disinfectant, and we should use more of it. By this it is not meant that the house should be built of glass. We must take into consideration the variation in temperature between day and night. Too much sunlight unduly heats the house during the day time and the more glass there is the cooler the house is at night. No rule can be given, but, roughly speaking, about one-third of the front might be given up to glass, and two-thirds to cotton. The shape of the window has something to do with the results. In deep houses (16 to 20 feet wide) windows should be arranged up and down, not crosswise; a window 3x5 feet, placed with the 3 feet up and down, will not be as satisfactory as if t were placed the other way. It is not that the windows placed vertically will allow more sunlight, but the rays of the sun going through a vertical window strike more of the interior, just as a wider broom takes a wider swath, so the rays of the sun through the windows vertically touch more space than when the window is placed horizontally.

Windows are better, if not secured fast. There should always be provision for opening them, and double windows should never be used. It is well, however, where high winds are prevalent, to have the windows arranged so that when they are opened up the draught will not strike immediately upon the fowls. This can be managed by hanging the windows on the inside at the bottom and a chain or rod used to let the top of the window into the house, more or less, as desired. The ordinary sash window serves very well in most locations. The top sash can be let down and the bottom still used to protect the poultry. Various hints for fastening windows are given but probably the most popular window and the one that gives the best results in most localities is the sliding window. A window that slides back and

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forth can be adjusted to admit almost any portion of air required. With this style of window, however, much trouble will be obviated if there is no groove at the bottom. This groove always collects water and moisture. This freezes and the window is fast wherever it happens to be. The best arrangement for a sliding window is to have two small cleats nailed to the inside of the bottom of the frame and a strip arranged so that it holds the bottom of the window in place and upon which the two cleats rest. This allows the water to fall through and leaves nothing to obstruct the sliding of the window. For large windows the sliding style is much safer. The window cannot blow out and there is very little danger of anything breaking and allowing it to drop. Small windows, however, can be hinged with fairly reasonable safety.

DUSTY DIRT FLOORS IN POULTRY HOUSE

Dirt floors in poultry houses are cheap and possibly they may be a success when the right kind of soil is properly tamped, but we have found dirt floors from garden loam to be undesirable as much of the dirt floor is soon transformed into dust and liberally sprinkled all over the house. As soon as the hens are given their scratch grain in the litter, the air becomes so dusty that the attendant can hardly breathe in the house. This is not healthful for the birds. We have had more trouble with hens showing watery eyes from colds when they were on an earth floor. The dust in the air seems to aggravate the slightest irritation of the eyes and such colds are difficult to cure unless the bird is removed to a house where the air is always clean, even when the birds are at work in the litter.

The sand floor is much better than the earth floor as the air will be cleaner when the birds are at work. If sand cannot be obtained we believe it is better to use plenty of litter on a wood or cement floor and leave out the soil entirely as the flock will be healthier.

The best folor in our opinion is a cement floor on a well-draned location. This can be covered with an inch or two of sahd and plenty of litter. The cement floor is a cold floor, but it can be made very satisfactory with sand and straw. A sand floor is satisfactory without wood or cement beneath but these garden loam floors are, according to our experience, always dusty and such houses are bad for the health of the birds and also for the poultryman who must work in them.—R. G. KIRBY.

SIMPLE PREVENTATIVES OF POULTRY DISEASE

In some respects it is easier to keep the poultry house and range sanitary in winter than in summer, for heat is a great inducement to the rapid increase of bacteria. The cold in winter-time holds diseases in check, but on the other hand, the hens are so much more crowded in their quarters that the effect is much the same.

As most of the diseases of hens are contracted through eating or drinking, or at least through the mouth and nostrils, it must be remembered that it is essential to keep the drinking water free from germs. Drinking vessels are too often left without any special cleansing or attention for weeks at a time. When a sick hen drinks out of a vessel and infects the water it contains, if the water is allowed to stand without being renewed, an ideal place for the germs to multiply is the result, which more often than not leads to a general scattering of the disease throughout the flock. The strong hens may not show any sign of infection, as with them nature begins a stern resistance at once and will throw off the disease germs before they can increase enough to become dangeorus; but the weaker hens will not be able to resist so strongly, and finally the germs triumph, break down the resistance entirely and your hens die.

The chance of infection is greatly lessened when the water vessels are so arranged that the hens cannot get their feet into them from the floor of the house or pen. It is safe to put a drop or two of carbolic acid to each quart of water in the drinking water at all times, or dissolve a pinch of permanganate of potash in it, enough to color the water a light wine red. Also keep charcoal where the hens can pick it up whenever they wish, and you will be giving them the best protection possible.

CANADA'S HENS COULD PAY FOR WAR

"Poultry and eggs could pay Canada's National War Debt," says Mr. Fred C. Elford, Superintendent of the Poultry Division of the Dominion Experimental Farm, Ottawa. And he produces figures to prove it which he will send to anyone on request.

The interest on our debt of $1,247,000,000.00 as on October 31st, 1918, at 5½ per cent., will amount to $68,585,000.00. We could pay this interest and apply a balance of $213,415,000.00 to reducing the principal every year, and in less than six years Canada's hens could wipe out the total monetary cost of the war to Canada, and our total net national debt!

DON'T WASTE EGG SHELLS

Poultry-keepers would do well to bear in mind that egg shells, after the eggs have been used, should never be thrown away or be consigned to the dust bin, as is frequently done. They should be given back to the hens in the form of shell material for future eggs.

Such shells, however, ought never to be given merely crushed, unless one wants the hens to acquire the egg-eating habit. Before putting the eggs in the gritbox, abstract any of the white that may be adhering to them, place them in the oven until dried, and then pound them finely.

The grain you feed the poultry in winter should be scattered in a deep litter so as to make the hens scratch for it. It wiill give them good exercise and also keep them warm.

Be sure to give the poultry plenty of pure air and sunshine.

A bird with closely worn toe nails is considered a better layer than one with long nails.

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

Our grand business is,
Not to see what lies dimly at a distance,
But to do what lies closely at hand.
—Carlyle.

THE VAMP

(By Inez Haynes Irwin)

"Isn't Molly coming today?" Phoebe Warburton asked of her sister-in-law, Sylvia Martin.

"She said she was," Sylvia answered. "I can't understand what's keeping her. It's her boast that she's never late to the Sewing Club."

"Yes, she does enjoy it," Mrs. Fall remarked, "it means a lot to her."

"It means a lot to all of us," Mrs. Day said gently. "I'm sure I don't know what I would do without ti. It has grown into my life so."

"It gives you something to look forward to. I find myself thinking of it all the week." Sylvia spoke a little absently. She had an occasional eye and a constant ear for the kitchen. From that direction, a door opening frequently let out the sound of cream being whipped.

"Iv'e been think of it a lot lately—analyzing it," Phoebe went on. "I think one reason that we enjoy it so much is that it's a comfortable way of growing middle-aged together."

"Middle-aged! Phoebe, you monster!" Mrs. Brodbeck charged.

"Yes, middle-aged!" Phoebe stood stanchly by her guns "We've reached the age, every one of us, when we're letting down, all along the line. We do over our last winter's evening colthes and our last summer's hats. We don't get massaged or marcelled or manicured. Oh, I suppose it's bound to be—"

'Yes," Mrs. Fall decided, "it can't be helped with children growing up! There's so much to buy for them—"

"Here's Molly now!" Sylvia exclaimed. "Oh!" This "Oh!" was merely recognition of Maggie who came in, wheeling the tea-wagon. Sylvia busied herself with the cups.

"You'r fired!" "Youre expelled!" "Charges will be preferred!" came in chorus as Mrs. Meredith entered the room.

Mrs. Meredith did not smile. She slowly drew a worn fur piece from about her neck; slowly took off her hat and coat. 'I've been long-distancing."

"Nothing serious, I hope?" Mrs. Brodbeck queried.

"Of course it's serious," Phoebe declared. "Not one of her dimples is on the job."

"I don't know whether it's serious or not," Mrs. Meredith said without smiling. "I don't know whether I'm in the worst pickle I ever was in or not. I dont know whether I'm a malefactor or not. I feel as though I was going to start a terrible epidemic in this town. I feel as though I was one of those human disease-carriers that you read about in the magazines."

"My goodness, Molly!" Phoebe broke, "what are talking about?"

"Listen!" Molly answered. And even now, not one of the dimples which Phoebe had predicated, appeared in the dusky round of her cheek. "You remember that I got a note from an unknown female about ten days ago, enclosing a letter of introduction from an old friend of mine, Alice Robinson? And perhaps you remember that the unknown female said she was coming to Boston, and that I invited her to spend a week with me." Her eyes, travelling about the circle of faces, apparently culled enough or recollection, for she went on—"Well, this morning I got a letter from Alice. I'll read it. It shouts for itself in large, round, emphatic letters:

Dear Molly:—In a few days, a girl from this town, Sybil Storrow, will present to you a letter of introduction, which I have just written for her. She's going to Boston for a visit and knowing that I had friends there, she asked me for letters. I was very glad to give them to her because Sibyl is a perfectly dandy girl. And yet, I thought I would like to write an extra word of explanation—something, as you will readily see, that would scarcely go into a letter of introduction. Somehow, it seems only fair to you to do this. I'm not quite sure that it's fair to her; but in thinking it over, I have concluded that I have no choice in the matter. Anyway, I'm taking the chance. So here goes!

As one woman to another, Sibyl Storrow is absolutely all right in every respect but one. She's perfectly honest in money matters; keeps her engagements; is straight, in short in all ways in which we like a woman to be straight. But nevertheless, ther's one thing about her. She's a flirt. She's an awful flirt. She's the worst flirt I've ever known in all my life. I don't think she means any real harm. Sometimes I think she can't help it. She was born that way. But she's rather exasperating to other women. Everything in trousers is fish for her net—babies in the cradle, boys in prep school, college men, middle-aged business men, doddering, senile wrecks—from nine to ninety she goes out after them all. And she gets them. That's the worst of it—she always gets them. There's something about her—what it is, search me. She makes me think of a song I've heard somewhere:

"What it was that Mary did,
Mary didn't know;
But everywhere that Mary went
The men were sure to go."

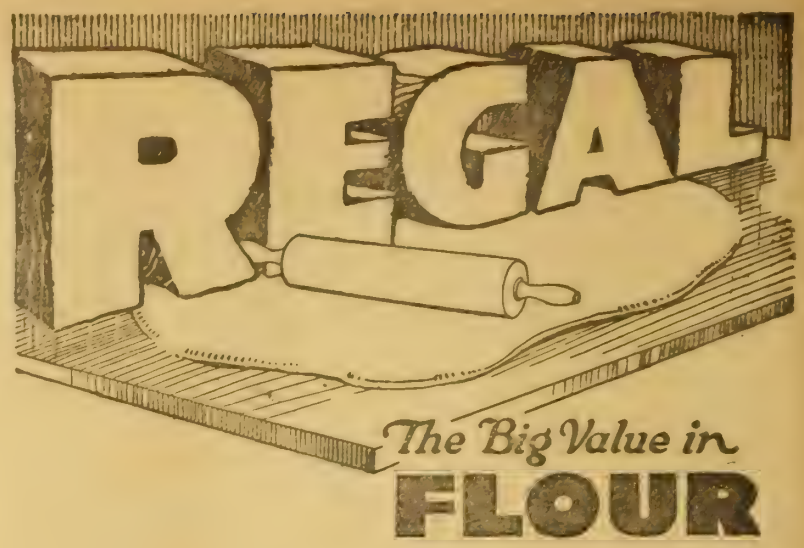
She isn't very pretty, although she does know how to dress. But she's got something about her that most women don't have. She can't help what she does. She attracts men—that's all there is to it. And so, my warning is—look out for sons, brothers, fathers, husbands, sweethearts. She's perfectly impartial. As I said before, I think she is harmless; but fascinate men she must and does.

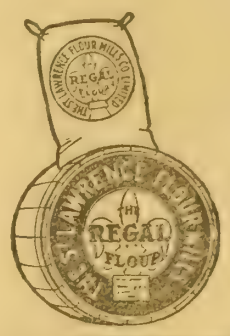
Now if it proves that I've unloosed a human scourge on your neighborhood, please forgive me. What else could I do when she asked me for letters?

Yours with love, but in great perplexity, Alice.

Now what do you think of that?" Mrs. Meredith demanded.

All her dimples were playing now. She was a pretty woman; rounded in contour; velvety in surface; duskily dark. She paused an instant to look into the glass, to pull down a rather tumbled waist, and to adujst the mussed lase at her neck. There was a stir in the room, as much psychological as physical. Mrs. Brodbeck and Mrs. Fall made an effort to blank their expressions. Mrs. Day's face took on an unmitigated seriousness. Sylvia alone showed no change. She went on serenely pouring tea. But Phoebe frankly laughed. "It sounds





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Perfectly packed in bright lead foil and price marked on every package.

to me as though there was going to be some doings in this town," she said.

"When is she coming?" Mrs. Brodbeck asked.

"Tonight," Mrs. Meredith answered.

"I wonder what she looks like?" Mrs. Fall dropped, in a little flat interval of seriousness.

"I haven't the remotest idea," Mrs. Meredith answered.

"Sibyl," Mrs. Day said musingly. "It' sa pretty name." Her China-blue eyes reflected in one of Sylvia's long, old-fashioned mirrors. They seem to take reassuring cognizanco of the white-and-gold prettiness they met there.

Phoebe sighed ostentatiously. "Well girls, I suppose we'll have to get out our old duds and do our best to compete with this whirlwind among men. Not that I personally think I have any chance. But if a vicious vampire is determined to tear my husband from me, I supose I won't give up without a struggle."

"Oh, she'll have an easy enough time with Tug," Mrs. Fall remarked. "Everybody knows how hard Tug is straining at the matrimonial leash.

"Pelase come to a party at my house tomorrow evening," Mrs. Meredith begged. "Bring your husbands and all adjacent males, encumbered or unencumbered. And let the slaughter begin at soon as possible. Of coure I'll sacrifice Elliott on the altar of hospitality, immediately. By the time you arrive she'll probably have swallowed him whole. But unless she falls into a state of torpor in order to digest him, I shall expect you to hand over your loved ones, one at a time."

"Tug," Phoebe commanded, "this is the night you are to put on your glad rags. This is the night I hand you over to the Circe from the Middle West. Of course, she will have snatched you from me forever, before we get home this evening; so I will now take this oportunity to bid you a long and lingering farewell. You've been a good husband to me Tug, and I wish I could have kept you. But with a young woman in the game, the mere mother of your six children must expect to go into the discard."

"Well, of course," Tug remarked, "the easiest thing I do is to fall for this vampire stuff. All my life I have hoped that some enchantress like this lady from Troy would decide to enslave me, no matter what the cost to herself or me. In farewell I will say, Phoebe, that you have been a very satisfactory mother to my children. I hope that your life isn't ruined and that some day you may meet another man who will make you really happy."

"That's nice, Tug," Phoebe responded with the dancing eyes which always accompanied the nonsensical dialogs which were her delight and Tug's. "Nobody could fill your place. I will say that, if you had taken my advice, you would have had a slimmer figure to present to this enchantress."

"It doesn't make any difference about my figure, woman," Tug remarked with much heat. "One look at this face, featured like a Greek god, and it's all off. It seems to me that you are looking pretty brisk this evening yourself, Mrs. Warburton."

"Well, of course, I am doing my feeble best to retain the father of my children," Phoebe explained meekly. And she gave a sidewise glance at the shining lights of her tulle-hung, blue evening gown. "Haven't been able to make up my mind for a long time whether I could afford a new evening gown or not."

"I'm glad you decided you could," Tug said heartily. "That gown is a bird. You look great."

When they entered Mrs. Meredith's charming big living room, every chair seemed to hold a coruscating specimen of womanhood. The couch, however, a big, high-backed affair, was surrounded with black-and-white masculine units. It was not until Mrs. Meredith said, "Miss Storrow, I want you to meeet . . . . " that its contents were revealed.

Then there disengaged itself from the black velvet background, a slight figure in white. That white was lustrous?surfaced. It dropped from slim shoulder to slimmer ankles in long lines that seemed a piquant combination of the mode of Greece with Paris. At the neck, a square of flesh showed a slight olive contrast with this ivory shimmer. Miss Storrow was a brunette, although she was pale; and her eyes were a little indeterminate in color and character. Her jet-black straight hung so close to her head that is might have been glued down; it invaded her forehead, her ears, her very cheeks in long shining loops, equally flat.

She acknowledged the introductions with a little jerky nod, and, turning immediately to a near-by mirror, proceeded to apply a lip-stick so vigorously that her mouth seemed to turn into an opening poppy. It echoed, that opening poppy, the scarlet of the long coral earrings; the scarlet of tiny, very pointed velvet slippers; the scarlet of a long, tasseled bag—the only bits of color in her costume.

The phonograph started the instant Miss Storrow had performed this delicate operation. "I've not danced with Mr. Warburton yet," she said. She glided in Tug's direction and that frankly-astonished gentlemaan suddenly found himself whirling her about the room.

Phoebe, with much amused gray eyes, watched their progress. "I take off my hat to her," she remarked under ner breath, seating herself beside Mrs. Day.

"Oh. you've lost most of it!" Mrs. Day said regretfully. "It's been wonderful. Well, will you look at that?"

(Continued next issue.)

THE MODEL KITCHEN

Some years ago our kitchens, as a rule, were not made so convenient as they are at this present age, for as the years have ben advancing we can see the disadvantages we have been put to in our work. The kitchen, the most important room in the house, generally lacks proper light, and ventilation, and being at the back of the house, rarely has a pleasant outlook. The best room is probably toward the view and too often closed and unused, while the housewife spends most of her waking hours in a kitchen backed toward the barns or washing dishes against a dead wall.

I would confine myself to two rules for constructing a model kitchen, and if you keep them in mind, when you make over yours, you will not go far astray.

The first rule is to make it convenient, and the second is to make it neat and cheerful for the one who spends the greatest amount of time in it.

To make the kitchen cheerful it would be well to have the walls and ceilings painted with as light bright tones as possible, such as pale green, bright blues, or fawn, with contrasting wood work as light as possible, also the floor painted light, or covered with linoleum. By painting with light colors, the kitchen is brighter and appears larger, thus giving a pleasanter sphere to work in.

The color note can be carried out in a bright colored scrim curtain, or a white one stencilled. Paper on the walls is not considered sanitary, as dust and odor adhere to it, also pictures and ornaments are objectionable. A clock is useful and ornamental.

It is well to have a ventilating hood over the cooking stove so that odors may be carried off . Where electric light cannot be obtained, the position of a hanging lamp is also important, or a rflector and and an extending bracket will often help the plain kitchen lamp to give better service.

If you are to save steps and time, this means that it is important to have the pantry, kitchen cabinet, cooking stove and table as near as you can ato one another. You will find it labor-saving in many ways. The sink should never be placed in a corner. If possible, put it where there is light from a window. The best place for it is the midle of a wall space, with a good drip board on either side of it and a table to the left.

Another helper to time and steps is a carrier conveniently arranged to convey the dishes and food to and from the dining room as required.

Time and steps saved are money saved, even in the kitchen, for the kitchen is the engine that runs the home machinery. I assure you it makes for happiness, as well as for

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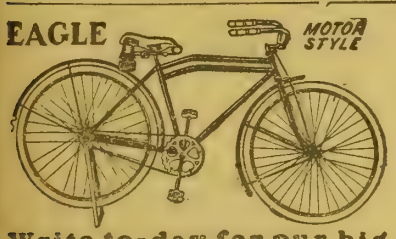
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WIFE'S COLD

Husband's Bronchitis

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NORWAY PINE SYRUP.

Mrs. James Mack, Trenton, Ont., writes:—"I suffered for several months with a bad cold. Some friends told me about Dr. Wood's Norway Pine Syrup, and of the benefit it was to them. Before I had used two bottles I could get some rest, which I could not do before. I had tried everything, but "Dr. Wood's" was the only thing that gave me any relief.

My husband suffered terribly from bronchitis, and did not know whether he was going to recover or not. At my druggist's, Mr. J. H. Dickey, I was advised to try your syrup, which I did, and am so thankful that I cannot recommend it highly enough."

Many people on the first sign of the slight cold or cough neglect it, thinking, perhaps, it will disappear in a day or two, but the longer it is let run the worse it gets until it settles on the lungs and serious results ensue.

On the first sign of a cough or cold, get rid of it before it gets settled. Take a few doses of Dr. Wood's Norway Pine Syrup and see how quickly it will disappear.

This sterling remedy has been on the market for the past 30 years, and stands head and shoulders over all other cough remedies.

Put up in a yellow wrapper; three pine trees the trade mark; price 25c. and 50c. Manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

health, to have a beautiful as well as a convenient kitchen.

Written by Mrs. Geo. J. Dickson, Centre Napan, N. B.

A SEASON FOR SEWING, CLEANING AND GARDENING

In April begins the season when many housekeepers want to spend all their time in each of three different ways: spring sewing, spring cleaning and early gardening. But try to plant a wise adjustment and average up the time. On rainy days, sew. In pleasant weather, clean. Garden a while each fine day. You will find it a rest and a pleasant change, and the accomplishment of work will be gratifying. Above all, allow a liberal margin for outside recreation and mental refreshment.

Fresh vegetables are scarce, so use freely the parsnips and salsify dug from the garden. Try different recipes, that you may get variety. Have the garden plowed, have the lawn rolled, and the perennial beds and chrubberies fixed for summer. Transplant house-started seedlings to the cold-frames. Plant in close rows in the frames flower seeds you wish to hurry. Spade over the asparagus bed before the stalks begin to appear. Take up the board walks. Do any grafting you may have planned.

Kill the first flies and moth-millers. If you can accomplish this, you will save much further trouble. Each month put a strong solution of washing soda, followed by clear hot water, down bathroom pipes. Do the same thing in the kitchen sink. Instead of the washing soda any one of the chemical anatiseptic solutions may be used advantageously. See that the garbage can is in perfect condition before hot weather sets in. If you do not find it strong enough to last through the season, discard it and get another.

The entire contents of each clothes closet should have a day's sojourn on the line in the open, blowing air on a sunny day. Pack them away in a garment bags that come for the purpose. In city homes, all winter garments should be first sent to the cleaners for thorough pressing. Garments thoroughly aired, brushed, and put away early in the spring are seldom injured by moths. Air and put away the remainder of the winter blankets and puffs, slecting a clear, windy day. Put up the screens; they will help to keep out the first flies, saving much trouble later.

The time has gone long since when mother "did all her own sewing." The increasing excellence of the ready-made garment and the real financial gain in many cases make it a serious question if many garments should be made at home. Most mothers, however, find the make-overs are still imperative and demand personal attention. Plan a dress parade; note the garments to be lengthened or repaired, or to be made over. Note any new garments and material that must be purchased before hot weather.

This is an ideal month to inspect kitchen and pantry equipment. Fill in the tableware and utensils that have been depleted by breakage. Weed out much-worn and out-of-order utensils. Now is the time to have the kitchen walls painted and the ceiling whitened. You can even do the painting yourself. Take this season to install some little improvement or new idea you have had in mind but have not taken time to accomplish. Glass containers are ideal for holding pantry supplies. Make the shelves shipshape and trim in their new dress.

Install an incinerator in some corner far away from trees. It may be home-made, using one and one-half yards of wire, square-mesh wire. Lap over and twist the cut ends of the wire to form a varrel-shaped container. Use a square of the same mesh and hinge it on for a cover. Fasten to the ground with a couple of bent wires. Empty the contents of scrap-baskets, and surplus paper not good enough to keep, each week, and set afire. The debris will burn rapidly with no danger of setting anything afire. Never let burnable rubbish pile up in your cellar.

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WOMEN'S INSTITUTE DIVISION

Marc 29, 1919.

Dear Members:—

A Short Course in Cookery, Home Nursing, Dress-making and Millinery is to be held in the Agricultural School, Sussex, April 29-May 9, 1919.

Expert teachers have been engaged by the Department to give practicable instruction in these subjects.

All railway fares will be returned, providing vouchers for same are sent to the Supervisor of Women's Institutes, Fredericton, N. B., immediately upon completion of the Course.

A five dollar prize will be awarded in each class for highest total of credit marks in practice and written tests.

In Cookery Classes each student will need to bring two large aprons and a goodly suply of hand towels.

In the sewing class materials to be made may be brought by students or purchased in the town where the Course is held.

In the Millinery Classes the teacher will have new shapes on hand for sale and wil ladvise students concerning materials to be used for making and trimming hats. In both Sewing and Millinery classes, students will need to have sewing aprons and work bags containing scissors, thimble, thread, measuring tape, etc.

In all other classes students will need to bring note books and pencils in order to make additional notes to those suplied by the teachers.

Applications may be made for all classes (this we strongly advise if possible) but students are at liberty to make a choice of classes, providing such choice is specified in application.

This is a big opportunity open to you. Take advantage of it and **apply at once.** Applications will be acepted in the order received.

Yours sincerely.
HAZEL McCAIN,
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cornful of small things.

The war has made the penny popular—so popular that 3,000,000 new ennies are made every day to meet ne deman—and one of our mints has ben directed to turn out nothing but ennies. So if we only save one here nd one there, or several on a morng's marketing, the aggregrate will otal a surprising sum in the course f a year.

All these points may not apply to ou, but if one of them does, you will e well repaid for your time of readng, clipipn gthis article, and pasting r pinning it where it will serve as a requent reminder.

Have a reliable pair of scales in our own kitchen. Weigh or measure roceries which are delivered to you, nd if there are any shortages, imediately notify the firm which is at ault. Compare weights and measres with the grocery slips and see hat these and the price are right. Mistakes are bound to occur. See hat the pointer stands at zero when he weighing process is begun and hat it has come to an unaided rest vhen the weight is taken.

When you buy anything by the dozn, see that the count is forrect—oranges, bananas, eggs or cookies. See that the number is correct and he quality reasonably uniform.

When you buy of an unknown huckter or peddler, observe his license number so that, if you have been short-weighted, you can notify the Bureau of Weights and Measures and prevent other housewives from being taken advantage of similarly.

To buy from a merchant with dented measures is to lose part of what you pay for. Inform yourself as to he law concerning the selling of iquid-measure and dry-measure commodities, also whether the law requires that the capacity of the measure be plainly marked upon it.

Don't chat with the merchant or clerk while he is weighing or measuring your purchases, as this is likely to cause him to make an error. Scrutnize carefully the quality of articles advertised at unusually cheap prices. There may be perfectly good reason why the merchant can sell good goods and good measure for a low price, but be sure that the bargain is real and not merely seeming.

It is poor business to ask for ten cents' worth or twenty-five cents' worth of any supply ,or to accept unquestioningly a package, glass, jar, or basket. Know exactly what you are buying according to standard weight or measure, so that you can compare the price per pound in the glass or jar with the price per pound bought in other ways.

When you buy butter, lard, or anything commonly put into wooden containers, see that the purchase is weighed with paper under it only. Wooden dishes weigh from one to three ounces, and should not be paid for at creamery butter prices.

Do your marketing or shopping in ample time so that you can make your selections wisely and not be forced into buying high-priced articles lacking nourishment, because there is not time to prepare the ones whcih require slow cooking.

Insist that all trimmings of meat for which you pay are sent home to you. These can be used in the soup kettle or tried out if fat, or used as food for the family dog.

If you are buying a piece of meat, such as a leg of mutton, part of which projects beyond the pan of the spring-scale, the butcher should not hold on to the projecting part, as pressure adds weight.

If your bureau of Weight and Measures has any printed literature for your guidance, obtain and study it so that you may know what your rights are.

An awkwardly placed scale pin is liable to bring the pressure upon the "runner" if it is a hanging spring-scale See that the pan is properly placed.

Learn to read both spring and computing scales.

It is impossible many times for a butcher to cut exactly two or three pounds. Require that you shall know the weight as well as the price.

Learn to read your own gas and electric meters and accompany the representative of the Company when he comes to read them. Sometimes inefficient help is employed.

Watch bills carefully upon which there is an extra percentage charged after a certain date, or upon which there is a discount or rebate previous to a set date so that full advantage may be taken of such savings.

Learn to gage the family wants accurately so as not to overbuy. Most families are xeceedingly liberal providers. There is real art in having enough, but not too much.

BLACKING A STOVE

In blacking a stove there are various simple additions which improve the result.

1. Use turpentine, and a little sugar, to mix ordinary blacking. It prevents rust and makes the polish more durable and glossy.
2. Mix the polish with soapsuds; or shave good hard soap into the polish and boil them together.
3. Mix the polish with vinegar and just a little sugar.
4. After blacking a stove, apply linseed oil with a woolen rag, and keep a slow fire until it dries It prevents rust and gives a lasting varnish.
5. Mix the blacking with cold coffee instead of water.

When blankets are stored away, cut up some good yellow soap and lay the pieces among the fold; this will keep moths away.

After paring onions, to remove the smell from the hands burn a piece of coarse brown paper on the hearth, hold the hands in the smoke, and the smell will quickly disappear.

"Oh, You Do Look So Strong and Well"

"AND why shouldn't I ?"

"You always wrote about how well you were, but we never thought you would be so hearty-looking as you are after all the hardships of camp and trench life."

"Oh, we had our share of hardships, all right, but except on rare occasions we hed plenty of good, wholesome food and lots of fresh air and exercise. That is what makes a person strong and well. But I don't think I have it much over you. What have you been doing to look so hearty ?"

"Didn't I tell you I was using Dr. Chase's Nerve Food ?"

"You don't mean to say that has made such a difference. You were so thin and pale when I went away."

"Yes, it certainly has, and after you went away I had a regular break-down, and was in a bad state for some months. I had nervous headaches, could not sleep, and grew down-hearted and discouraged. Mother got after me to try the Nerve Food, and I am so glad I did, for I did want to be well to welcome you home."

"It is a joy to me to find you so well. And now that we have such a good start surely we can keep well and enjoy life. My experience overseas has caused me to place a greater value on life and health than I ever did before, and your experience with Dr. Chase's Nerve Food convinces me that you women folks need not be pale and weak and nervous if you will but use it when you feel tired out and run down."

Dr. Chase's Nerve Food, 50c a box, 6 for $2.75, all dealers, or Edmanson, Bates & Co., Ltd., Toronto. Every box of the genuine bears the portrait and signature of A. W. Chase, M.D., the famous Receipt Book author.

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Spring hill, N. S. WM. DANIELS.

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Albert Co, N. S. GEO. TINGLEY.

SOIL MANAGEMENT INVESTAGATIONS IN A YOUNG APPLE ORCHARD

(Continued from page 767)

by means of soil thermographs. As the soil temperature is largely a reflection of the air temperatures, the extent to which soil temperature can be controlled by cultural practices is quite limited. The data do not support the opinion that rain is of importance in warming the soil. There is no indication that the single factor of soil moisture had an influential bearing upon the temperature existing under the different systems of soil management. She temperature range varies inversely with the amount of mulch covering the soil. The role of soil temperature within the limits of ordinary cultural practice appears to be a neutral factor in tree growth in Indiana.

From a study of the chemical changes induced in the Laurel soil by cultural practices during the period 1910 to 19.5, it appears that clean cultivation tends to deplete the soil of its organic matter, despite the fact that a cover crop is being turned under each year. The straw mulch plot has increased slightly in organic matter, while the sod plots have, as a whole, come nearer to holding their own in volatile matter, humus and nitrogen, than the clean culture cover crop plots. There is no apparent correlation between the previously mentioned chemical factors and tree growth.

A study of the average bacterial population shows that the are, in most cases, more bacteria present in the sod ground at Laurel than in the clean culture cover crop plots; that the variations in mulch on the sod plots have some influence on bacterial numbers; that tree growth and soil moisture cannot be correlated with bacterial numbers.

Tests show that ammonification varies with the season. Differences between plots are not consistent with seasonal climatic variations, and it is impossible to say that cultural practice has affected the ammonifying power of this soil. Tests show that nitrification varies with the season, but that a growing crop of grass or rye lowers the nitrate content of the soil; that the most nitrates are found unde rthe clean culture cover crop system, the straw mulch ranking second in amount of nitrates; that the girth gains of the trees are roughly proportional to the nitrate content of the soil; that there is no relation between the nitrifying power of the soil and either cultural practice or tree growth; however, the ratio between the nitrates present in the field and the nitrifying powr of the soil does bear a relation to tree growth. —H. A. Noyes and Joseph Oskamp in Purdue University Agricultural Experiment Station Bulletin.

AMOUNT OF WATER COW NEEDS

What effect has the amount of water a cow drinks on the percentage of butterfat in the milk she produces? —E. B.

Reply. — Experiments have proved that the quantity of water drunk by dairy cow shas nothing to do with the composition of the milk. When the cows are permitted to have an abundance of water, there is a very noticeable increase in the amount of milk given, and consequently in the amount of butterfa, but the butterfat test of the milk is not affected.

It can be said that water is the most importan part of the dairy cow's ration. Without it, other food would be valueless. Its usefulness is twofold, being absolutely necessary for both maintenance of the body and the secretion of milk. Water is needed in the making of blood, and also the various glandular secretions of the body, particularly those that assist in digestion.

The digestive tract must be flushed, and water accomplishes this purpose. It also serves as a medium by which the waste matter and poisons of the system can be expelled and the nutrients from digested food carried to different parts of the body. It aids directly in digestion, in that it permits the maintenance of sufficient moisture in the stomach so that the food can be dissolved, more easily digested, and more readily assimilated.

The cow seems to have the ability to draw her body moisture for these purposes, but if water is witheld from her for any length of time and she has none to replace what has been used, it is inevitable that she become incapable of digestion, and that she rapidly become poor in co dition.

The amount of water a cow shou have depends entirely on her ne This is best determined by the co hrself. whether she gets her wa from her individual drinking cup from a common drinking trough.

Cows consuming great amounts feed, particularly of high protein co tent, wil drink more water than tho on light feed or good pasture. Co fed succulent feeds will not drink much wate ras those getting only d feed. There is a perfectly natu tendency to drink water in an effo to make feed more palatable and

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32-B

provide the succulence that dry feed lacks.

Water, like feed nutrients, is utilized up to a certain point in maintenance of the body. Beyond that point it takes a very important place in the ration as a direct aid to digestion. Cows on full flow of milk must have an abundance of water at frequent intervals or they cannot maintain production. In experimental work it has been found both the amount of water and the frequency of giving it made considerable difference in the milk flow. In one experiment it was found that whei the cow was supplied with only one-half of the amount of water she would ordinarily drink, there was a daily decrease in the amount of milk of about one-fourth. Toward the end of the 30-day experimental period the decrease was more nticeable. It is statd that if the cow had been continued on this one-half ration of water she would, undoubtedly, have gradually decreased in milk flow until entirely dry.

During cold weather it is absolutely essential that some means be provided for heating the water so that the cows may not be forced to drink ice water. When cows drink water at a low temperature, particularly when they gorge themselves after being forced to do without for a length of time, the temperature of the body is lowered during a greater part of the period of digestion. Therefore, as can be seen, the normal functions of the body are impaired when cows are forced to drink water at too low a temperature. Only when cows have contiuous access to water in the barn as provided by water basins is it unnecessary to heat it during cold weather.

SHORTHORNS FOR CROSS-BREEDING

The value of the Shorthorn for crossing on other breeds is well-known, and a large proportion of prize-winning steers in the selections for grades and crosses at our leading shows, carry Shorthorn blood in their veins.

Crossing the Hereford and Shorthorn has produced some of the most noted herds in the Panhandle country of Texas. (See "Shorthorn Cattle", by Sanders).

Perhaps the most noted cross is that of the Shorthorn with the black polled cattle of Scotland, the result being the so-called "prime Scots", which have been favorites for a great many years with both farmers and butchers in Great Britain. This cross has a growthiness and readiness to fatten which pleases the cattle feeder and swells his bank account. No other breed has proven equal to the Shorthorn for crossing with the Angus and Galloway.

Unfortunately for the Shorthorn, it does not stamp its colour upon its progeny when crossed with other breeds to the extent that the Hereford, Aberdeen-Angus, and Galloway impress their colour. In this way the Shorthorn loses a great deal of the credit which is its due, when crossbreds are upon exhibition. For example, at the 1918 International Exhibition in Chicago, the Grand Champion carload were advertised as Hereford, because they had the Hereford colour, but they carried a strong infusion of Shorthorn blood, which was a decided advantage to them in winning premier honours. Also, the group of three steers winning first in the grade and crossbred specials, were black and hornless, but their sire was a Shorthorn bull, and they owed much of their excellence to this fact.

Though he is not a good advertiser from the standpoint of transmitting his colour, the Shorthorn bull transmits the excellent qualities of the breed to a marked degree, and effects improvement wherever he is used.

Canadian Candy and Chocolate

IN recent years, it has been demonstrated to the world that in most lines of manufacture the Canadian product is equal to, and in many, superior to foreign-made goods.

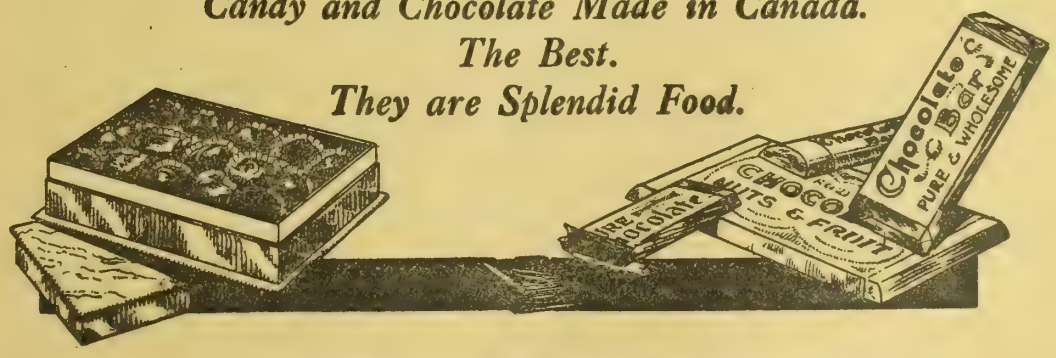
In the manufacture of candy and chocolate, Canada is at the top. The Pure Food Laws guarantee a wholesome product, while skill in manufacture has produced a quality and deliciousness unequalled in any country.

Within the last few months a tremendous demand for Canadian candy and chocolate has grown up in England and Europe. The large supplies sent to our men overseas during the war gave to many Europeans their first opportunity of appreciating the high qualities which the Canadian product possesses. European merchants and candy lovers are now clamoring for Canadian candies.

There may be some Canadians who do not realize that the most wholesome and delicious candy and chocolate are made here at home—but this is true.

You can eat Canadian-made candy and chocolate with assurance of their high quality and wholesomeness.

Candy and Chocolate Made in Canada.
The Best.
They are Splendid Food.



THE CONFECTIONERY AND CHOCOLATE INDUSTRIES OF CANADA

35

HINTS FOR MOTORISTS

by ALBERT L. CLOUGH — Editor Motor Service Bureau Review of Reviews...

HOW THE ELECTRIC GENRATOR WORKS

Following is a brief explanation of how the eelctrical generator produces its current and how this current is regulated to a nearly constant value, despite variations in engine speed. The generator is merely a small dynamo, with a wire wound, rotating part (the armature), having a cummutator at one end upon which bear two brushes that collect the current generated. Encricling the armature is a stationary, wire wound, soft iron frame, the inward projections of which (the pole pieces) are located very close to the armature. When this field frame is magnetized and the armature is rotated, current is generated in the latter. It is magnetized by current passing through the wire coils about it, which current is derived from the armature. The principal magnetizing coil is the fine wire shuntcoil, from one main brush to the other around the field frame. The faster the engine turns the armature, the more current passes through this and the more this current is increased the stronger becomes the field magnetism and the electrical pressure (voltage) suplied by the generator. If this shunt coil only were allowed to act uninterruptedly, the current sent to the battery would increase with engine speed, so that in very fast driving, the charging current would become so great as to prove destructive to the battery and possibly to burn out the lights anad perhaps the generator itself. The situation is that the current supplied by the generator increases not only with increasing engine speed, but also with increasing magnetism, itself due to higher speed with these undesirable results, which must be checked. Since it is hardly practicable to keep the generaor speed constant, it is necessary to diminish the magnetizing effect of the shunt coil very greatly as speed increases and this is done by arranging that the shunt coil shall act, at full power, a less part of the time as the speed increases. To effect this, a magnetic relay, under control of the current sent to the battery, is arranged to introduce into the shunt field circuit a resistance, wherever the battery current becomes excessive, thus weakening the magnetism and to withdraw this resistance when the charging current becomes too small. The higher the speed, the more of the time the magnetism is kept weak and th current is thus kept substantially constant This is only one of the ways of regulating generator output. Others will be referred to later.

RUNNING STARTER AND LIGHTS WITHOUT GENERATOR

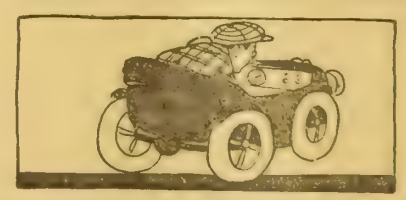
L. writes: The electric generator on my car they tell me must be sent to the factory for rewinding and the job will require several weeks. Please advise me if it is possible to keep the starter and lights working from the battery, while the generator is out of service.

Answer: Yes. You can have the battery charged from an external source of current at night or whenever the car is not in use or the battery may be removed and left at a charging station, when a test of the electrolyte indicates that it is nearing discharge, and the charging station will furnish you a fully charged battery to put in its place, for the use of which a moderate rental will be asked. By thus changing batteries you will be able to get along very comfortably, especially if you use the starter and lights rather moderately. By cranking the car by hand, relying upon the battery for lights and igni, tion only, a single battery charge will lats you quite a long time. If you charge your battery yourself, you will need a rectifier—a piece of apparatus which every motorist may well own.

NO OIL PRESSURE IS INDICATED

J. P. S.: A few mornings ago, when starting out with my car, I noticed that the hand of the oil pressure gauge would not move, no matter how much the engine was speeded up. This made me afraid to use the car and I put it back in the garage and have not used it since. Please tell me as soon as possible, what the trouble is, as I live far from any garage.

Answer: .You were wise to discon-



tinue using your car, as you might otherwise have seriously injured your engine. We do not know the construction of your engine's lubrication system, but the trouble may be lack of oil (although the gauge may be deranged and indicates "full"); the cloggging with dirt of the oil strainer, so that the pump cannot fill or its obstruction by ice formed from water accidently present in the oil; the failure of the oil pump to act, due to its having frozen anad broken or from some other cauase; the disconnection of the oil pipe between the gauge and the crank case deilveries.

PNEUMATIC TIRES ON HEAVY TRUCKS

Until quite recently it has generally been assumed that the heavy commercial car must necessarily be equipped with solid rubber tires, but recent advances in the tire art have led to the production of pneumatics of enormous size, adequate to support the weight of large capacity trucks and it appears that these tires are capable of giving economic results favorable enough to challenge the supremacy of the solid tire in certain branches of the trucking field at least. The more resilient the tire, the higher the permissible speed for a truck may be and the higher its speed the more paying work may be gotten out of it. These giant pneumatics of cord construction are highly resilient in comparison with solid tires, allow of greatly increased truck speeds without causing vibration detrimental to the mechanism or its load and carry their loads with very moderate heating, which means the fuel consumption is reduced by their use. War-time transportation conditions have given a pronounced impetus to long haul, intercity motor trucking, in which speed is an important consideration, and this has brought into prominence these giant pneumatics up to nine inches in diameter. Under conditions where high speed is a desideratum as in the transportation of valuable, perishablo freight or rush orders of any kind of merchandise there is reas on believe that the pneumatic truck will become a regular feature in the modern system of transportation.

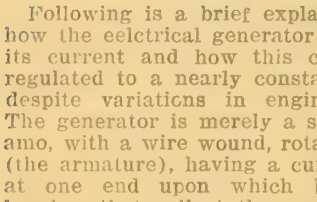
Make Your Ford Ride Like a Limousine

YOU cannot put any accessory on your Ford car that will add more to your pleasure and convenience in riding, or save more wear and tear on the car itself, than a set of

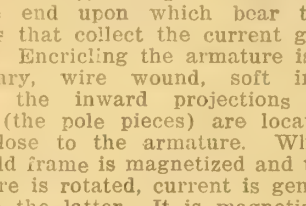
H&D AITCHANDEE SHOCK ABSORBERS

"Make Rough Roads Smooth"

This is the original cantilever-principle type, protected by Canadian Patent 172892—the logical shock-absorber for Ford cars. Easy to attach. No holes to bore. Weight per set, 20 lbs.



Single Arm Type, Set of Four **$10**



Twin Arm Type, Set of Four **$12**

These will save your springs; lengthen the life of your tires; increase your comfort in riding and earn their cost in a season. Over 200,000 in use to-day. Remit by Money Order or Postal Note. Use them for 30 days, then if not satisfied with your purchase, send them back and we'll refund your money.

Richards-Wilcox Canadian Co.
308 Chelsea Green Limited
LONDON - - - ONTARIO
(1)

MALTESE CROSS TIRES

We don't like to call a tire "tough" but it is the only word which explains the fact that it takes so much mileage to wear out a Paragon Tread Tire. Toughness in tires is a virtue which is manifested to a marked degree in the Maltese Cross Brands.

Maltese Cross Paragon Tread

PARAGON TREAD

The Paragon Tread, black with grey side-walls, has a neat, well-finished and substantial look, which adds something desirable to the appearance of any car.

GUTTA PERCHA & RUBBER, Limited
Head Offices and Factory, TORONTO.

BRANCHES:—Halifax, Montreal, Ottawa, Toronto, Ft. William, Winnipeg, Regina, Saskatoon, Lethbridge, Calgary, Edmonton, Vancouver, Victoria.

TOO HIGH VOLTAGE SYSTEM

L. A. D. writes: The lights on my car are altogether too bright and they burn out so soon that it puts me to considerable expense. Other users of similar cars seem not to have this trouble. Can you tell me what is wrong?

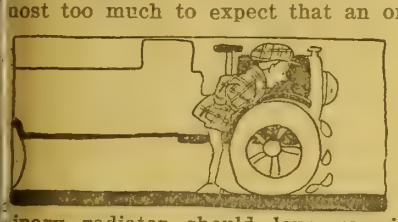
Answer: Assuming that you are using lamps of the voltage specified by the makers of your car, the most likely explanation is that your system is constantly at too high electrical

pressure, due to the habitual overcharging of the battery which, in turn, is attributable to the charging rate of your generator being higher than the circumstances warrant. If your battery is constantly gassing, when charging is going on, becomes very hot after long runs and requires lots of water to keep the cells full, this probably is the correct explanation and we advise you to take your car to the station and have the generator's charging rate lowered.

TRUCK RADIATOR WON'T STAY TIGHT

B. & J. writes: We are operating a Ford delivery, which was built from a passenger car engine and a truck converting unit and have constant trouble with radiators, which develop leaks soon after they are put on. Can you think of anything that will prevent this

Answer: We wonder if your are using pneumatic or solid tires on the front wheels. If the latter, it is almost too much to expect that an or-

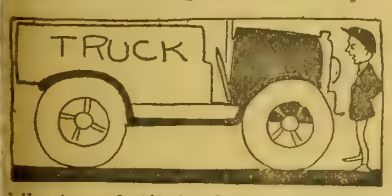


dinary radiator should long remain tight, under the severe jarring necessarily occcurring. Leather shims, between the bottom of the radiator and its support, may be of some value in mitigating the stresses that result in producing leaks and a suitable adjust ment of the stay-rod from the radiator top to the dash is of importance. We think that you can obtain a truck type of radiator, of more rugged construction, which will fit in place of the standard type.

IMPULSE MAGNETO

The B. L. Co writes: We have a truck the engine of which is very hard to start as it has large cylinders and a magneto only for ignition. Moreover it is kept out of doors nearly all the time. It is more than an ordinary man can do to spin the engine, at starting, fast enough to get a good spark. Have you any suggestions?

Answer: It might be worth your



while to substitute for your present magneto, a so-called impulse magneto. In this type a full powered spark is produced, at the correct instant, no matter how slowly the engine is cranked—the actual movement of generating the current being produced by the sudden release of a spring, which has been compressed by the cranking action. Almost any dealer, who is conversant with magnetos, can obtain one of these for you.

Lubrication Very Important

Are you giving your Automobile, Stationary Engine, Tractor and other farm machines the proper lubrication attention? All of these must be correctly lubricated if they are to give you the kind and length of service that they should give.

Imperial Farm Lubricants are well known to Canadian farmers. If you are using an Imperial Oil brand, you cannot find a better lubricant—but it is possible that the way you use Imperial Lubricants can be improved. Note recommendations below. We have the right lubricant for each purpose and it is only by using the right one that results may be secured.

HANDY SIZES

Imperial Lubricants are supplied in one half, one and four gallon sealed cans; half barrels and barrels. There is a stock of Imperial Lubricants conveniently near you.

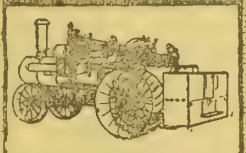
IMPERIAL OIL SERVICE

If you need advice on lubrication ask the *Imperial Oil man.* He knows the subject from every standpoint—knows the right oil for each farm machine. Exceptionally difficult problems will be referred to Imperial Engineers, without charge.

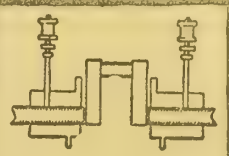
A Correct Lubricant for every Farm Machine

For Gasoline Engines, Tractor, Auto or Stationary
POLARINE OIL
STANDARD GAS ENGINE OIL
For Kerosene Engines Tractor or Stationary
POLARINE OIL HEAVY
POLARINE OIL A
IMPERIAL KEROSENE TRACTOR OIL
IMPERIAL KEROSENE TRACTOR OIL EXTRA HEAVY
(Recommended by many tractor manufacturers)

For Open Bearings of Farm Machinery
PRAIRIE HARVESTER OIL
—very heavy body, resists cold, won't thin out with moisture
ELDORADO CASTOR OIL
—a thick oil for worn and loose bearings



For Steam Cylinder Lubrication, whether Tractor or Stationary Type.
CAPITOL CYLINDER OIL
—the standard product for steam cylinder lubrication



THRESHER HARD OIL
For Grease Cup Lubrication of Bearings, a clean solidified oil high melting point.

IMPERIAL OIL LIMITED
Power - Heat - Light - Lubrication
Branches in all Cities

EXAMINING FROZEN ENGINE FOR DAMAGE

J. writes: During a recent cold spell, my engine sustained a bad "freeze up" and I haven't used it since. I know that the radiator has burst in several places. How can I tell whether the cylinders were injured?

Answer: We assume that your engine has already been fully thawed out and that the radiator has been re-

paired so that it holds water. If you fill the cooling system as usual and water escapes through the cylinder jacket walls, this is likely to be through cracks produced by freeezing which cracks can be closed by welding. In case, however, water is found in the crank case oil, after the engine has stood for some time, or if air can be heard bubbling through the jackets, when the engine is hand-cranked, it may indicate that there is a crack in a cylinder wall, which is a pretty serious matter. A crack in the combustion space walls in the head, will have the same effect and so will a leaky head gasket. If you close the water outlet from the cylinders and apply hydrant water pressure to the water inlet, you will soon ascertain whether anything has been burst, by watching for the external leaks and escapes of water into the crank case. The leak, if any, may be in the head casting for the block or there may be leaks in both.

REPAIRING A SCORED CYLINDER

W. S. asks: If a cylinder has been scored, so that a piston cannot be fitted tghtly in it, is there any possible remedy except reboring it and the rest of the cylinders?

Answer: There are several processes in use in repairing "scores" without enlarging the cylinder bore, which depend upon replacing the metal that has been worn away by means of alloy electrically welded in place or deposited electrolytically. After this is done, the repaired portion is ground true with the rest of the bore. If a cylinder is all right, with the exception of a definite score, such as made by a displaced wrist pin, such a repair as this, if successful, permits the use of the old piston and obviates the necessity of doing anything to the rest of the cylinders.

FORD STARTER FOR OLD MODELS

J. H. M.: I own a 1916 Ford and am anxious to know whether the electric starter that is being furnished for the 1919's can be obtained for attachment to my car. Can you tell me as to this?

Answer: We understand that this will depend on whether the output of these starting and lighting outfits can be made more than sufficient to take care of the new cars which are being put out. If it can; we are informed that the surplus will be available for installation on cars of older models.

GIVING THE FUEL SYSTEM "THE ONCE OVER"

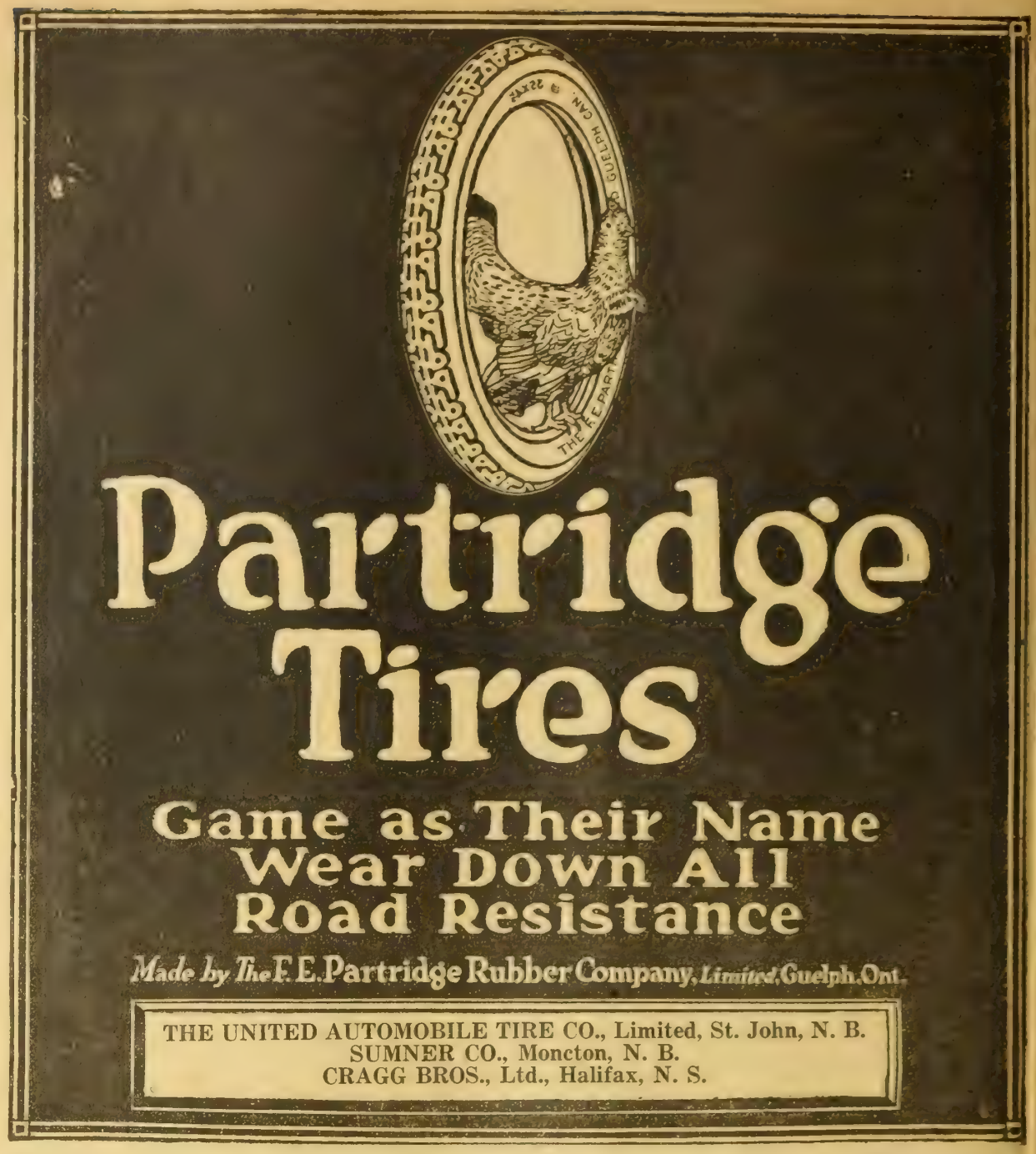
The principal requirements for the successful action of the fuel system are that it shall be kept tight and free from obstructions and foreign matter. Assuming a rear tank vacuum feed system, the following suggestions are offered. Draw off liquid from the rear tank settling-pocket into a glass bottle and see if any water or sediment is present, rocking the car meanwhile. Keep drawing off samples until only perfectly clean gasolin comes out. See that the gasoline pipe connection is perfectly tight, that the gauge operates freely and correctly and that the filler cap makes a perfect seat that its vent hole is unobstructed. If possible, follow the gasoline pipe along to the vacuum tank, making sure that it is securely clipped in place. Uncouple the feed pipe of the vacuum tank and clean the strainer, which is usually found there, replacing the union with care. Collect a little gasoline in a bottle from the draw-off at the bottom of the vacuum tank and, if it is not perfectly clean, collect samples until you secure a perfectly pure one. See that the gasoline connection at the bottom of the tank is perfectly tight. If the pipe is wet it probably leaks and ordinary soap on the union faces will tend to make it tight Try the unions on the suction pipe from the tank to the manifold, to make sure they do not leak. With the gasoline turned on, wipe the bottom of the carburetor clean and inspect it again after an hour or so . If it is wet, the float valve leaks or the fuel level is above the spraying outlet and adjustment or replacements parts is required. If there is a screen at the point of entrance of fuel to the carbuetor, clean it and, in replacing the union connection, wipe it clean and see that it does not later become wet. In case there is a draw-off at the bottom of the carburetor bowl, open it and allow gasoline to flush through it until it comes perfectly clean. Also try the bolts that hold the carbuetor flange to the flanged intake opening, to insure that they are tight enough to prevent any air leak.

GAS CONSUMPTION INQUIRY

S. writes: Drivers of Ford cars often tell me that they get from 18 to 24 miles on a gallon of gasoline and some of these statements I believe are true, but I cannot average better than 12 miles to the gallon in the regular running of my Ford, which I use for delivering milk to my customers. Shouldn't I do better than this?

Answer: You cannot expect very high gasoline mileage because you doubtless idle your engine a good deal and use up considerable fuel in

starting your car at each stopping point. The power expended in acceleration is, of course, lost, when the brakes are applied at the next stopping point, which may be only a short distance away. High fuel economy records are made in cases where long distances are uninterruptedly covered at speed and the mixture is run as lean as possible, with the engine fully heated up. Operators use the dash carbuetor adjustment too little and in most instances a leaner mixture than is customarily used could be successfully employed a good part of the time. Perhaps you can help matters somewhat by attention to this point, but we fear that you are doing nearly as well as you can expect to.


Partridge
Tires
Game as Their Name
Wear Down All
Road Resistance
Made by The F. E. Partridge Rubber Company, Limited, Guelph, Ont.
THE UNITED AUTOMOBILE TIRE CO., Limited, St. John, N. B.
SUMNER CO., Moncton, N. B.
CRAGG BROS., Ltd., Halifax, N. S.

CARE OF THE TOOL EQUIPMENT

A very fair kit of tools is usually furnished with every new car that is bought, but in too many cases these tools are soon lost or broken and, when an emergency arises, the very one that is essential is found to be missing. When tools are used upon the road, it is very easy to leave them on the ground or upon the running boards or fenders and, in the hurry of the moment, to drive away and leave them or to scatter them along the highway. It is best to take an account of stock each time that the equipment is used in this way. Many tools are bent or broken by using them in prying or pounding operations, for which they were not intended, such as in changing tires. A hammer is provided for hammering and it is better adapted for this purpose than is a wrench or the pliers. Small weak screwdrivers and hardened tools such as punches and files, will not serve well as levers. tI is very easy to ruin a small monkey wrench or Stillson by using it on heavy work, when one is horried and nervous and it only takes a few seconds to get a suitable tool. Small tools should never be left where they can fall into an open housing. They fall in easily and some times it is almost impossible to extricate them from such places, where their presence may cause extensive damage. If tools are carelessly allowed to touch electrical connections, it may mean a run down battery.

DANGER OF BATTERY FREEZING

A. G. writes: I have just bought a car and have only an unheated stable to keep it in. Is there any danger of the battery's freezing, in such a place?

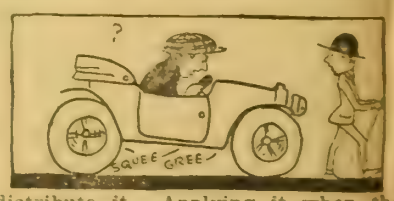
Answer: There is no danger, if you keep your battery fully charged and there is serios danger, if you do not. For information as to the state of charge of your battery you will have to depend upon hydrometer read-

ings of gravity of the solution in each cell, taken fairly often. At full charge, the gravity should be at least 1275 and freezing of such a solution wil lnot take place at any temperature ever reached, indoors, in this country. The electrolyte in an entirely discharged battery will freeze at somewhere about 15 degrees Fahrenheit above zero, a temperature which any unhated garage may reach in sever weather.

CAUSE OF SQUEAKING BRAKES

Q asks: What makes the brakes of my car squeag so horribly when it is being brought to a stop?

Answer: Probably, because the lining material has become glazed over. so that it acts upon the brake drum as a rosined bow does on a violin string. The band linings require a little lubrication, just enough to prevent a perfectly dry contact and to soften the surface of the material somewhat. A little linseed oil, with considerable kerosene mixed with it. is considered good for this purpose It can be sparingly applied to the drums and the wheels then turned by hand, with the brakes set gently, to



distribute it. Applying it when the car is garaged at night is a good idea, as it will be disrtibuted by morning and will not interfere with brake action. In case the linings are so badly worn that the rivets securing them to the bands rub harshly upon the drums, there will most likely be a squeak produced which con only be prevented by countersinking the rivets.

GEAR LUBRICANT INQUIRY

J. A. S. asks: Is it safe to use the various gear box compounds, which are advertised to stop the noise? If not, what is the best thing to use?

Answer: Some of these compounds

may contain ground cork, tar, boxwood sawdust, mica or very impure graphite, which substances, among others, are likely to damage ball bearings seriously. Moreover, if they contain excessive proportion of unstable animal fats, they are likely to corrode the bearing parts. Some of the noise deadening compounds are so sticky that they absorb altogether too much power. Undoubtedly there are many special gear preparations that

are perfectly safe, but there is probably no better lubricant to use in a gear case than a heavy, high grade steam cylinder oil. If found to be too thick, it can be thinned with light oil and in case it proves too thin, high grade grease can be added to it. When gear noise cannot be kept within bounds, by the use of such a lubricant, the gears and gear shafts doubtless require attentoin.

DON'T IGNORE THE INDICATING DEVICES. — DISREGARDING OF DANGER SIGNALS LEADS TO TROUBLE

Watching the road and the traffic upon it is the chief duty of the motor car operator, but it is also of importance that certain things about his car itself should be watched while on the road. These are indicating devices, which are provided as safeguards and while it is not necessary that they be constantly consulted, it is essential that they should be glanced at, at fairly short intervals. The well being of the engine depends absolutely upon the adequacy and constancy with which it is lubricated and the presence of a flow of oil in the oil indicator or the existence of the reuiqred pressure at the oil gauge, should be frequently verified. Any lack of circulation or pressure should infallibly be the sigoal fnr stopping the engine and correcting the trouble before proceeding. When a stop is made, after a long run, the crank case oil-gauge deserves a glance in order to guard against the level becoming low and the gasoline gauge may be well consulted lest the fuel supply become too far depleted. An occasional look at the charging indicator (ammeter) of the electrical system is a wise precaution against exhaustion of the battery. Unless it shows the full normal charging current, in the day time, it is evidence that lights have accidently been switched on, that there is some unusual escape of current or that the generator is not doing its duty. If there is anything unusual about the amount of current indicated at any time, the cause had better be determined and removed. For instance, if no charging current passes, when the car is at speed, the generator may be active but not connected wit hthe battery and may burn itself out as well as let the battery run down. Attention to the radiator thermometer at rather frequent inetrvals is desirable. If it found to run too high this may prove a timely warning of insufficient water in the radiator, insufficient engine oil supply, a broken or detached fan belt or something else which either throws excessive duty upon the cooling system or lessens its capacity for getting rid of surplus heat. Every motorist should realize what abnormal indications of these instruments mean and that the failure to notice and act intelligently upon such indications may result in inconveniena delays upon the road and serious damage to car mechanism. These indicators are important enough to be taken seriously and not to be ignored as many careless drivers too often do.

The Light Six— A GENUINE McLAUGHLIN CAR

McLAUGHLIN MOTOR CARS

The McLaughlin trade mark is a guarantee of efficiency in the mechanism and quality in the material and workmanship. The McLaughlin LIGHT SIX stands up to every test and cuts down the cost of motoring. Many owners of this model get over 30 miles per gallon from gasoline and eight to ten thousand miles on tires is not unusual.

Send for Catalogue

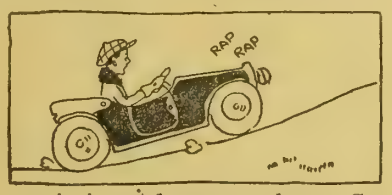
The McLaughlin Motor Car Co., Limited
OSHAWA, ONTARIO

McLAUGHLIN LIGHT SIX TOURING H-6-63

See the McLaughlin models at the nearest McLaughlin Show Rooms

TROUBLE WITH AUTOMATIC SPARK ADVANCE

D. A. G. writes: My engine has a most elusive knock, which sometimes does not "show up" for days at a time and again occurs quite frequently. It generally troubles me when the car is climbing a hard hill on high, but often it will take the same hill perfectly smoothly. It sounds like a knock from too much spark, but my car has an automatic arrangement, which keeps the spark right. The cylinders have been cleaned and



the engin is not loose anywhere. Can you explain this?

Answer: Your statement that your engine has an automatic spark advance, raises the possibility that this may be operating defectively, for it sometimes happens that, during high speed operation, the advance mechanism sets the spark very early and that it fails to return to a suitable retarded position to keep the engine from knocking, when it is doing severe hill climbing, at low speed. Lack of lubricants is sometimes responsible for such a failure and we suggest that you have the mechanism examined to see if there is any likelihhod trat it may occasionally stick in an overadvanced position.

IS THIS BATTERY SHORT-CIRCUITED?

H. W. G. writes: I have had so much trouble from my battery becoming discharged, that I am beginning to think that there is some loss

of current from it, caused by something wrong in the system. How can I find out this?

Answer: With ignition and lighting switches turned off and the starter not in use, no current should be delivered by the battery and there should be no sign of a spark, when the cable connected to the live terminal of the battery is detached therefrom and no indication produced in an ammeter connected to this cable end and battery terminal. The charging indicator should show the proper amperage of "discharge" current, when all lights are burning, with the engine stopped, and the expected value of "charge" current when lights are on and the engine running at speed. If your electrical system stands these tests, there is no abnormal external drain upon your battery, but it is quite likely that it is internally short-circuited.

HINTS THAT WILL HELP

Gather the eggs daily and try to get them in to market twice a week. The life of a fresh egg is three days. One bad egg may lose a valuable customer; send all "doubtful" eggs to your own kitchen. Each day date the eggs laid, so that the age can be guaranteed.

Cut Dairy Costs

THOUSANDS of dairymen are using Empire Milking Machines to cut dairy costs. Many write us they would have to go out of the dairy business if it were not for

EMPIRE MILKING MACHINES

And it's true, too. You have no idea what a saving in time and increase in milk production results from the use of such a highly perfected and universally successful milker as the Empire.

And now, with its Super-Simple Pulsator—the pulsator without a piston—the Empire is placed immeasurably ahead of any other milker on the market. Buy no milker until you see the Empire.

Let us send you the details. Write for catalog No. 26 Or, better yet, let us have our local dealer demonstrate for you. No obligation. Write for his name.

The Empire Cream Separator Co. of Canada, Limited

Montreal Toronto

ROBINSON-ALAMO LIMITED
140 Princess Street - Winnipeg
Distributors for Western Canada

J. CLARK & SON, LIMITED
and
THE LOUNSBURY COMPANY, LTD.
Distributors for the Province of New Brunswick

POTATO GRADING AND ITS RELATION TO MARKET PRICES, TRANSPORTATION AND CONSUMPTION

(Continued from page 759)

advised greater potato consumption. The best way to increase consumption is by putting a better graded potato on the market. We must eliminate waste. When we sell a grocer or a consumer a hundred pounds or a peck of potatoes, they should be 100% marketable. We must show the consumer that we have a good article for sale, an article of food which will show very little waste. When a customer buys a hundred pounds of flour he buys practically no waste. When he buys a barrel of No. 1 Ontario apples he buys practically no waste. When he buys a barrel of New Brunswick potatoes he gets all the way from 10 to 25% waste. This is not conducive to greater consumption, and if we expect to enlarge the potato industry of New Brunswick, we must get at in a practical way and eliminate waste to the consumer who puts up the money. We must grade our potatoes and make them 100% merchantable. Thirty years ago the apple growers in Ontario shipped their apples in box cars in bulk, and shovelled them up with forks and shovels. The usual price was $1.00 per barrel at shipping point. A certain farmer in Ontario conceived the idea that he could get a better price by grading his apples and packing them properly. The Ontrio farmers today grade and pack their apples according to quality and size. They are sold at No. 1's, 2's and 3's and bring almost three times the price they did when sold in bulk. We are today in the same position as the Ontario apple grower was thirty years ago. The waste every year from not having a standard of quality, and grading regulations is criminal. Our potato crop is not bringing more than 50% of its real value. Neither are we getting more than 50% of the consumption we should have, simply because we have no standard of quality and no compulsory grading regulations. If we had compulsory grading regulations and a standrd of quality to live up to, backed up by organized control, either Government or Association, it would be but a short time before 85% of our entire crop would be grade No. 1. The farmers would recognize that bruised and small potatoes would not sell to advantage and would take more car in handling their crop. Each farmer would do his best to market his crop under No. 1 classification, and in a short time New Brunswick potatoes would be known in the markets of the world as No. 1 Graded Stock. If compulsory grading was carried out and a standard of quality fixed, so as to hold the confidence of the buyer and consumer, we would increase our consumption I believe, 50%. This would be a great stimulent to the industry. The crop would bring hundreds of thousands of dollars more every year to the farmers of this Province. The value of New Brunswick farms would increase. We would get less competition from other potato growing Provinces. The potato would soon be the most important crop of the Province and New Brunswick wuld soon grow in prominence on the map of North America.

We must grade and stock our potatoes to a uniform standard of quality, so that we will have the best to offer on any market that requires our goods. With the transportation facilities soon becoming normal again, we could be working into new markets for our potatoes. It would be a sad day for New Brunswick to ship the ordinary run of potatoes to a new market and have the importers pass judgment on our quality and grading as it stands today.

Something must be done, and at once, if we are to hold the high place in the potato industry of Canada, that New Brunswick deserves, and I strongly recommend the establishment of standard Grading Regulations, similar to the Grading Regulations now in use in the United States and that these Grading Regulations be made compulsory by Federal Legislation. I also recommend that an Inspection Service be put into effect similar to the one now used in the United States that an Certificate of Inspection be furnished to all shippers when requested, and that this Certificate be receivable in all Courts of Canada and the United States as prima facie evidence of the truth of the statements contained therein. You would then be able to sell potatoes as you now sell wheat and apples and furnish a certificate of inspection, to convince the buyer that he is getting what he is paying his good money for. Such a system, I believe, could be worked out easily, and would be of great advantage in holding the confidence of the buyers of New Brunswick potatoes in all markets.

"HOMESTEAD LIQUID RED"
FOR BARN AND SILO

These are the most valuable buildings on the farm. Think what it would cost to replace them!

It's cheaper to paint than to repair—and "HOMESTEAD LIQUID RED" will protect the farm buildings against the ravages of climate and weather.

Give the buildings a coat or two of this reliable paint—rich in color, permanent and durable—because of the high-grade oils and pigments used, and the thorough grinding of ingredients in the oils.

Our book, "What, When and How To Paint" tells all about CANADA PAINT for the house—SANITONE for walls—and "SUN" VARNISH STAINS for floors, furniture, etc. Write for a copy.

THE CANADA PAINT CO., LIMITED,
Makers of the famous "ELEPHANT BRAND" White Lead.
572 William St., Montreal. 112 Sutherland Ave., Winnipeg.
12

STANDARDIZATION OF FARM MACHINERY

(Continued from page 758)

the farmers believe that the particular machine they sell is better than that of any other make.

While the present agitation is only for standardization of machines and the elimination of unnecessary machines, that imitate other makes, together with the repairs (that is the breakable and wearable parts) no doubt in the near future farmres and others will insist on a lessening cost of machinery, wagons, motors, etc., by having one agent seling over a certain teritory for standard makes, not dozens of agents going over the same ground piling up the cost of overhead in the way of hotel, autos and salary.

It used to be said that it cost as much to sell certain machines as it did to manufacture them. Whether this be true or not, now that machinery and implements are costing from 30 to 60% more than in pre-war years every effort must be put forth by those who have to purchase to see that costs are reduced by lessening the selling costs.

Possibly the time has come for making this more general, to include wire fencing, fertilizers and several other lines of goods the farmer is paying too much for, owing to patent rights, agents' salaries, expenses and commissions. A multiplicity of ogents is claiming a lot of hard earned tarmers' money.

In February, 1918, this matter was brought before the Manitoba Agricultural Societies at Winnipeg by J. Lockie Wilson, Sec'y of Agricultural Societies for Ontario, and a resolution was introduced and unanimously carried by the convention asking the Federal Government to take immediate

WAS WEAK
ALL RUN DOWN
FROM HEART and NERVES.

Mrs. Percy G. McLaughlin, Lawrence Station, N.B., writes:—"I am writing to tell you that I have used Milburn's Heart and Nerve Pills, and find since I commenced to use them that I feel altogether a different woman. I was weak and run down from my heart and nerves, and was recommended to try your pills by Mr. James H. Scott who has taken them, and says if it were not for them he could not live. When I finish the box I am now taking I will be completely cured. I wish to thank you for putting up such a wonderful medicine, and I will gladly recommend it to one and all."

To all those who suffer in any way from their heart or nerves, Milburn's Heart and Nerve Pills will come as a great boon. They strengthen and stimulate the weak heart to pump pure, rich, red blood to all parts of the body, strengthen the shattered nerves, and bring a feeling of contentment over the whole body.

Price 50c. a box at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

Use

Old Dutch Cleanser

for quick, thorough and hygienic cleaning in the Dairy and for all general housework in the farm home

steps to havo a Commission meet the Canadian Implement Manufacturers and get together with a view to the standardization of Canadian implements. A similar resolution along these lines will be introduced here and we should like a thorough, not a half-hearted discussion on the matter as it is of more importance to the farmers of Nova Scotia than any other business you have on your order paper.

THE AGRICOLA CENTENNIAL

(Continued from page 751

cieties.
4.—Invites correspondence from farmers.
5.—General synopsis of subjects of discussion.
6.—Climate and conditions influencing agriculture.
7.—Change of climate by cultivation of soil as shown by history.
8.—Changes occurring in our own climate.
9.—Defends the climate of Nova Scotia.
10.—Elements of Agricultural chemistry.
11.—Plant foods.
12.—Soil and vegetables.
13.—Properties of coils.
14.—Formation of soils and a general account of those of the Province.
15.—Continuation of previous letter.
16.—Instruments of tillage.
17.—Ploughs.
18.—Benefits of drill fachinery.
19.—Harrows and roller.
20.—Threshers, reaping machines and other implements.
21.—Fertilizers, natural.
22.—Fermentation of manures.
23.—Best ways of manure conservation.
24.—Nature of composts.
25.—Agricultural uses of peat.
26.—Fossil manures.
27.—Lime as a fertilizer.
28.—Burning of lime.
29.—Lime and vegetation.
30.—Gypsum.
31.—Alkalines and neutral salts.
32.—History of burned clay.
33.—Natural obstructions to farming, rtees, etc.
34.—Inequalities of soil.
35.Stones and rocks.
36.—Principals of drainage.
37.—Agriculture, the individual, society, national wealth.
38.—Discussion of land and capital.

Such were the themes dealt with. The letters fell on fertile soil. The truths set forth were seized and acted upon and Nova Scotia soon began to bread herself—the monies hitherto going to the United States for bread were retained at home and agriculture boomed.

"Agricola," the man of vision, has passed to the great beyond but the good he accomplished lives an and on and this, the centennial of the appearance of his letters ,is a fitting time for the erection of a suitable memorial that will perpetuate his name in the annals of Nova Scotia's hisitory.

1919 SPRAY CALENDAR FOR NEW BRUNSWICK APPLE ORCHARDS

G. E. Sanders, Dominion Entomological Laboratory, Annapolis Royal, Nova Scotia.
A. G. Turney, Provincial Horticulturist, Fredericton, New Brunswick

This Cancels All Previous Recommendations for New Brunswick

First Srpay

Time.—About five days before the blossoms open.

Material. — Poisoned Bordeauax made up of 3 lbs. bluestone, 10 lbs. of either water slaked stone lime or hydrated lime, and 1½ lbs. arsenate of lime to 40 galons of water.

Applicatoin. — Drench thoroughly, spraying in every direction.

Pests destroyed.—Bud Moth, Fruit Worm, Canker Worm, Apple Scab.

Second Spray

Time.—Immediately after the blossoms fall.

Material.—First choice, lime sulphur, 1.006 sp. gr, equal to 1 gal. commercial strength to 50 gal. water or 4/5 of 1 gal. to 40 of water, adding slightly less than ¾ lb. of arsenate of lime and 5 lbs. hydrated lime or water slaked stone lime to 40 gallons.

Second choice, soluble sulphur, 1 lb. arsenate of lime ½ lb. and water slaked or hydrated lime 5 lbs. to 40 gal. water.

Application.—In using lime sulphur for this spray try not to wet the under side of the leaves. Direct the lime sulphur spray downwards. Soluble sulphur may be safely sparyed in all directions.

Pests destroyed. — Coddling Moth, Bud Moth, Apple Scab, Pit, Tussock Moth.

Third Spray

Time.—Two weeks after the blossoms fall.

Material.—Poisoned Bordeaux made up of 3 lbs. bluestone, 10 lbs. hydrated or water slaked stone lime and 1 lb. of arsenate or lime to 40 galons water.

Aplication. — Drench thoroughly, spraying in every direction, as this is the last spray of the season.

Pests destroyed.—Apple Scab, Pit, Tussock Moth.

Fourth Spray

On varieties very susceptible to apple scab, such as McIntosh and Fameuse, the fourth spray is necessary to prevent the late summer infection. The best tim to apply this spray has not been definitely worked out but is probably about the end of July or the beginning of August. Watch the foilage and fruit closely for the first developments of scab and apply this spray accordingly. Use poisoned Bordeaux made up of two lbs. of blue-

(Continued on page 791)

Haying Waits For No Man

TO GUARD against possible loss be prepared to mow, rake, ted and load your crop from hayfield or meadow at the proper moment.

For years you have been cheerfully complying with Government request to save materials by repairing your old machines rather than making replacements. Now that the need for this has passed, would it not be real economy to buy new machines and be assured of uninterrupted service at a time when a break-down would mean serious embarrassment and loss.

Deering and McCormick Mowers, Rakes and Tedders and International Side Delivery Rakes and Loaders

are doing satisfactory work on thousands of farms. The combined side-delivery rake and tedder is a winner. International loaders lift hay 10 feet without injury to blossoms and leaves. Sweep rakes, stackers and combined sweep rakes and stackers clean up big fields in a hurry, making **haying** time **paying** time.

And hand in hand with every haying tool goes service. The local agent is always in close touch with one of our 16 branch houses, whose resources and facilities are at your service.

International Harvester Company of Canada, Limited

BRANCH HOUSES

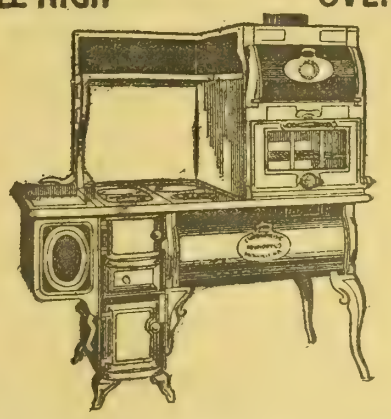
WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

ENTERPRISE

PERFECT

DOUBLE HIGH OVEN RANGE



Happiness in the home is so dependent upon tranquility in the kitchen that it is essential to have the very best range procurable.

The Enterprise Perfect, so convenient and reliable, easy on fuel, and lasting a lifetime, is the ideal stove for the average family. It has *two* ovens for baking and roasting at the same time, with a warming closet as well.

Write for free booklet giving full particulars.

The Enterprise Foundry Company - Sackville, N.B.

Makers of High Grade Stoves, Ranges, Furnaces

SOLD BY LEADING DEALERS EVERYWHERE

PRIZE WINNERS AT CARLETON COUNTY SEED FAIR, FLORENCEVILLE, MARCH 26th, 1919

Wheat, White Fife—1, F. S. Talor; 2, E. L. Hume; 3, Stanley A. Whtie; 4, H. M. Estey; 5, Thos. Stewart; 6, Fred Kilpatrick.

Wheat, Any Other Variety—1, Stanley A. White; 2, James Hamilton; 3, E. A. McCain; 4, Herbert Kilpatrick.

Barley—1, Herbert Kilpatrick 2, E. A. McClain; 3, Otis Shaw; 4, H. M. Estey.

Oats, Ligowa—1, E. L. Hume; 2, H. M. Estey; 3, E. A. McCain; 4, Basil Kilpatrick.

Oats, White, Any Variety—1, Fred Kilpatrick; 2, F. S. Taylor; 3, Thos. Stewart; 4, Stanley A. White; 5, Otis Shaw.

Buckwheat—1, James Hamitlon; 2, Thos. Stewart; 3, F. S. Taylor; 4, E. L. Hume; 5, Fred Kilpatrick; 6, Herbert Kilpatrick; 7, E. A. McCain.

Peas—1, Thos. Stewart.

Beans, Yellow Eye—1, J. Roy McCain; 2, P. R. Semple.

Beans, Any Variety—1, Stanley A. White; 2, Thos. Stewart; 3, W. H. Fowler.

Corn—1, J. Roy McCain; 2, E. L. Hume; 3, P. R. Semple.

Clover Seed—1, J. Roy McCain.

Timothy—1, Thos. Stewart; 2, F. S. Taylor; 3, H. M. Estey; 4, J. Roy McCain.

Potatoes, Green Mountain—1, E. L. Hume; 2, James Hamilton; 3, Stanley A. White.

Potatoes, Irish Cobbler—1, E. Lorne Hume; 2, Fred Kilpatrick; 3, F. S. Taylor; 4, Stanley A. White; 5, James Hamilton; 6, J. Roy McCain.

Potatoes, Any Other White—1, Otis Shaw; 2, J. Roy McCain; 3, James Hamilton.

Potatoes, Red Skin—1, Stanley A. White; 2, F. S. Taylor; 3, Otis Shaw.

Potatoes, Dark Skin—1, F. S. Taylor.

Onions—1, E. L. Hume; 2, Thos. Stewart; 3, E. A. McCain.

Swede Turnips for Seed Raising—1, E. L. Hume; 2, Fred Kilpatrick; 3, H. M. Estey.

Mangel for Seed Raising—1, H. M. Estey.

Turnip Seed—1, E. L. Hume; 2, Thos. Stewart.

Mangel Seed—1, H. M. Estey.

F. S. TAYLOR, Secretary.

PORT ELGIN SEED FAIR

A very sucecssful seed fair and two days short course was held in the Exhibition Building, Port Elgin, March 28th and 29th, under the auspices of the Botsford and Westmorland Agricultural Society.

There was a goodly number of exhibits, all of a high order. Special mention might be made of the exhibits of white Russian Wheat, which elicited much favorable comment; a considerable amount of this variety is being offered for sale in this district. There were also some extra samples of oats and barley. The judging was done by Mr. S. J. Moore of the Seed Branch, Department of Agriculture, Ottawa, to the generai satisfaction of all.

nI connection with the short course a seed judging class was conducted by Mr. C. E. Hicks, of the Soils and Crops Division, Fredericton. Addresses were delivered by Messrs. M. A. MacLeod, Supt. Agricultural Societies, O. C. Hicks, S. J. Moore and others.

On account of the second day being stormy the attendance was not as good as it otherwise would have been, but a number of interested farmers attended the judging demonstrations in the afternoon.

Mr. E. P. Bradt, Sercretary for Agriculture for the Province opened the discussion and conducted the judging demonstrations on beef and dairy cattle, and Mr. Thos. Hetherington conducted the sheep judging on a few of the choice shearlings from the pure bred flock of Mr. Murden Goodwins. Remarks were made by Mr. J.K. King on the co-operative marketing of wool.

This Sign is Your Protection

THE surest, cheapest way of keeping farm buildings in repair is to keep them well painted.

To keep your buildings properly paint-protected it is not necessary, or even good business, to use a cheap paint. True economy consists in buying the very best paint, even though it costs a little more.

B-H PAINT "ENGLISH" 70% Pure White Lead (Brandram's Genuine B.B.) 30% Pure White Zinc 100% Pure Paint

has that proportion of finely-ground pure white lead and pure zinc which, when mixed with strictly pure linseed oil and turpentine, produces a paint of maximum covering capacity. It is due to these fine ingredients, and the correct proportioning of them that B-H gives a fine smooth surface that will not crack or peel, assuring long wear, and making it unnecessary to repaint for a long time to come.

Look for the B-H store, the "paint headquarters" for your territory. The B-H sign which hangs outside a store is, we consider, the best protection we can give a farmer seeking true paint economy.

It's better to PAINT than REPAIR

B-H Products for other purposes

For Interior Finishing
"China Lac," the perfect varnish stain.

Staining the Roof
B-H Shingle Stain in 19 different colors.

B-H Porch Floor Paint
For porch floors, ceilings and parts exposed to the weather.

Plaster Ceilings and Walls
B-H "Fresconette"—A flat tone oil paint.

Finishing a Floor
B-H "Floorlustre" excellent for interior floors.

For Barns and Outbuildings
Imperial Barn Paint.

BRANDRAM-HENDERSON LIMITED
MONTREAL HALIFAX ST. JOHN TORONTO WINNIPEG
MEDICINE HAT CALGARY EDMONTON VANCOUVER

Fololwing is the prize list.

Wheat, white Fife, 2 entries.—1st, Hallett Allen; 2nd, Edwin S. Allen.

zWheat, red Fife, 2 entries.—1st, John M. Simpson; 2nd, Wilfred Simpson.

Wheat, white Russian, 11 entries.—1st, Milledge Allen; 2nd, Henry Davis; 3rd, C. F. Allen; 4th, John M. Simpson; 5th, Arthur Oulton.

Oats, other variety of whtie, 9 C. F. Allen; 2nd, Arthur Oulton; 3rd, Wilfred Simpson; 4th, Henry Davis; 5th, John M. Simpson.

Ooats, other variety of White, 9 entries.—1st Jos. C. Allen; 2nd, Courtney A. Allen; 3rd, W. K. Allen; 4th, Henry Davis; 5th, C. F. Allen.

Oats, variety of black, 2 entries.—1st, Earl Taylor; 2nd, Steven T. Davis.

Barley, 6 rowed, 8 entries.—1st, Jos. E. Allen; 2nd, Courtnay A. Allen; 3rd, Henry Davis; 4th, Arthur Oulton.

Buckwheat, smooth, 7 entries.—1st, Henry Davis; 2nd, Thos. Davis; 3rd, James Simpson; 4th, Wilfred Simpson.

Field Peas, 3 entries.—1st, James Mann; 2nd, Wilfred Simpson; special, John M. Simpson.

Beans, white, 2 entries.—1st, John M. Simpson; 2nd, Jas. Simpson.

Beans, colored, 4 entries.—1st, Milledge Allen; 2nd, Wilfred Simpson; 3rd, Courtnay A. Allen.

Timothy seed, 4 entries.—1st, Wilfred Simpson; 2nd, James Simpson; 3rd, Thos. Davis; 4th, W. K. Allena.

Potatoes, Green Mountain, 10 entries.—1st, Jos. C. Allen; 2nd, Milledge Allen; 3rd, Henry Davis; 4th, Edwin S. Allen; 5th, James Simpson.

Potatoes, Silver Dollars, 9 entries.—1st, Jos. C. Allen; pnd, John M. Simpson; 3rd, Fraser Dobson; 4th, Henry Davis; 5th, Wilfred Simpson.

Potatoes, Empire State.—1st, Wilfred Simpson.

Potatoes, McIntyre, 3 entries. 1st, John M. Simpson; 2nd, Wilfred Simpson; 3rd, James Simpson.

Potataes. Irish Cobbler. 3 entries.—1st, Milledge Allen; 2nd, Edwin O. Allen: 3rd. Fraser Dobson.

Potatoes, Early Rose, 2 entries.—1st, James Simpson; 2nd, Wilfred Simpson.

Potatoes, Hebron, 4 entries.—1st, W. K. Allen; 2nd, Henry Davis; 3rd, Jos. C. Allen; 4th. Thos. Davis.

A

Poatatoes, dark skinned.—1st, John [illegible]. Simpson; 2nd, James Simpson; 3rd, Wilfred Simpson; 4th, James Mann.

NOVA SCOTIA GOES ONE BETTER

Kansas brags about buying an Ayrshire bull containing 62½% of the blood of the great Jean Armour——ean Rrmour's Lotus Laddie, owned jointly by the C. P. Blanchard and the Agricultural College, carries 75% of ths blood.

The following article taken from the March issue of the Scottish Farmer, published in Glasgow, Scotland, is a great tribute to the esteem in which Jean Armour, the greatest cow of her day, is held over in Scotland It is interesting to know that the Ayrshire stock bull, owned jointly by C. P. Blanchard and the Agricultural College, is from the same dam but carries more of her blood. If Kansas has bought the best, Nova Scotia has bought the super-best.

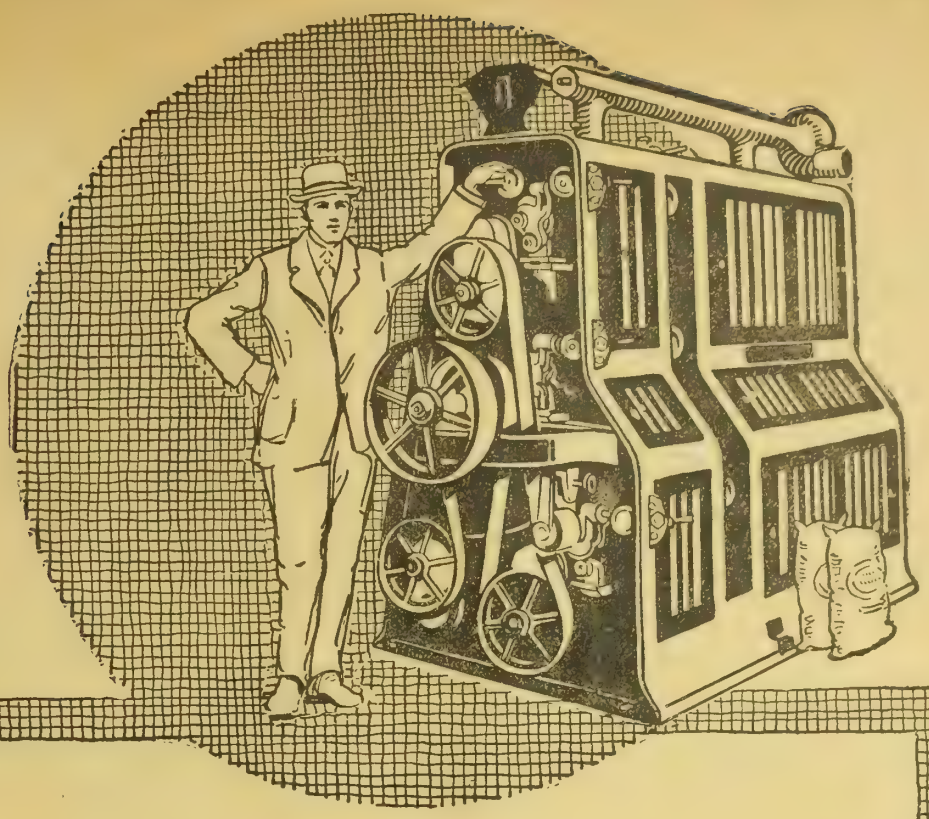
The following is the article referred to:

"Five hundred Pound Ayrshire for Kansas.—Kansas is looming big in the Ayrshire firmament at the present time. A few days ago Canary Bell, Kansas State College's famous Ayrshire, completed a new State record over all breeds, producing 19,683 lbs. milk, 744.51 lbs. fat, and incidentally the largest milk production record produced by any Ayrshire this year. Mr. L. E. Johnson, of Waldron, Kansas, furnishes Kanas with another record, paying five hundred pounds to Mrs. F. D. Erhardt, of West Berlin, Vermont, for the royal bred two-year-old Ayrshire sire, Jean Armour's Dairy King (19338). This is the largest figure ever paid for an Ayrshire sire in Kansas. In the purchase of JeanA rmour's Dairy King, Mr. Johnson has secured one of the greatest line bred bulls in the country. He is a son of the noted cow, Jean Armour, probably the greatest cow of any breed. Jean Armour was the first Ayrshire cow to produce 20,000 lbs. milk, producing 20,174 lbs. milk, 959.65 lbs. fat at the age of eleven years and coming back at the age of fourteen years with a record of 18,382 lbs. milk, 716.35 lbs. fat. eJan Armour's dam Sarah 2nd, was champion dairy test cow of all breeds in Canada and in her fourteenth year produced 11,626 lbs. milk, 442 lbs. fat. Jean Armour's daughter, Jean Armour 3rd, holds a world senior three-year-old record with a production of 21,938 lbs. milk, 859.65 lbs. fat. Jean Armour's Dairy King is line bred, carrying 62½% Armour blood, as well as the blood of Howie's Dairy King, who has twenty-nine entries in the Advance Registery, averaging 11,563 lbs. milk, 453.72 lbs. fat. Howie's Dairy King is the sire of Jean Armour 3rd, and grand-sire of the four-year-old champion August Lassie, 17,784 lbs. milk, 720.03 lbs. fat anad the senior two-year-old champion, Henderson's Dairy Gen 17,974 lbs. milk, 738.32 lbs. fat. Mrs. F. D. Erhardt has bred and developed this wonderful family and the infusion of blood into Kansas will undoubtedly be felt in the years to come. Mr. Johnson has also purchased a daughter and granddaughter of Jean Armour 2nd, who is a full sister to Jean Armour 3rd. Mr. Johnson is president of the Kansas Ayrshire Breeder's Association."

AN INTERESTING POULTRY "DON'T"

So often we are advised to "pound up broken crockery dishes, and so on for the chickens, for grit." If you are wise, you won't.

Why? Well, in the first place, commercial grit will be better and is cheaper than the time and labor spent in breaking up dishes, and, in the escond place, glazed crockery is apt to be poisonous to fowls.



Own This Paying Business

Localize the flour milling business in your district and earn from $500 to $1000 a month in profits. You can do it—and, no experience—either mechanical or technical—is required if you operate a

MARVEL MILL

This is the mill that has put the small milling industry back in the field as a competitor of the big flour mills. Over 1500 Marvel Mills are making money for enterprising men or companies today.

The Marvel Mill is a single unit, self-contained, one man mill that grinds, bolts and purifies—all in one operation. It requires no previous experience because each process is perfectly done by the one mill unit. It requires but half the power of the ordinary flour mill of the same capacity and produces the complete flour and by-products in 45 seconds after introducing the grain.

Made in seven sizes—15 to 100 barrels capacity.

Fill out the coupon attached—either for yourself, your firm or your co-operative society. Full information will be given upon its receipt.

The Canadian Fairbanks-Morse Co., Limited

Montreal St. John, N.B.
Toronto.

14

The Canadian Fairbanks-Morse Co,. Limited
Montreal, St. John, N.B., Toronto.

Without obligation to me please tell me more about Marvel Mills as a money-making proposition.

.....

.....

MARKETS.

CHARLOTTETOWN

Beef carcass, ox 20c to 22c; cow 18c to 20c.
Veal carcass, 16c.
Hogs, 22c lb. dresed, with organs attached.
Lamb carcass, 25c.
Mutton carcass, 24c.
Beef Hides, 16c lb.
Sheep Skins, $2.00 to $3.00 each.
Calf Skins, 30c lb.
Potatoes, firmer, at 50c to 60c bus.
Carrots, scarce, at $1.25 to $1.50 per 100 lbs.
Turnips, slow demand, at 25c to 30c per bushel.
Parsnips, very few available, nominal price $2.00 per 100 lbs.
Oats, market firmer, at 60c to 5c per bushel.
Cornmeal, slow market at $3.75 to $4.00 per bag.
Bran, advancing, $2.25 to $2.40 per bag.
Oatmeal, quiet, $5.75 to $6.00 per bag.
Middlings, $2.40 to $2.50 per bag.
Cotton Seed Meal, none.
Oil Cake, $3.50 to $3.85 per bag.
Buckwheat, none offered.
Ontario Flour, 98 lb. bags—per barrel $11.50 to $11.75.
Manitoba Flour, 98lb. bags, per barrel $11.75 to $12.00.
Chickens, none.
Fowl, none.
Turkeys, none.
Geese, none.
Butter, Creamery, 58c to 62c.
Butter, Dairy, 48c to 56c.
Cheese, none.
Eggs, 39c to 40c.
No hay or straw offering owing to condition of roads.

DAIRY PRODUCE TRADE

Montreal, April 18.—The receipts of butter today were 230 pockages, as compared with 210 for the same day last week, and 661 for the corresponding date a year ago. A very firm feeling continues to prevail in the market and prices were fully maintained with every indication of them going still higher in the near future in a wholesale jobbing way owing to the steady increasing scarcity of supplies. The demand today from grocers and other dealers was fair, and a moderate amount of business was done. The trade in oleomargerine continues fairly active, in a jobbing way, and prices rule firm with sales to 33c to 34c per lb. in 1 lb. blocks, and at 32c to 33c in tubs.

We quote wholesale jobbing prices as follows:
Finest creamery, solids....64c to 65c
Finest creamery, block....65c to 66c
Fine creamery, solids.....61c to 63c

The receipts of cheese today were 221 boxes, as against 204 for the same day last week, and 129 for the corresponding date a lear ago. Outside of a small trade passing for domestic and outside accont in large size cheese at 26½c to 27c, and in small Quebec's at 28¼c per lb., the market was quiet and featureless.

The following prices are being paid by the Commission:
No. 1 cheese.....25c
No. 2 cheese.....24¼c
No. 3 cheese.....24c

New York, April 16.—Butter, firm, Receipts, 12,124 tubs. Creamery, higher than extras, 64½c to 65c; creamery, extras, 92 score, 63½c to 64c; firsts, 62½s to 63½c; packing stock, current make. No. 2, 442½c to 43c. Cheese, weak. Receipts 2,579 boxes. State, whole milk, flats, current make, special, 32c to 33¼c; do. average run, 31½ to 32¾c.

THE PROVISION MARKET

Montreal, April 19.—The feature of the live hog situation continues to be the strong undertone to the market and prices in Toronto yesterday scored a further advance of 25c per 100 lbs. as compared with those paid last Thursday with sales at $21.25 to $21.50 per 100 lbs. weighed off cars, and at $21 to $21.25 fed and watered. In sympathy with the above and the continued light supplies coming forwarde here coupled with the keen competition for the same between packers, a strong feeling prevailed in the local market today and prices advanced 25c per 100 lbs. with sales of selected lots at $21.25 to $21.50 per 100 lbs. weighed off cars, and lots to $19.50. The market for dressed hogs was also stronger and prices were marked up 50c per 100 lbs. The demand was steady for small lots and a fair trade was done in a jobbing way in city abattoir fresh-killed stock at $28.50 to $29 per 100 lbs.

MILL FEED AND ROLLED OATS

Montreal, April 19.—There continues to be a good steady demand from all sources for millfeel in mixed car lots, and owing to the increased production of some lines of late a more active trade has been done, and the movement will likely keep up fairly large for another month or until the pastures are in good condition for the cattle. The tone of the market is firm with sales of feed cornmeal at $64, mixed grain mouille at $58 to $60, pure barley meal at $56 to $58, mixed moullie at $50 to $52, dairy feed at $46 and oat middlings at $44 per ton, including bags, delivered to the trade, and car lots of bran sold at $44 to $46, and shorts at $46 to $48 per ton, including bags, ex-track. The market for rolled oats is quiet and steady with broken lots of standard grades quoted at $3.75 to $4 per bag of 90 lbs., and Golden cornmeal at $4.50 to $4.75 per bag, delivered to the trade.

THE BALED HAY MARKET

Montreal, April 19.—There was no further change in the prices for baled hay on spit today, but the tone of the market is very strong on account of the very limited supplies coming forward from the interior, and it was reported today that sales of No. 1 timothy hay were made at points of shipment as high as $30. The demand for spot supplies was good and sales of car lots of No. 1 timothy hay were made at $29 to $29.50, No. 1 light clover mixed hay at $28 to $28.50, No. 2 timothy hay at $28 to $28.50, No. 2 clover mixed hay at $27 to 27.50, and No. 3 timothy hay at $26 to $26.50 per ton ex-track.

ANOTHER DECLINE IN GRAIN PRICES

Winnipeg, April 18.—Messrs. Baird & Botterel wired Shearson, Hammill & Co. the following:

Oats—Market lost ground today and was dull and featureless. In spite of navigation opening, no shipping business was in evidence and receipts will increase substantially by reason of relief afforded terminals. American news was rather bearish. Further labor troubles at the seaboard and an improvement in Argentine shipping a factor. Eastern consuming markets exceedingly dull.

Barley—Lower in sympathy with other grains. Merchandising business conspicuous by its absence. Trading was dull and featureless. We still maintain that there is liquidation to take place in the May position.

Flax—Easier tone with trade very dull.

Fluctuations in grain today were:

	Open.	High.	Low.	Close.
Oats—				
May ...	.72	.72¼	.71⅜	.71½
Jluy ..	.74	.74	.73⅜	.73⅜
Oct. ..	.67⅞	.67⅞	.67⅞	.67⅞
Barley—				
May ..	$1.02	$1.02	$1.00½	$1.00½
Flax				
May ...	$3.65	$3.65½	$3.63½	$3.63½
July ..	3.61	3.61	3.60	3.60

Cash prices closed:

Oats—No. 2 C.W., 71c! No. 3 C.W., 67¾c; extra No. 1 feed, 68c; No. 1 feed, 66c; No. 2 feed, 62⅝c.

Barley—No. 3 C.W., 99⅞c; No. 4, C.W., 94¾c; rejected, 88½c; feed, 88½c.

Flax—No. N.W.C., $3.66; No 2 C.W., $3.58½; No. 3, C.W. $3.43½.

EGG PRODUCTION LARGE IN COUNTRY

Montreal, April 19.—Receipts of eggs throughout the country are very heavy, but the demand is unprecedented, and notwithstanding the heavy production prices have shown a further advance. Country shippers in Ontario report having paid stores from 42c to 44c and made sales at prices hanging from 43c to 45c f.o.b. for current receipts, cases returnable. One shipper reports that he was confronted with a buyer who came into his district offering 45c for stores; to meet this price and get out with a profit he will have to get 46c f.o.b. Offers from Winnipeg and Regina have been received in the east recently on a basis of 42c and 43c for firsts f.o.b. western points, cases free. Production is increasing very rapidly in the prairie provinces, and an increasing movement of eggs from the west to the east may be expected. Prices there are considered too high for storing and as soon as a carlot can be accumulated it is shipped out.

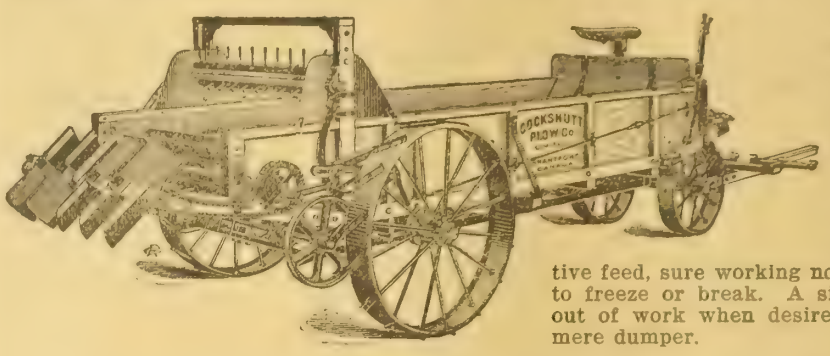
Even at the present high level eggs are cheap food in comparison with the cost of other meat products, which accounts for the very heavy consumptive demand. The quantity in storage so far is light, but the movement into the coolers is now becoming more general. Up to the present the surplus has been almost entirely taken for export to Great Britain.

Twelve cars of eggs were exported to Great Britain last week. Early in the week it was reported the demand from Great Britain had slackened, due to the advancing price on this side Since then, however, more inquiries have been received. In the United States it is said a much larger export trade could be done. The limited ocean steamship space is the one thing that is limiting the business.

Really Efficient Fertilizing

To get the good out of that "gold-mine" manure pile you must have a manure spraeder that (1) makes the work easy, (2) does the spreading absolutely evenly and (3) does it quickly. This means a spreader of great strength and of latest design backed by years of Canadian field experience—yet of light draft and simplicity of operation so that a good day's spreading leaves men and horses unwearied. This means choosing the

COCKSHUTT MANURE SPREADER



It is built low, top of box is just waist high, 41 inches from ground (17 inches clearance underneath) so loading is easy. The TWO pulverizing cylinders at end mean absolute breaking up of lumps and another special Cockshutt feature the wooden paddles at the back, rotate and distribute the manure thoroughly over much more than the machine's width. Simple positive feed, sure working no matter how big the load—no gears to freeze or break. A simple lever throws the distributors out of work when desired. Here is a real spreader, not a mere dumper.

A manure spreader can be a 100 per cent profit maker every season if it has the RIGHT RESIGN. The Cockshutt Manure Spreader should be your first study—write our nearest branch for special spreader folder, "Better Fertilizing and Bigger Crops."

THE FROST & WOOD COMPANY, LIMITED

Truro ST. JOHN, N. B. Charlottetown

One Chicago dealer reports a sale for export of 7,000 cases.

The poultry population of France is said to be 50 per cent. below what it was in 1913. Eggs were jobbing in the "Les Halles Central" Paris, March 26th at 360-370 francs per 1,000 (about 92c a dozen), 340-350 francs for current receipts small removed (about 87c per dozen), and 250-260 francs for Morocco. France's normal pre-war egg imports amounted to 35 million dozens. Present prices are favorable to business with Canada. Retail prices in stores range from 4 francs per dozen (80c) to 50 centimes per egg ($1.20) per dozen.)

There was no further change in the condition of the local egg situation today, but the tone of the market is firm with a continued good demand for supplies and an active trade was done in a jobbing way at 48c to 49c per dozen. The receipts today were 1,902 cases, as compared with 2,926 for the same day last weeek, and 2,561 for the corresponding date a year ago.

On account of the continued wet weather throughout the country the bad state of the roads, the deliveries of potatoes were again light today, and this, coupled with the fact that stocks on spot are small and the demand good, the undertone to the market was strong and the prospects are that prices may possibly go still higher. The trade in a jobbing way is fairly active with sales of Quebec white stock at $1.90 to $2.00 per bag of 90 lbs. ex-store, and car lots at $1.60 to $1.65 ex-track.

A good steady business continues to be done in maple product in a jobbing way and the market is fairly active and steady with supplies ample to meeet immediate requirements. Sales of maple syrup were made at $1.95 to $2.00 per tin of 13 lbs., and at $1.55 to $1.60 per tin of 8½ lbs. The demand for maple sugar is good and prices are maintained at 22c to 24c per lb.

1919 SPRAY CALENDAR FOR NEW NEW BRUNSWICK APPLE ORCHARDS

(Continued from page 787)

stone, ten pounds of either water slaked stone lime or hydrated lime and one pound of arsenate of lime to forty gallons of water. Drench thoroughly, spraying in every direction. The poison applied in this spray will control late feeding caterpillars such as Fall Web Worm, Red Humped Caterpillar and Yellow Necked Caterpillar.

Modifications for Special Insects

Green Apple Bug.—Where this pest is present substitute for the First Spray the following formula: Two pounds soluble sulphur, one pint nicotine sulphate, to 100 gallons water, omitting the arsenical poison. The addition of 4 pounds of fish oil soap to each 100 gallons improves this spray. If green apple bug is serious, use this formula for the second spray also, instead of the regular ane, drenching thoroughly.

Canker Worm.—Where this pest is present use 2½ pounds dry lead arsenate, 2 pounds of lime to 40 gallons water, instead of the regular formula for the first spray. Do no use any fungicide with this quantity of lead arsenate.

Aphids.—If aphids appear in the orchard add three quarters of a pint of nicotine sulphate to each 100 gallons of the formula recommended for the period, and spray thoroughly.

Preparation of a Quickly Made Bordeaux Mixture

To make Bordeaux rapidly put the required amount into the spray tank. Start the engine, and with the agitator running, fill the tank. While the agitator is still running add the hydrated lime and finally the insecticide. The Bordeaux is then ready to apply.

If using a barrel pump, place the required amount of powder or dissolved bluestone into the barrel, start the pump with the relief valve open so that the water will empty back into the barrel, and with the pump working, fill the barrel .With the pump still working pour in the hydrated lime (or mix in a pail of water and then add) and finally the poison.

Warnings

Do not use arsenate of lime alone on apple foilage.

Do not use arsenate of lead with soluble sulphur..

Do not use Bordeaux Mixture for the Second Spray, i. e., immediately after the blossoms fall.

In making Bordeaux for apple spraying do not use less than three parts of lime to one of copper sulphate.

Do not leave soluble sulphur exposed to the air; keep it in a closed container.

Be sure to add the lime to the soluble sulphur arsenate of lime combination.

Most of the common insecticides are safe when used with Bordeaux.

Measure the capacity of your spray tank.

If the first spray is applied closer to the opening of the blossoms than five days before, some slight russeting and paling of the fruit may result.

The use of lime sulphur and soluble sulphur ois advocated for one spray only, because used as a blossom spray neither of them is as efficient in scab control as Bordeaux. When used as a last summer spray the same reason holds true and in addition lime sulphur is liable to cause dropping of the set of fruit.

Be careful with the lime sulphur and do not wet the under side of the leaves with it more than can be helped or possibly some removal of the crop will result. Be liberal with the lime in all combinations as it will prevent leaf injury.

USEFUL HINTS IN BUTCHERING HOGS

Butcher hogs at home.

Give them water but no feed for a day before killing.

Bleed the hog with an 8-inch straight-bladed knife.

Be sure bleeding is done before scalding, or the skin may be left too red.

A heavy blow with an axe between the eyes will stun the animal before sticking.

The meat may spoil if the animal is excited before killing, or the weather is warm afterward.

Scrape as quickly and rapidly as possible after killing. The cold carcass is hard to scrape well.

Bleeding will be finisned more quickly if the animal lies on a steep slope with its head down hill.

Keep the hog moving in the barrel. If the animal is left pressed against the barrel the hot water cannot get at that part of the carcass.

Scraping is easier if a shovelful of hardwood ashes, a lump of lime, some ioncentrated lye, or a handful of soft soap had been added to the water.

Use a themometer. Do not attempt to scald with water at above 150 degrees. A good scald can be obtained at 140 degrees, but it takes longer.

In opening carcasses, split the pelvic bone between the hams with a knife by cutting exactly in the centre. To open the breastbone with a knife, cut a little to one side of the centre, but do not let the point of the knife get behind a rib.

APPLE TREES FOR SALE

Three years old, 5 to 7 feet, good thrifty stock (1st class) in Wagner, Red Stark, Wolf River, Cot's Orange Pippin, Ben Davis, Stark and Baldwin.
$25.00 per 100.
G. M. PECK, SON & CO.,
WOLFVILLE, N. S.

STRAWBERRY PLANTS !

Best varieties.
Strong healthy plants.
Send for price list.
JOHN N. CHUTE,
Berwick, N. S.

EARLY CABBAGE PLANTS

50-40c prepaid, shipped successfully. Ask for Vegetable Plant Price List. Agents wanted.
HEROLD'S FARMS
Fruitland, Ontario - - Niagara District

Look for the Rennie Seed Display

It's time to think about planting your garden. Make your selections now.

VEGETABLE SEEDS

BEAN—Improved Golden Wax
Lb. 65c., ¼ lb. 20c., Pkt. 10c.
BEAN—Scarlet Runner
Lb. 90c., ¼ lb. 30c., Pkt. 10c.
BEET—Detroit Dark Red Turnip
¼ lb. 85c., Oz. 25c., Pkt. 10c.
SWISS CHARD—
¼ lb. $1.25, Oz. 40c., Pkt. 10c.
CABBAGE—Early Winnigstadt
¼ lb. $3.00, Oz. $1.00, Pkt. 10c.
CARROT—Chantenay Half-Long
¼ lb. 90c., Oz. 30c., Pkt. 10c.
CARROT—Early Gem or Oxheart
¼ lb. 90c., Oz. 30c., Pkt. 10c.
SWEET CORN—Golden Bantam
Lb. 55c., ¼ lb. 20c., Pkt. 10c.
CUCUMBER-London Long Green
¼ lb. 75c., Oz. 25c., Pkt. 10c.
CUCUMBER—Chicago Pickling
¼ lb. 75c., Oz. 25c., Pkt. 10c.
LETTUCE—Select Big Boston
¼ lb. $1.00, Oz. 35c., Pkt. 10c.
LETTUCE—Nonpareil Cabbagehead
¼ lb. 90c., Oz. 30c., Pkt. 10c.
CITRON—Red Seeded for Preserving
¼ lb. 75c., Oz. 25c., Pkt. 10c.
ONION—Large Red Wethersfield
¼ lb. $1.00, Oz. 35c., Pkt. 10c.
ONION—Yellow Globe Danvers
¼ lb. $1.25, Oz. 40c., Pkt. 10c.
PARSNIP—Hollow Crown
¼ lb. 60c., Oz. 25c., Pkt. 10c.
PARSLEY—Champion Moss Curled
¼ lb. 75c., Oz., 25c. Pkt. 10c.
GARDEN PEAS—American Wonder
Lb. 45c., ¼ lb. 20c., Pkt. 10c.
GARDEN PEAS—Improved Stratagem
Lb. 50c., ¼ lb. 20c., Pkt. 10c.
RADISH—French Breakfast
¼ lb. 65c., Oz. 20c., Pkt. 10c.
RADISH—Long White Icicle
¼ lb. 65c., Oz. 20c., Pkt. 10c.
RADISH—Rosy Gem, White-tipped
¼ lb. 65c., Oz. 20c., Pkt. 10c.
TOMATO—Bonny Best
¼ lb. $1.75, Oz. 60c., Pkt. 10c.
TOMATO—Earliana
¼ lb. $1.75, Oz. 60c., Pkt. 10c.
TURNIP—Orange Jelly or Golden Ball
¼ lb. 75c., Oz. 25c., Pkt. 10c.
SWEDE TURNIP—Rennie's Prize Purple Top
Lb. $1.40, ½ lb. 75c., ¼ lb. 40c.
HERBS—Sage
Oz. $1.10, Pkt. 10c.

FLOWER SEEDS

ASTER—Select Comet, Mixed Colors
Pkt. 10c.
BALSAM—Finest Double Mixed
Pkt. 10c.
CARNATION—Choice Mixed
Pkt. 10c.
MORNING GLORY—Climbing
Pkt. 10c.
SWEET WILLIAM—Finest Mixed
Pkt. 10c.
MARIGOLD—French Mixed
Pkt. 10c.
SWEET MIGNONETTE—Grandiflora
Pkt. 10c.
NASTURTIUM—Climbing Mixed
¼ lb. 75c., Oz. 25c., Pkt. 10c.
NASTURTIUM—Dwarf Mixed
¼ lb. 90c., Oz. 30c., Pkt. 10c.
PANSY—Choice Mixed
Pkt. 10c.
PETUNIA—Hybrids Mixed
Pkt. 10c.
SWEET PEAS—Finest Mixed
Oz. 20c., Pkt. 10c
TEN WEEKS STOCKS—Choice Mixed
Pkt. 10c.
VERBENA—Finest Mixed
Pkt. 10c.
WILD FLOWER GARDEN
Pkt. 10c.

Should your dealer be unable to supply all the seeds you require, write us direct.

Send for copy of Rennie's Tool Catalogue. It includes Poultry Supplies, Planet Junior Garden Tools, Sprayers, Fertilizers, etc.

THE WILLIAM RENNIE COMPANY LIMITED
190 McGILL ST., MONTREAL
ALSO AT TORONTO, WINNIPEG, VANCOUVER

RENNIE'S SEEDS

A GOOD ADVERTISING MEDIUM

A Leading Maritime Stock Breeder Tells of Results He Secured rom Advertisinig in the Maritime Farmer

Dalhousie Jct., N. B.
April 14, 1919.

The Maritime Farmer,
Sussex, N. B.

Dear Sir:—

In ordering a change of our adv. and to prove the Maritime Farmer gives results as an advertising medium, I will mention a few of our recent sales.

To Mr. Jos. Bernier, Levis, Que., a 5 year old cow. To Wm. Mann, Upsalquitch, a pair of calves. To Mrs. L. E. Doherty, "Gauld Grant Farm," Bathurst, a hanadsome heifer calf out of Millie Pontiac Puedge. To J. Walter Jones, Charlottetown, P.E.I., the 5 year old cow Abbekirk Queen's Countess that last winter made over 30 pounds butter in 7 days. This cow was tested as a 2 year old, as a year old and as a 5 year old and her averge test for the 3 years was nearly 5% fat ,tested under proper conditions; this cow is far from her limit. This cow is a daughter of our old senior herd sire. Maple Grove Mercena Mercedes, and for dam a full sister to Maple Grove Patti, record 32.58, raised by us and sold to Logan Bros., Amherst Point, some years ago. To Thos Reardon, Sussex, N. B., the 5 year old cow Homestead Lass, which cow as a junior 3 year old made 25 lbs. butter in 7 days and milked over 80 lbs. milk per day. This should make a grand foundation cow for Mr. Reardon. To essrs. Gesner, A. Taylor & son, Salisbury, a 15 months old daughter of Maple Grove Blancha by Homestead Hengerveld Rooker. This should make a grand foundation cow for Mr. Taylor, as she comes from a long line of heavy producers tracing back to such noted animals as Pontiac Korndyke and Blanche Lyons her G. sires fur nearest dam averaging over 30 lbs. butter in 7 days. To Edgar Hicks, West Bathurst, the 5 year old cow Millie Pontiac Pledge, her record made last winter as a sr. 4 year old being over 24 lbs. butter in 7 days and milked up to 80 lbs. per day.

Although we have sold some good ones we still have some that will be heard from, a few of which deserve special mention. Eloise De Kol Colontha, freshened at 2 years and 13 days and over 4 months after freshening in an official 7 day test made 17 lbs. butter and averaged almost 60 pounds milk. This heifer milked up to 68 lbs. per day from 3 milkings when fresh and in this condition. She has a dam Eloise De Kol Netherland. one of the very best types of a Holstein cow in Canada. I will quote you the remark made by Mr. H. M. Holby while judging at the Chatham Exhibition a few years ago, that only in every few years a cow to equal her appeared at the Toronto Fair. However thiis heifer has for a sire the great and richly bred "King Lyons Colontha." All readers of the Maritime Farmer interested in dairy cows should keep tabs on this heifer's performance.

Those already mentioned with the daughters of Homestead Lass, Abbekirk Queen's Countess, Millie Pontiac Pledge and sired by such bulls as Maple Grove Mercena Mercedes and Homestead Hengerveld Rooker, make up the greater part of the herd, together with our recently imported jr. herd header, King Korndyke Johanna No. 32916, who has for a dam Jemima Johanna Wayne, the highest 7 day record cow ever developed at the famous Riverside herd, owned by J. W. Richardson, Caledonia, Ont. He has for sire King Johanna Pontiac Korndyke, one of the richest bred sires in Canada, his dam being a 29.14 lb. daughter of Pontiac Korndyke, and also dam of Pontiac Lady Korndyke 38.03 lbs butter in 7 days, the highest record daughter of her noted sire.

As mentioned elsewhere in this

PROTECTION is today the keynote of international trade preparations.

GREAT BRITAIN is restricting imports and PROTECTING home industries.

Acting Premier Watt of AUSTRALIA announces the introduction of a measure for higher PROTECTIVE duties

FRANCE is exercising Government control of imports to build up home manufactures and home markets

ITALY'S after-war programme calls for a higher PROTECTIVE tariff.

A higher tariff for the UNITED STATES is forecast by Chairman Fordney of the Ways and Means Committee of the next United States Congress, who will be the author of the new tariff bill. Congressman Gillett, of Massachusetts, who will be the Speaker of the House of Representatives in the new Congress, says, "at the earliest opportunity there should be passed by the Republicans of the House a protective tariff measure which will provide more abundant revenue and prevent an inundation of foreign goods produced by cheaper labor."

GERMANY depends on PROTECTION to recover its commercial position.

Under PROTECTION, CANADA has success-fully borne the burden of four and a half years of war. Wages have been high and agriculture and industry have prospered. The present is no time for economic experiments

BUY W-S-S WAR-SAVINGS STAMPS

Under Free Trade—where will the Revenue come from?

BUY W-S-S WAR-SAVINGS STAMPS

Canadian Reconstruction Association

WESTERN OFFICE
510-11 Electric Railway Chambers, Winnipeg

HEAD OFFICE
Royal Bank Bldg., Toronto

EASTERN OFFICE
603-4 Drummond Bldg., Montreal

paper, we are planning on making some improvements about the farm this coming season and consequently will put a price on nearly anything.

R. L. HICKS.

HOW TO PREVENT BEES FROM SWARMING

No matter how much room we give the bees, sometimes they will persist in rearing queen cells and preparing to swarm. If we do not do something to stop them they will swarm. Swarming will mean a much less chance for gathering a surplus of honey unless we make the swarm go back to the same stand anad manage the bees so as to give the swarm all the workers we possibly can from the old hive. To make this swarming business work to our profit with the least trouble we can shake the bees from the frames in what is known as "shake swarming."

Shake swarming should not be done until as near the time for the honey flow to begin as possible. You can cut out all the queen cells at a time or two if you wish to go to that trouble, and sometimes the bees will give up swarming when this is done. If they build again after you have cut them out twice you had better shake them.

I always take one frame of brood and be sure there is no queen cell on it and put in a new hive on the stand where the old hive stood, moving the old hive to one side. Then I shake all the bees from all the frames in the old hive down in front of the new hive. I try to get the queen on the frame of brood I put in at first, for there is danger that she might be injured in the shaking or lose her way and get into some other hive. One frame of brood from the old hive that has a nice large cell or two I do not take out or shake the bees off, as the shaking would be apt to kill the queens in the cells.

If you have a super cover with a bee escape in it put this on top of the new hive and bore a haff-inch hole in the hive a couple of inches from the bottom or make a small entrance right at the bottom so the bees can go in and out of the upper hive as they wish. You leave this hive on top of the other ten days if the honey flow has not begun, and then you take it off and set on a stand where you want to leave it to build up. If the honey flow is on you wil lhave to put a super on your lower hive, so you will not leave the old hive above more than a couple or three days. The longer you leave it there the more bees wil begin flying from it and as thse all go back to the swarm in the lower hive after you remove the upper it makes that stronger, and that is the hive that will furnish the surprise, as the other will only build up ready for wintering.

Watch the old hive where you set it and see if the queen begins to lay before long, so you can be sure that there isa queen in it. If there should be none you put it back over the other hive with a newspaper between the two and let the bees mix after they have gnawed away the paper.—L. H. Cobb.

SHORTHORNS ON THE RANGE

Mr. A. E. Cross, Calgary, Alta., who carries on an extensive ranching business in Alberta, makes the following statement:

"I could not carry on a cattle business without Shorthorns. Not saying anything deprecatory of other breeds, the Shorthorn suits our purpose, and we are running a herd on the open range. The make us 200 pounds more beef than would be possible with other cattle." He also states that what the Western cattle industry needs is bigger cattle, which insures more beef to the animal, there being no difference between fixed charges on a 1000 lb. steer and a 1200 lb. steer. Mr. Cross uses both Shorthorn and Hereford blood, claiming that he gets the best resutls from cattle which carry about two-thirds Shorthorn and one-third Hereford bolod.

B. J. Erwin, Douglas, Wyo., marketed his two-year-old range steers weighing 1041 lbs., practically the same weight as the average three-year-olds from the same range; and the steers of the Fiddleback outfit by Shorthorn bulls weighed 1230 lbs. at Omaha, about 200 lbs. more than the average steers not carrying Shorthorn blood.

Wherever the Shorthorn goes we can trace its influence for good. Big, growthy, sappy steers are characteristic results from using Shorthorn bulls on the range, as elsewhere.

CARE WITH LANTERNS

Where used around the barn it should always be recognized that a lantern always constitutes a fire risk. However, it can be used with comparative safety if reasonable care be exercised. Most lantern fires start from the lantern being accidentally overturned. The oil then begins to trickle out and in a moment there is a blaze which, because of its nature, is exceedingly difficult to smother. To avoid the overturned lantern it is well to go through the barn and install hooks on the wall or rafters at every point where it is likely one will wish to set down the lantern in the doing of the chores about the place after dark. A splendid plan also is to string a wire back of the cows and in front of the mangers from one end of the barn to the other. A hook is then placed on this for holding the lantern, which can be moved from stall tostall as the chores are done.

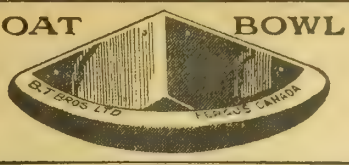
RECORD PRICE FOR A BULL

(London Times, February 22)

The British rceord for the highest price for a Shorthorn was broken at Penrith, when Gartley Lancer the First, champion Shorthorn bull, the property of Mr. J. W. Barnes, of Aikbank, Wigton, was sold for 4,750 guineas to Mr. M. Marshall, of Stranrear. He was calved in February, 1917.

This is the highest price ever paid for a Shorthorn at a public sale in this country. At the dispersal of Lord Dunmore's herd in 1875 Lord Fitzhardinge gave 4,500 guineas for the bull "Duke of Connaught," and the next highest prices were the 4,200 guineas each realized for the King's champion and Lord Manvers's reserve champion at Birmingham this week.

A bird first off the roost in the morning and the last to return to it at night is considered a better layer than the one that spends the major portion of her time on the roost, or stands around wtih a "humped-up" appeaarnce in a corner of the pen, or basks all day in the sun.



A Handsome Horse Stable

Our good Canadian farmers take pride in their horses. They take pride in having their horses looking well. And horses always look their very best in a handsome stable. You would be glad to show a visitor or buyer through a stable like the one in the picture above. The open construction of the steel guards allows the sunlight to flood into every stall. The steel fittings, too, will always look well because the steel is practically indestructible. It cannot be disfigured by cribbing or kicking.

Let us send our Barn Book which shows many fine photos of horse stables and describes these steel fittings completely.

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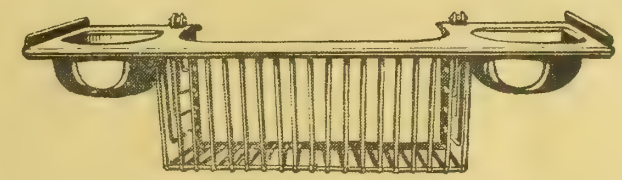

MANGER

COLUMN

VALUE OF PURE BRED SIRE AT THE HEAD OF THE HERD AS TOLD IN HIS PROGENY

A synopsis of a splendid address by Prof. W. F. Fraser of the Illinois Experiment Station. Be sure and read it.

A few poor cows may do little permanent harm to the dairy herd, but a poor sire will do untold damage. Frequently dairymen hold the penny so close to the eye it is impossibile to see the dollar a little farther off, and this is just what a man is doing who has a good dairy herd of grade cows and thinks he is economizing by buyng a poor or even common sire.

If the good pure-bred sire improves the milking capacity of his daughters only one and one-half pounds of milk at a milking, above the production of their dams, this would mean an increase of 900 pounds of milk for the 10 months or 300 days an ordinary cow should give milk. The daughter would also be a much more persistent milker; that is, would give milk for a longer time in the year, and she would regain her flow of milk better after an unavoidable shortage of feed, as in a summer drouth. These daughters may certainly be credited with 1,000 pounds more milk per year than their dams produced. At the low estimate of $1 per 100 pounds this extra amount of milk would be worth $10 per year. The average cow is a good producer for at least six years, or until she is eight years old. It will, on the average, be four years after purchasing the sire, before his first daughters will have brought in the first extra $10. Eight dollars and twenty-three cents kept at compound interest for these four years at five per cent. will equal $10, so the daughter's improvement or increase of income the first year is worth $8.23 at the time her sire is purchased. The cash value of the daughter's improvement (inherited from the sire) figured in the same way for each of the last six years she gives milk, is shown in the following table:

Improvement first year	$8.23
Improvement second year	7.83
Improvement third year	7.46
Improvement fourth year	7.11
Improvement fifth year	6.77
Improvement sixth year	6.45
Improvement for six years	$43.85

The total increased income of a cow over her dam by having a good sire is therefore $43.85.

In an ordinary dairy herd of 35 to 40 cows an average of 17 heifers per year should be obtained, and 12 of these should be worth raising, making it easily possible for a bull to earn 12 times $43.85, or $526 a year. This would amount to $1,578 in the three years that a bull is ordinarily kept in service.

Cost of providing every heifer one good parent:

	Pureberd	Scrub
Cost of sire	$150.00	$ 30.00
Interest, 3 years, 5 per cent	22.00	4.50
Cost of keeping, 3 years	100.00	100.00
Risks, 3 years	50.00	10.00
Total expense 3 years	$322.50	$144.50
Value at the end of 3 years	100.00	30.00
	$222.50	$114.50
	144.50	
Extra cost, good sire, 3 years	$108.00	
Extra cost, good sire 1 daughter	3.00	

Considering the male calves as worth no more than if sired by a scrub, it would then cost $36 to provide one good, purebred parent for the 12 heifer calves which are raised each year, or $3 per heifer. Where else can such an investment be found? Three dollars expended brings in an average return of over $7 per year for six years, or $43.85 in all. This makes a clear addition of $43.85 to the income of each daughter, or a net profit of $40.85 nd of $1,470 for 36 daughters in three years. Here is nearly 1,000 per cent. profit on the investment. The original cost of the good sire looks very small beside the $1,470. It really pays to, as nothing else on the farm pays, to put $150 into the right kind of a dairy sire that will return practically ten times $150 within three years.

An examination of the details will show these estimates to be conservative. There is plenty of margin left for figures and unfavorable conditions. One thousand pounds of milk per year is a conservative estimate of the improvement of the daughter's production to credit to a good sire, but the details of figuring it may be varied to suit conditions in different herds and different localities. One hundred and fifty dollars is certainly a liberal allowance for the purchase of a pure bred sire, and results here named are based upon having a first-class animal at the head of a herd. A herd of only 35 or 40 cows is taken for illustration while a vigorous sire properly fed and exercised is sufficient for a herd of 45 to 50 cows, provided he is not allowed to run with them. There is another distinct improvement of the good sire's daughter besides her milk production; it is the improvement of her blood or breeding, as the result of which her daughter will be better milk producers.

This blood improvement of all the daughters accumulated through a series of years means a remarkable increase in the efficiency of the herd.

It is the common experience of all dairymen, who have used a really good improved dairy sire that the investment has made them royal returns. The $150 cost price looks "too big" only to the narrow vision that cannot see the natural improvement of the herd cattle certain to follow. Many a dairyman might have reason to pay a big price for a fine cow, but the same argument does not apply at all to the purchase of an improved bull, because the sire's influence spreads so much farther and faster than that of the cow.

If the heifer calves are to be raised for dairy cows there is absolutely no business reason on earth for keeping a scrub bull. The dairymen who think there is, pay a heavy price annually for maintaining that tradition. The scrub bull is the most expensive and extravagant piece of cattle flesh on the farm. He does not stop at being merely worthless, but will lose the farmer the price of two or three good bulls every year he is kept. The dairyman could not afford to keep a scrub bull if the animal were given to him, if he were paid for boarding the beast and given a premium of $100 per year for using him. The presence of the scrub in so many Canadian herds—many times without a single qaulification except that he is a male—is an offence and disgrace to the dairy business and a plain advertisement of the dairyman's thoughtless bid for failure. The only thing on earth the scrub sire is good for is sausage, and it is high time that this plain and simple truth were given practical acceptance on every dairy farm.

By all means get a good dairy sire if you have to sell two or three cows to do it. The improveed sire is, without question, the most economical investment in any dairy herd.

CAUSE AND CURE OF MILK FEVER

Can you tell me what causes cows to have milk fever and how can we prevent the disease?—S. M.

Reply.—The exact cause of milk fever is unknown, but it is thought to be due to bacteria in the udder, aroused to activity when the cow calves. The animal loses the power of her hind legs and becomes unconscious. The inflation of the udder with sterilized air, pumped in by means of a special milk fever "outfit" quickly proves remedial in most cases. A cow is much less likely to have an attack if "dried off" for six weeks before calving, and during that time is exercised daily and lightly fed in such a way as to keep her bowels somewhat relaxed. Also avoid milking the cow out clean for a few days after calving. Better let the calf suck for three or four days if the cow is subject to attack.

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—a good crop—yes, but you can do it, by planting your trees with
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Spade-planted trees have cramped and soil-bound roots and their growth is slow and uncertain. Trees planted with C. X. L. reach out with their roots and obtain all the rich fertility and moisture in the sub-soil. C. X. L, not only digs the holes for planting but it breaks up the hard pan.
Fruit trees planted with C. X. L. are healthier, stronger, grow faster and bear quicker than spade-planted trees.
Use C. X. L. for digging tree holes and ditches, for blasting boulders and stumps. Our booklet "Farming with Dynamite" tells how you can use C. X. L. profitably on the farm.
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14
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SIX YEAR OLD APPLE TREES
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CANADIAN EXPLOSIVES TRADE CXL MARK LIMITED

Auction Clyde Stallions

Residence Late Hugh R. McMonagle, Sussex Corner, N. B.

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Royal Baron's Pride (9470)

FOALED IN 1907

by Royal Baron Imp. (4722) (11161) Dam Doll Gordon (17940). A sure stock getter with a splendid array of fine colts. Beautiful Bay and weighs 1800. Class A Government Ceritificate.

Magnus Montgrave (19187)

FOALED IN 1915

by Montgrave Magnus Imp. (8203) (12255) Dam Joan (16766.) A Bay stripe, 4 legs white. Weighs 1800 and will weigh 2000 lbs. Class A Superior Government Certificate. A particularly fine animal.

TERMS CASH.

E. O. McINTYRE, Auctioneer.

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AND

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Volume 24. SUSSEX, NEW BRUNSWICK, MAY 6, 1919. Number 15.

Successful Co-operation in Nova Scotia

Address by A. E. McMahon, Manager United Fruit Companies of Nova Scotia at the New Brunswick Farmers and Dairymens Association

Mr. Chairman and Gentlemen,—

It affords me a great deal of pleasure to have the opportuntiy of coming up here and giving a short address in connection with co-operation. I have to ask you to pardon me, if I refer to the Province of Nova Scotia quite often, on account of the fact that the work we have accomplished has reference to that province. I want you to understand that we in Nova Scotia are in sympathy with New Brunswick and every other province in Canada, as far as agricultural interests are concerned. In giving you an outline of our work in Nova Scotia, it is in order that you may get some information therefrom and be enabled to go forward and do better in future.

The United Fruit Companies of Nova Scotia were organized in the early 90's, through force of circumstances. We discovered that we were being wokred against by large interests. I want you to bear in mind that I am not referring to this through any motive of jealousy, because personally I do not blame any man for making as much money as he can, so long as he makes it legitimately. Then, again, in the early 90's tranpsortation was one of the most difficult problems. Large interests were able to pick space and resell it or draw a rebate from all the freight shipped out by the purchaser. In our province, for instance, a speculative interest might pick out his space; when a portion of that was filled up, a higher rate was charged to the purchaser or shipper and the difference was rebated back by the Steamship Company to the speculator. These facts became known to different business interests and we decided it was time the purchaser had that which belonged to him.

In 1896 a committee of three was appointed, and they were authorized to go out in the markets of the world and endeavor to charter a few steamers, outside of the subsidized lines. They succeeded in chartering two boats. In those days subsidies were given to mail boats and those boats carried our freights and made extra profits, so, regardless of subsidies this Committee chartered two boats in New York and brought the first one to the old town of Annapolis Royal. We had no difficutly in obtaining the first load. The result was that by the time the first ship was loaded, speculative interests, transportation interests, and steamship companies got busy. The price of apples went up 25c or 50c per barrel, owing to cash offers being made for them, in advance of the market value; these offers were made to growers having space reserved on the second boat. Enough gave way to this temptation to render the gathering of a cargo for the second boat most difficult. Then the transportation companies saw fit to get in touch with and keep in touch with the personal interests and their purchasers, with the result that this was not tried again until 1907. Think of it,—the large dealers who were drawing the revenue from the people of Nova Scotia succeeded in keeping the people from getting that which was their own for eleven years.

In 1907 the people decided to form a Company and erect a warehouse. The members of this Company built their own warehouse capable of handling some forty thousand barrels per season. They hired a Manager, also a packing crew of some 7 or 8 or 10 men to come in in September and work throughout the entire season. In 1910 the result was some 22 co-operative companies were organized in the Annapolis Valley. It was soon found that the companies would underbid each other in selling,—if a speculator came into the vicinity and said "I will give you $2.00 per bbl. more for your apples," the companies would hold out for price, so that the different co-operative companies became the individual.

Early in 1910 we decided to call a meeting of representative men composing these 22 companies; the meeting was called and it was decided to form the 22 companies into one organ ization and work for one year under a Manager as an experiment, without any legal binding. Sometimes we experienced difficulty in holding the companies together and we could not get the freight we required for transportation and for sale. At the close of that season we decided that we would extend our operations, that we would organize more companies and affiliate them under one head. The 22 Companies were incorporated under what is known as The United Fruit Companies of Nova Scotia, Limited. There was a Board of Management composed of 5 men, who elected a General Manager—one man representing those 22 companies. We did $740,-000. worth of business beginning 1911 and closing 1912.

Now, gentlemen, I want to refer to one thing. The life has not been altogether smooth with us,—it is not going to be altogether smooth with you. Farmers are apt to be suspicious one with the other. We had tried several organiaztions previously and had not been able to hold them together, on acocunt of local dealers. There is only one way to make a success,—make it a commercial agency, give them more for their goods, give them their supplies cheaper; once you fail to do that, members will drop away from you as rapidly as they came to you. Those are the experiences we have had, and they have been bitter on some occasions.

As I stated before, at the end of 1912 we had a turnover of $750,000. and we had some 1100 or 1200 farmers together. Our Company had increased, during the following year eleven or twelve companies, and our people were thoroughly convinced the co-operative principle was right. The United Fruit Companies are now a staple and responsible institution. They are a necessity in that there are not enough speculators in Nova Scotia to handle the crop of apples and pay the losses of an adverse esason. That they are financially sound is evidenced by the fact that at times during the past season the credits advanced by the Bank amounted to a total of slightly more than one-half million dollars. A lot of our success is due to the fact that we have done our business along commercial lines. We have from seven to eight departments, including apples, flour, wheat, etc., but we see to it that every Department we run is absolutely self-sustaining.

I listened to Mr. McKenna with a great deal of pleasure,—I see you are accomplishing something here, you have commenced well and you have a prospect of going ahead, but I want you gentlemen to remember, before you go any further, you must have competent officials and you must pay them for doing their work and you must see that every department is handled to have a credit on the right side of the balance when you close up your business.

In 1907 there were about forty potato representatives of Europe Commission Agents, representing English Commercial Houses. Those representatives must have been good men; of necessity those men must have been worth $1500. or $2000. a year and their expenses, otherwise those strong old firms would not have esnt them to the Province of Nova Scotia as their representatives and asked them to obtain consignments of goods for London, Liverpool, Manchester, Glasgow, or wherever it might have been. Those men were eating up profits that really belonged to the producer.

The first year of our work was most strenuous, we had opposition from all directions—from European Houses, and from the speculative interests. It has never been our policy to do any knocking—we simply went ahead and did our business. We believed if we made good we would be supported and if we did not make good we would not be supported. The first year we did not send a representative to the European market, through correspondence we marketted our goods direct. The second year we spent $3000. to send a getnleman to London to look after the London and Liverpool markets. The third year we didn't have any representative from any European Commission House,—we were doing our business direct and as a result we cut the rebate system and reduced the handling charges 2%, which in all increased the price of apples 32c per bbl. or 25c clear of our present handling charge of 7c.

Now you can see that it was nothing but the large body of farmers getting together under one head that was able to accomplish this work in 1911 and 1912.

That is not all we accomplished in connection with the marketting of our fruit. We employed our own Inspector working throughout the entire season and finishing up when the apples were packed out in the Spring. Previous to this, unscrupulous packers and individuals had put out a pack which gave Nova Scotia fruit an unenviable reputation on the markets. Having the Inspector enabled us to see that all the Company Fruit was packed to one high standard, and any such thing as fault being found by a Government Inspector was absolutely unknown to us—it was acknowledged by all the inspectors that it was not necessary to inspect the United Fruit Growers pack. This high standard of pack at once captured the local markets for the United.

There are five companies who own stock in the United who are not working with us at the present time; there are six more companies who left us but came back again; the five companies are outside because of local or personal prejudice, outside of good business reasons. We are 43 companies who have subscribed 20% of their capital stock in our organization.

I know that you people in the province of New Brunswick are large users of poisons. We experienced difficulty in getting direct connection with wholesale firms who would give us jobbers prices. Our first purchase was in 1912 and consisted of twenty-two tons of Arsenate of Lead. It was rather more than we required that year, but it was absolutely necessary that our Manager at that time should purchase direct from the Company. In 1913 twenty-six tons of Lead were ordered, the order being divided between two firms. We soon recognized the folly of dividing our orders and set about selecting the brands that suited our requirements and then invited tenders from the various firms on our total requirements of each separate article.

Before making any purchase of poisons we submitted a sample of all quotations to the gentlemen in charge of these departments for analysis and that is how we discovered when a dangerous article was being placed on the market. We hold meetings once a year when either Mr. Sanders or Mr. Brittain is present and explains the different diseases and insects it is necessary to combat.

Now I don't know that it is necessary to say much more, only in con-

nection with the cost of the article. I state publicly that we have made our purchase of poisons this present year cheaper than any other concern in the Dominion of Canada has purchased. I say that our lime and our lead and our poisons are cheaper than those offered on the market by any other concern in the Dominion of Canada. It is true that competition may occur, it is true that once our prices are known, other concerns may say "We will compete and meet those pirces," but I stand behind my statement that we have caused a reduction in our purchases of arsenate of lime of 8c per pound.

Not only that, we have been able to avoid mixtures that are not satisfactory and that might have done an injury.

Another point—a great many of the people in our province have gone over to dusters. The dust was retailed at the beginning of this season at 11½c per lb. We can deliver it now at 8½c per lb. We always pay cash. Even with this we were not satisfied. We went further into the situation with the result that we are buying an extra fine grade of superfine sulphur in United States and our arsenate of lead in Canada. We will do the mixing in one of our warehouses and allowing ourselves the largest profit we have ever taken on spray material will furnish our members with 00-10 sulphur lead arsenate dust at 8c per pound. The reason for this large profit is to protect ourselves on this material at the end of the season. So you will see, gentlemen, we are able to reduce the expenses to the shareholder to at least one-third on matters of that kind and that means the man can use more, or it means he can use less and live better, but it does mean he has that much more money to handle one way or the other.

I am going to refer for a little time to the matter of fertilizer. I listened with a great deal of pleasure when Mr. McKenna said he purchased some 2,000 tons of fertilizer. Now we had a good deal of difficulty in connection with fertilizer and possibly our experience would help you. In the fall of 1910 and early part of 1911 we decided we would require from 1,000 to 1,500 tons of fertilizer; that was our initial year. We sent our General Manager to Boston to see if he could not purchase direct from the different fertliizer concerns; they turned him down in New York. Before returning home he went to Baltimore, he had to buy 2,000 tons and had to charter a Norwegian steamer and bring it to Windsor, N. S. Once there the ice was broken and manufacturers sought our trade and were willing to supply our requirements at jobbers prices.

I noticed the remark in a previous speakers address that acid phosphate would be sold for less next year. I think it would be quite difficult to do that next year, but in a couple of years it might be brought about. We were able to deliver it to our Companies at a price of $12.00 per ton; that is the lowest prices I ever remember this being sold in any quantity. In 1912 we ordered 2,000 tons, this year we ordered 6,000 tons of fertilizer. Once the trade discovered we were going to purchase direct, they came t ous, and they will go to you; just go on and do business and then you will find the trade looking after your business. We captured the trade in the Annapolis Valley, in the Island of Cape Breton, in Cumberland and Pictou Counties, so you see our reputation for large handlers of goods has spread and this advertises our Company. We have never yet had anybody to place their finger on our supply department and say, "We can purchase cheaper elsewhere." You have to hold your people together, you must give them commercial benefit, because co-operation can only be worked out by receiving a benefit therefrom. Some of our people received a benefit, then turned around to us and said, "We can sell apples and get more than you can." They sold to some Ontario purchasers and we saw the people go away without paying these parties for their goods. We sold our apples and got our money. Our object is to give good value in selling and our object in buying is to buy as low as we can and handle the article at as small profit os possible, consistent with business. We do everything on an absolutely cash basis. We take a note signed by the Directors of every Subsidiary Company and in that way we are able to do business on a basis of 6%. If we want $500,000 we pay 6%, but we take absolute protection from our membership. We allow our 23 Companies to give us a Director's note, with interest at 6% and $1.00 a ton added to the first cost. A month after the goods arrive, when we get all the fertilizer for the season, we take a note for four months (it may be renewed until the people get something for their products) and that is carrid on and paid for from next year's crop. Every year on the first day of April every dollar's worth of paper we carry is paid up; we absolutely enforce that rule. Only one year we carried over $17,000, through an error on the part of an official. But we make it a rule that everything is paid on April first and then we start over again; if you do not do that you have trouble, you get into financial difficulties, but in this way we are able to obtain any reasonable credit we require from our banks and give absolute satisfaction to our members, which is the greatest asset of the business man. Very often the one whom he helps the most does not remain his friend, because he has to embarass him to get his pay. Instead of doing that, we say you must pay up when the bill is due, so that we have so far, on every occasion, every year, had a balance in every Depart ment on the rigt side of the ledger.

In the first place we had a special act prepared for the organization of a Subsidiary Company, which enabled five or more members to gather together, and we registered free of charge. Now the amount of capital required by a susidiary company, if they erected a $5,000 warehouse they would incorpoate for $10,000 and have half of that subscribed; they might pay up $1,000 or $2,000 and put up the rest; that the principle on which our subsidiary companies are organized. During the seven years our organizations have every warehouse paid for.

I have tried to instill in the minds of our people this one fact, that when organizing they should commence to pay on their own subscribed stock; if it were only 5% a year or 10% a year, they should pay something every year. We did this, with the result that the United Fruit Companies of Nova Scotia and its subsidiary Companies are pretty wealthy at the present time, but if they look back and see the small savings effected, they wil lrealize how this has come about.

Co-operation in Nova Scotia has been a wonderful success, it was the first organization that was ever able t ohold for more than five years any body of our farmers together. We have had all kinds of things started, I have been interested in them myself—but not one of them is in existence today, with the exception of the Farmers' Nnion of Berwick, which is a Joint Stock Company and run for profit.

Now I do not presume to give you gentlement advice, I have given you a history of our workings. I have been educated only in the common schools, I have not been in college, for which I am osrry, but I am going to say this, that our people have imbibed during the last seven years a lot of horse sense, or common sense. They have learned that their first and best interest is thmeselves; they have learned to cut out a lot of jealousies that existed in the meeting. We call a Directors' Meeting of 43 people, and our Board of Management of 5 more. We have had five or six or seven meetings during the past two or three years and we have never had an unkind word spoken or an unjust criticism passed,—what we deo invite is stranght, honest criticism. Our meetings have become businesslike because the people have become educated to the fact it is to their interests to conduct business along business lines. We have a few companies who try to make trouble; we pay no attention to them, but let the majority rule,—that is one thing you must do—let the majority rule.

I hope if you become a co-operative company, working for the benefit of the individual you will not get too deep into politics—that is a matter for you people to work out for yourselves. As far as we in Nova Scotia are concerned, we steer absolutely clear of politics, we do not say one word about that, we simply pay attention to our business of marketing the produce of the people and getting the most we possibly can for it, of purchasing their supplies and giving them to the people at the least possible price, and they realize the benefit they derive from it—otherwise the business we started with about half a million dollars in the first year would never have grown tot what it will be this year, closely approaching two million dollars—which is the largest year we have had

I hope that we, the Agricultural interests of Nova Scotia, of New Brunswick and of every province in Candaa will ere long realize the fact that they are the ruling body, that they are the people to hold the balance of power and that by wise and judicious judgment they can do more toward levelling the interests of Canada than can any other profession or trade in existence at the present time. We are independent enough, but we cater too much to individuals. If we gave our organization every effort possible we would be very much better than to go on finding fault with a man because he is making money. If a man gets 25c per bbl. more for his goods, that is his business; but, when we stop it, that is our business.

We purchased for this year's supply in seed nearly 40,000 bbls. of grass seeds. I am going to give you a little tip on seeds. When the United Fruit Companies came into existence in Nova Scotia seeds that were on sale in nine-tenths of the merchants places were No. 3 seed; there might have been an occasional quantity of No. 2. We made a study of the seed situation. We had Mr. Moore, of the Seed Department, of Truro, make our selection of 150 samples of different seed. We purchased the best grade of No. 1 seeds we could purchase, and a great many of you know that there are three or five different grades of No. 1 seeed. A man might buy No. 1 seed for $18.00 and he might buy it for $10.00, so I say exercise the very best judgment you possibly can in connection with the selection of seeds.

Gentlemen, I thank you for your very kind attention.

Peas and Oats

(Experimental Farms Note.)

Oftentimes the failure of the regular hay crop or the necessity for an increased amount of forage is the cause for much speculation in determining a practical means of providing for the deficit. As an emergency crop there is none more suitable than a mixture of peas and oats. In fact, it is a valued dual purpose crop with those who have had experience with it since it is equally suitable for soiling, hay silage and grain purposes. The classes of crop, namely peas and oats, making up the mixture are admirably adapted for growing together.

They both have the same seasonal and climatic requirements and mature in about the same number of days. Besides the oats support the pea vines which facilitates the harvesting and curing of the crop.

At the Central Experimental Farm and several of the branch Farms and Stations this crop has been utilized extensively as a soiling, silage and hay crop as circumstances demanded. It is usually grown as a catch crop wher the hay has failed or in a regular rotation of, first year hoed crop, second year peas and oats seeded down to clover and, third year, clover hay. Exception may be taken to peas and oats as a nurse crop which is ordinarily justfiable where the crop is allowed to ripen forr grain. On the other hand, where the peas and oats are cut in the gren stat thus being removed early in the season, the disadvantage as a nurse crop for clover is practically eliminated. In the experience of the Experimental Farms the stands of clover on areas having peas and oats as the nurse crop, are practically equal to other stands of clover grown with nurse crops of wheat, barley and oats.

The cultural treatment of the soil for a crop of peas and oats under regular cropping conditions is similar to that for ordinary grain crops. Fall ploughing, disced thoroughly in the until a deep, mellow seed-bed is prepared, proves most satisfactory. Sown as a catch crop where new seedings of grasses and clovers fail, a fairly satisfactory seed-ben may be prepared bp either shallof ploughing or by thorough discing, depending on the compactness and nature of the soil. IOlder meadows or exhausted sod areas can only be prepared for crop by ploughing and discing. In sowing, the ordinary seed-drill is used. The peas and oats should be mixed thoroughly before being placed in the sed-box of the drill and from time to time as sowing goes on the mixture should be stirred with the hand. Otherwise the peas will work down through the oats and be sown first, leaving the uast part of the seeding almost pure oats. The most suitable proportions of the mitxure are equal parts by weight, sown at the rate of at least 3 bushels per acre. Suitable varieties include Golden Vine and Prussian Blue pea and Banner and O.A.C. No. 72 oats.

Cutting for soiling may take place before pods form on the pea vines and the oats begin to head. Saved as hay. cutting begins as soon as pods are formed and the oat kernels are in the milk stage of growth. This is also the most suitable stage at which to cut for silage. If the crop is not required for any of the foregoing purposes it mal be allowed to ripen to be harvested for grain. Both grain and straw make good feed.

The feeding value of pea and oat hay is high, standing very close to alfalfa and equa to red clover. As silage it is excellent, although it yields less and the cost of production is greater than corn ensilage.

This accommodating crop, so suited to varied conditions, is bound to become better known and more highly appreciated on a greater proportion of Canadian Farms.

Gleanings From the N. S. Dept. of Agriculture

CLOSING DAY AT THE N. S. C. A.

Last year the day was beautiful and the Assembly room at the College completely filled for the closing exercises. It was still war time, and the dominant note in every address was efficiency in war. The address that sticks in the memory was the classic given by Dr. Jas. Robertson. This year the weather was about the worst Nova Scotia could produce; the Normal students were away on Easter holiday, and only a comparatively small number outside the immediate College constituency were present. The exercises, however, were of the same high order, and the addresses of even greater human interest.

In outlining the work of the year Principal Cuming took occasion to pay a fine tribute to the men who had served overseas, and especially to those who had fallen. 150 men who had been students at the Colelge since 1905 had enlisted; 20 fell on the field of honor; 2 won the Military Cross; 2 the Military Medal; 20 received commissions, and several had been mentiond in despatches.

The principal also referred in terms of appreciation to the students who had gone quietly to work as citizens and farmers in the various communities, and the wholesome and stimulatin effects of their lives on the district in which they live.

The first visiting speaker was Mr. D. A. Cameron, K. C., M.P.P. for Cape Breton, a man who has already made his mark in his profession, in politics and recently as the very efficient chairman of the Greater Porduction committee. After fitting reference to our citizen soldiers, and to the movement toward a well considered memorial policy commemorating those who had fallen, Mr. Cameron spoke impressively on personal characted as the basis of good citizenship and the mose effective factor in any real reconstruction.

Col. the Rev. John Pringle, D.D., was the next speaker. Dr. Pringle's name is a household word from Bonanza to Sydney. Everybody knows him and he knows everybody. He never seems to forget a name or a face. A prince of story-tellers, he was at his best. The call of the new day to play the game, to preserve a keen interest in education and every other factor making for good citizenship, to be worthy of their ancestry and comrades, stirred the students to outbursts of applause, and will not soon be forgotten It was a characteristic message from this big, manly citizen of the world.

Brief addresses were given by Dr. Soloan of the Normal College, and by Mr. Ward representing the returned soldiers who have been study at the College of Agriculture in the recent months.

The following is a list of the graduates and prize winners:

Scholastic Diplomas

Douglas Archibald, Newtown, Guys. Co., N. S.
Robert Bishop, Greenwich, N. S.
Philip Bishop, Greenwich, N. S.
Fred Johnson, Greenwich, N. S.
Wm. T. Perry, Butternut Ridge, N.B.
Alex S. Palmer, Berwick, N. S.
J. L. Stoddart, Stoddartville, N. S.
Fred Wasson, Young's Cove Road, N. B.
Walter Wright, Central Bedeque, P. E. I.
Harold W. Colpitts, Lewisville, N.B.

Diplomas

Antoine Leger, Richibucto Village, N. B.
Sylvio Martin, Caron Brook, N. B.
Donald Rogers, Hopewell Hill, N. B.
Earle Weir, Centre Rawdon, N. S.
John Irvin, Point de Butte, N. B.
Alvah McEwen, St. Peters Bay, P.E. Island.
S. W. B. Muir, Shelburne, N. S.

Prize Winners

Governor General's Medal for highest standing in Senior Class—Philip Bishop, Greenwich, N. S.

Prince Edward Island Cup for best judging of Seeds.—Douglas Archibald, Newtown, Guysboro Co., N. S.

E. H. Cox prize, $5.00 worth of books for senior making the highest standing in subjects pertaining to the feeding, care and management of live stock.—Harold Colpitts, Lewisville, N. B.

E. H. Cox prize, $5.00 worth of books for junior making the highest standing in subjects pertaining to the cultivation of the soil.—George Wood, Carters' Point.

FIELD CROPS COMPETITION

The prize lists for the Nova Scotia Field Crops Competitions are now going to press. Those interested and wishing to have a copy should write to Mr. F. L. Fuller, Truro, N. S. In addition to the usual prizes for seed wheat and oats a new department is being added this year in a series of prizes for seed clover. The present high prices should stimulate production of this commodity. There are at present two hulling machines in the Province, one privately owned, and one owned by the Government which is at the disposal of groups of farmers who grow clover anywhere in Nova Scotia.

There is is also a special prize list this year for the best acre of turnips, for which the Halifax Board of Trade generously donated the sum of $200.

It should be carefully noted that in order to qualify ofr entry in the Field Crops Competition for 1920 in wheat and oats it will be necessary to use registered seed on the field to be entered. The first steps toward fulfilling this condition should be taken now.

TESTING SEED

A very striking demonstration of the necessity of being sure of the vitality of the seed grain was recently made at the College, Truro, N. S. A certain dealer had imported a quantity of No. 2 Canadian Western oats for feed purposes. The grain looked so good that he thought it a pity to feed it when it might be used for seed. Wishing to make himself sure he forwarded a sample to the College for germinaation test. Only 20% germinated. Had this man depended on appearances and sold or used the oats for seed, it is easy to imagine the resulting stand of grain, with only one seed i nfive capable of growth under the most favorable condition. The buyer of such grain for seeding purposes would be paying just five prices for his seed.

The incident brings into prominence one of the matters to which the College has been repeatedly calling attention recently, i. e., the necessity of our farmers depending less on imported seed, and giving more attention to the growing and cleaning of their own seed grain. Our own Maritime season is much more dependable for the production of seed of strong vitality than that of the West. . Besides, it is now well proven that the acclimated article is more reliable than that which is grown under different conditions. But the immediate lesson for this season is that tests should be made of seed grain. Plant say a hundred seeds in a box, and keep conditions of moisture and warmth as nearly natural as possible, then count sprouts.

THE SCRUB BULL

The big piece of work now ahead of breeders of both beef and dairy cattle is the improvemenut of the stock in these Provinces. A single instance of its importance may be given. The average milk production of the Nova Scotia cow is about 3,500 lbs. per year. In the Holstein herd at the College, Truro, there is not an animal with a milk record of less than 14,000 lbs. per year. The scrub eats as much as the thoroughbred. Enough said.

The scrub cow is the daughter of the scrub sire, the greatest obstacle in the way of stock improvement. The Nova Scotia Farmers' Association at its annual meeting in Truro last March unanimously passed a resolution asking for the local Government to enact legislation for the control of the scrub bull nuisance. An Act was accordingly introduced in the legislature for this purpose. Unfortunately for the live stock interests strong opposition developed, and the Bill got the three months' hoist.

A new Bill, however, is to be introduced immediately, much of th same character ,except that its operation is to be confined to the districts in which there are agricultural societies in operation. Since the demand has been very strong from such societies for such a law it is presumed that this bill will go through. Nevertheless live stock men throughout the Province should take advantage of every opporunity of pressing it, and should urge their representatives to stand behind it. This Bill, while for the present limited in its operation, will prepare the way for more widely effctive measures later on.

AN OBJECT LESSON IN CO-OPERATIVE DAIRYING

A fine demonstration of the co-operative principle was recently given at the Scotsburn Creamery. After a short series of meetings at centers where patrons could readily be grouped, delegates from each of these communities on the invitation of the management gathered for a two days' conference at Scotsburn, N. S. The supervisor of cow testing, Mr. H. R. Brown, and Dairy Superintendent W. A. MacKay, of Truro, were present.

The whole two days were spent in investigating and observing the processes in every branch of the work, the first day more particularly on the scientific detail of weighing, pasteurizing, churning and the various mechanical tests. The second day the whole plant was in operation and 2,100 lbs. of butter manufactured. This is only an ordinary day's work at this season of the year.

In the evening the delegates and th general public of Scotsburn gathered in the Hall, and fine addresses were given by Messrs. Brown and MacKay on Herd Improvement and Feeding of the Dairy Cow, respectively. A most interesting talk was given by Miss Tina J. McCarthy, the travelling Rural Science Teacher. It was felt by all that the whole conference will have lasting effect in fostering co-operation between the Creamery Company and its patrons, promoting the interests of both and creating a feeling of confidence and good fellowship that is wholesome for all concerned.

A HINT TO SHEEP MEN

While all kinds of live stock products bring the farmer higher prices than in pre-war times, probably none has shown such an advance as those of the sheep flock. One result is a considerable increase in the sheep population of the Maritime Provinces. No one need be afraid of over-doing it. There is abundant room in the fields and barns of these provinces for a vast increase yet, as well as a very greedy market for wool and mutton.

With the revival of interest in the sheep industry has come an improved system of marketing the wool. Last year approximately 80,000 lbs. of wool from Nova Scotia alone were sold through the Canadian Co-operative Wool Growers, Ltd., and on the average those who marketed their wool through this organization realized 10c per pound more than those who sold in the ordinary way.

Plans are now being laid by this association for a much larger business this year. Depots for the buying and shipment of wool will be established at advantageous points all over Nova Scotia. The director of the enterprise for Nova Scotia is Mr. S. A. Logan, of Amherst. The Canadian Co-operative bought wool last year in every province of the Dominion and will doubtless do likewise this year on a still arger scale.

There is some uncertainty, of course, as to the price wool will bring this year. Probably it will be slightly lower than last year, but in any case it will be far above pre-war prices. It will pay owners of sheep to keep in touch with the co-operative representative in their district. Information may be had at any time from Mr. S. A. Logan, Amherst, N. S., The N. S. Department of Agriculture, or the head office at 128 Simcoe St., Toronto.

USE OF CLOVER, GREEN OATS AND VETCHES FOR SILAGE

We wish to impress upon the live stock men of Eastern Canada the necessity of making plans to have sufficient green forage crops available to fill their silos in case their corn crop is not up to the standard, as happened last season.

We do not for one moment wish to discourage the raising of corn, as corn is one of our most valuable forage crops in many section of Eastern Canada. Corn is also a crop that is very useful for the cleaning of our fields of weeds and putting the soil, if cultivated properly, in the best of shape for the succeeding crop.

But in Eastern Canada corn is very uncertain in certain sections on account of the late frosts in spring and early frosts in autumn, which prevent its maturing sufficiently to make the best silage. However, there are other crops that thrive and do very well in these districts and that make the best of silage when harvested at the proper time. One of these is our red clover plant which makes very palatable and nutritious silage. If the first cut of clover is made about the last of June for hay, the sceond cutting can be utilized very nicely for the silo, and another point in favor of using the second cutting for silage is that it is very often difficult to dry it sufficiently to make the best of hay at this late season.

Oats and vetches can also be grown very successfully for silage; ;sow at rate of two bushels of oats of a strong growing stiff straw variety such as Storm King or Alaska, one peck of spring rye, and one-half bushel of vetches per acre, cut in autumn as soon as beginning to show any signs of turning. This crop can be cut with a binder or with a mowing machine and raked and put into silo as soon as possible after cutting, as it will conserve better.

Our experience at the Lennoxville Station has been that there is more milk in clover, oats and vetches silage poudn for pound than in immature corn. Clover silage is much relished by stock and has proven very useful in conjunction with other feed for hogs.

In using clover or oats and vetches for silo it is best, if possible, to run through cutting box and harvest before the cron, as the weight of the corn on top will cause it to settle properly and keep it in the best condition possible.

THE MARITIME FARMER

And Co-operative Dairyman
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Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

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DATES OF ISSUE.

May 6-27
June 10-24

MAY 6. 1919

HONOR THE BREEDER

Stockmen are born, not made; yet how many of the efforts of these born stockmen are veiled behind the moneyed man who buys his honors in the exhibition ring. There is a wide difference between the value of the work of the patient breeder and that of the buyer who exhibits his stock. The former has to make the needful dollars by parting with his stock, but the price he gets falls short of the reward he deserves for his best and successful efforts. He is the chief corner stone in the industry and the hallmark of quality should be stamped on his efforts with some publicity.

Fair managements would broaden their basis of usefulness by recognizing with an honorarium the breeder of the champion animal or any outstanding winner. The imported article could be exempted, but every Canadian bred animal, whether horse, cow, beef steer, sheep or pig, that comes out on top should carry, with its honorable career, the name of the successful breeder. Wherever this policy has been adopted it has given renewed vigor to the industry. It has encouraged the young aspirant stockman around the small farm, where many of the best stocks, in the history of every breed, have had their origin.

The buyer of stock for exhibition purposes is also an adept at feeding for exhibition; he rarely considers the conserving of vitality, and sterility amongst his stock, is common. The encouraging of this element in stock-showing makes the Fair ring the scrap heap of much good blood, and an untimely end to the patient labors of the studious breeder. The beef classes of cattle have many of these specimens, as well as sheep and pigs. It is pleasant sailing for the hard fed mare, that fails every time to have progeny, to gain prizes under such show-ring conditions, that gives her the coveted honor in a breeding class, but what value is she to the breed she represents? The holder of the reserve honor should get the blue ribbon when the champion fails to prove fertile. This method of allocating honors to whom honor is due has been fruitful of much good in the Royal Show in England and Highland Show in Scotland, and the overfed breeding animal has disappeared from the ring; where also the man who breeds the winner can share in the fame attached to its history.

DEMONSTRATION FARMS

For many years there has been a greater or less demand for Demonstration Farms here and there over the Province. This demand has largely lost its point through the fact that in most communities there are already one or more farms which may be regarded as models. These have been developed in the best possible way,—through the initiative and industry of men who have availed themselves of all possible information from Colleges, Agricultural Depts. and other sources. While conditions on these farms may not be ideal, they embody a good working adaptation to local circumstances, and offer a valuable lead to their neighbours.

There is a saying in the Book that is worthy remembering in this connection; "Wisdom is before him that hath understanding, but the eyes of the foolish person are in the ends of the earth." Every farming community can profitably take advantage of the intelligence and progressiveness of its own members. One man is successful along one line, another along another. If the experience of each leader in his own line is made available to the whole community through Associations, etc., the demonstration idea will be perfected.

OPPORTUNITIES

Opportunities are like flashlights. They suddenly reveal us to others and also to ourselves. We all long for opportunities. We have a feeling that they might disclose some very fine qualities and a high order of ability which we think we possess, and which the world has not discovered. But the trouble with opportunities is that they seldom come properly labelled. Anyone would grasp them if he knew what they were, but they are quite likely to appear to our vision either as insignificant trifles or as disaster and misfortune. It is in the courage that grapples with these last and determines to get the best of them that many of earth's greatest opportunities have been disclosed.

A MARITIME DAIRY SCHOOL

An important resolution was discussed and passed unanimously by the Daiyrmen's Convention, recently held at the College of Agriculture, Truro, calling for the establishment of a Maritime Dairy School. For the past three years the staff of the College has conducted such a school for a short term and on a small scale. The work done has been so valuable and so highly appreciated that there is now a strong demand for its extension. The expense has been provided by the three Provinces in Conjunction.

It is the universal feeling among the Dairying interests that the best method of expending this educational movement is by the organization of one central, well equipped institution. Such a school would probably arrange a two years course, and would do much better work than would be possble in several small, ill-equipped and short term schools.

The terms of the resolution referred to indicate one central school situated at the College of Agriculture, where there already is much of the necessary plant in the way of provision for instruction in Chemistry and bacteriology as well as a herd of cattle to supply the practical demands of the course. The expense would be borne by the three Provinces. In this section of Canada, where the Dairy Industry is sure to be the dominant agricultural interest of the future, the project will doubtless find as hearty a support as it subsequently received at the Prince Edward Island Central Institute and the New Brunswick Farmers' and Dairymens' Association.

TAXES

Friends and neighbors, the taxes are indeed very heavy, and if those laid on by the government were the only ones we had to pay, we might the more easily discharge them; but we have many others, and much more grevious to some of us. We are taxed twice as much by our idleness, three times as much by our pride and four times as much by our folly, and from these taxes the commissioners cannot ease or deliver us by allowing an abatement.

Have you ever estimated the toll taken from your income by scabby and diseased potatoes being used for seed; by smut in grain; by early and late blight; by vermin on your sheep and cattle; by not castrating your ram lambs; by slacker cows; by allowing your farm machinery to rust and rot in the open instead of housing them properly and keeping them well painted and oiled; by the extra steps you have to take owing to badly planned arrangements and by many other leaks that are within your own power to remedy.

THE VALUE OF GOOD SEED

Most of our readers fully realize the tremendous advantage of good seed. The proper time, of course, to select good seed is by personal inspeetion before the crop is cut. At that time one can see length of head, average number of kernels per head, uniformtiy of crop, quality of straw, etc., and consequently be able to make a much better selection. This, however, is advice that many may be able to put in force next fall for the following year's seed, but, for the present, all that can be done is to select good, plump grain of a high germination test and as free from weed seeds as possible. If it does not come up to a reasonably high standard, make free use of the fanning mill, and use the small kernels for feed. It is exceedingly important that the very best seed possible be secured. so make the very best selection possible from that which is available.

* * *

Advertising in the Maritime Farmer never fails to give results. If you have quality livestock for sale give it a test. At two cents per word per insertion you will find it the quickest, cheapest and most effective way to sell and get a good price. Every issue is read by 12,000 farmers.

* * *

The good producing cow wants a square, full ration every day, and she can't get it from pasture—as the seasons run. The good farmer neither confines himself nor his horse, nor even his hog, to the food that grows each summer day. Why should he his cow? He will pay dear for it if he does.

* * *

The common cow is the cow for the man who is not a better dairy man than she is a dairy cow.

* * *

No bull over twelve months of age should be allowed to go without a ring in his nose.

* * *

Fall fresh cows generally yield from 10 to 15 per cent. more milk in a year than spring fresh ones.

* * *

Wealth does not come by the most diligent saving, but by the most diligent producing. Men and nations who pinch the pennies hardest are never the richest.

THE FARM WELL

Of the many types of wells in use, the dug well is perhaps met with most frequently. This is especially true where the ground water lies at no great depth and occurs in no clearly definde channels but seeps through the soil slowly, so that a well of comparatively large diameter is needed to provide storage. It meets the requirements of a large reservoir from which considerable water may be drawn at one time, as is sometimes necessary when watering cattle, filling again when the drain upon its water ceases. It also has the advantage of cheapness, in that it can be dug with ordinary farm equipment and farm help, without the employment of outside labor or machinery.

Unfortunately, with all its advantages, the dug well is likely to furnish the most unsafe water supply of any of the wells in use. It is the most open to contamination. The two principal sources of contamination are the impurities, insects, small animals, etc., gaining entrance through the covering and upper few feet of the curbing, which is frequently of loose masonry construction; and impure surface water, carrying filth in solution, as the washings of the farmyard during and after a heavy rain, seeping down into the well. Again, unfortunately, the handiest location for the well, near the back door or barn, puts it in a position where it is most likely to be polluted, so that too much precaution cannot be taken to insure its protection, a pure water supply being a long step in the direction of countryside health.

Choosing a Site for a New Well

In digging a new well, therefore, particular pains should be taken in choosing its location. Mention has been made in a previous paragraph of the ground water from which the well receives its supply. This is not standing water in the soil, as many suppose but really a river or drainage system, nearly as well defined as the system with which we are familiar on the surface, moving slowly toward the sea by a more or less direct route. The principle differences between these underground water supplies and the surface streams are the size and the rate of flow, the undergrond water flow being more nearly comparable to an immense stream which is so filled with gravel and other debris that no water appears at the surface, but through which it gravitates slowly on its course to the ocean. The source of this ground water is of course the yearly rainfall, and this may work through the soil for a long distance before it is tapped by a well. In general, the flow of these underground currents follow the surface contour of the land so that advantage of this fact can be taken when locating a new well, putting it in a place where the water that it is likely to receive comes from an unpolluted source.

In connection with the locating of a new well some men take into consideration a so-called "safety distnce" varying from 100 feet in the case of a tight soil, as clay, to 200 feeet or more in the case of the more open soils, as the sands, through which water percolates more rapidly. By this is meant that if the well is located the above distances from a source of pollution of water will be purified before reaching it by filtering through the soil. As a matter of fact water is so purified, but the distance is more or less a problem of judgment rather than one of actual measurement, because of so many factors of slope, type of soil, source of suspected pollution, etc., that no measurement with a rule can give reliable results.

Some men in digging take the depth of the wells as the "safety distance" but in the case of a shallow well, as a dug well is likely to be, this is obviously unreliable.

As already pointed out, a well is contaminated chiefly by material and impure surface water entering the top and upper few feet of the curbing. This is shown to be a fact in the case mentioned, the influx of surface water being so great in this case that it caved in the well by washing away the supporting earth back of the wall. It is said that the filtering of water through 10 feet of clean earth will purify it. Of course this does not apply to extraordinary cases, but only to cases where the pollution is slight. A method then of making an ordinary well safe is first to secure a location on high ground, or at least on ground the surface of which slopes in all directions from the well. The addition of a tight concrete cover, which because of its durability is really the cheapest material from which to build such a platform, tightly joined to a watertight curbing which should extend down into the ground for at least 10 feet and preferably further, prevents polution from the top. This watertight curbing, as will be discussed later, may be made from concrete or tile with cemented joints. As a further precaution against the entrance of surface water, tightly rammed and puddled clay should be placed around the upper 10 feet of the curbing, and should extend out in the form of an apron. This will prevent waste water from the pump from seeping down the sides of the curbing and re-entering the well, as well as preventing the entrance of any surface water by the same route. It, if properly made, is insurance that all the water entering the well has passed through at least ten feet of soil.

Th Material to Use in Building

The choice of concrete or tile for the well lining rests largely on the use to which the well is to be put and on the type of soil in which it is dug. If dug in a type of soil in which there are clearly defined underground water pasages, and the well taps these so that there is a constant stream of water flowing through the well, insuring a supply of water, the tile will make a satisfactory lining, as storage room for water is not a requirement. If in another type of soil, where the water was obtained largely by percolation or seepage, the tile might still be satisfactory if the well was to be used for no other purpose than household use. On the other hand, if the well was to be used for watering cattle or other purposes, where a heavy draft was likely to be put upon it for short yeriods of time, a larger diameter would be needed to intercept more of the ground water as it seeped along, and to provide a larger reservoir for storage, increasing the diameter or depth being about the only means of increasing storage capacity, as the water cannot be made to rise above the water table.

The method to be used then in repairing a well will depend upon the points just outlined above, particular attention being paid to the features making for pure drinking water and safety, as from the description given of this well it is quite evident that considerable surface water found its way into the well before its purchase. Building the top of the well up above the surrounding land and then grading up to it is effective in turning away surface water when the ground slope is wrong in the first place. Ventilation should be provided by a pipe bearing a screened opening facing downward, as shown, and if these precautions are taken in locating, digging and constructing, as well as cleanliness about the well, remembering that it is a drinking vessel and keeping it as clean as the pail with which hte water is carried to the hous, as good good a suppyl of water as the country will afford may be expected.

EVERY FARM SHOULD HAVE A SILO

There are thousands of farmers in this country who need a silo and have needed it for several years. They either have not answered this question or nave answered it in the negative, or it may be they have postponed the matter, or felt that they could not afford the investment. The silo should be considered a part of the necessary equipment of a dairy or stock farm, for it has to do with the success of the business.

The largest item of expense in keeping a herd of cattle is the feed bill, and therefore it is the first question dmanding our attention. Labor comes next, but the feed bill is generally twice that of labor, and the silo strikes directly at this overhead cost of feeeding making a big saving in the cost of feeding. It also produces better young stock and increases production.

Practicaly all of the great milk and butter records of the country are held by cows that have been fed silage. Large, growthy, vigorous young stock are easily and cheaply obtained by the liberal use of silage. If you have a silo you may need to answer this qustion in order to find if you need another. It is surprising to find on our best stock farms not one but three o rfour silos.

It is difficult to determine accurately the saving made by the silo when the cost of the ration is considered for so many conditions enter in which makes a variation in the result, but it is safe to assume that from ten to twetny-five dollars can be saved in the cost of feeding a cow one year by the use of the silo.

It is also safe to say that with silage the cost of butter fat can be reduced from six to twelve cents per pound and the cost of producing a hundred pounds of milk from thirty to fifty cents a hundred pounds of beef from a dollar to two dollars, and a hundred pounds of mutton from seventy-five cents to a dolar and a half. With such a saving it can easily bt figured tha ta silo would soon pay for itself where ten or twelve cows are kept.

The convenience of the silo is well recognized by men who have given it a thorough trial. By properly arranging the silo and the barn it is possible for one man to feed forty cows in thirty minutes, and the work can be done with ease and without the use of a horse or wagon, The silo can be considered a time and labor saver.

The silo is the most economic equipment for the storing of forage. When space is considered, eight times more feed can be kept in a silo than in a hay mow. It would be difficult indeed to construct a barn which would hold two or three hundred tons of forage, while it is an easy and simple matter to put up a silo that would hold this amount. There is less deterioration in holding over silage than in holding over dry fodder. I have seen excellent silage that was six years old and this same silage was fed successfully to cattle that seemed to relish it more than new silage.

The silo stands ever as an insurance against forage failures, especially damages by frost and drought. Any kind of feed which can be grown can be saved in the silo though it may not mature a grain crop. It makes farming more secure and warrants a cheap and excellent forage for all kinds of stock in both winter and summer seasons.

The heavy bulky feed on a stock farm should be produced at home, and the concentrates, such as grain, and mill feed, can best be purchased. With the fertilizer, which is always found on the stock farm, big crops of forage can be grown. It is not uncommon to see corn fodder produce as much as twenty tons of silage per acre. This feed grown close at home, can be rushed into the silo and the bulky ration for the years is supplied.

Silos should be provided for both winter and summer. Consider carefully the earning of your pasture. Six times more feed can be furnished on pasture ground if it is put in the form of crops and ensilage. The pasturing of land worth a hundred dollars and up per acre is questionable.

The summer silo in many sections is needed more than the winter. It is better to build two or three silos than one big one. Like canned fruit, make your silos so you can feed off a good layer each day and thus keep the forage fresh and sweet.

Why a silo? can be answered by considering all of these items, considering the cost of production, the cost of your land, the earning power of your farm. Scientifically stated, the silo will lower the cost of digestible cargo-hydrates, it will make your acres earn more, your stock earn more, your work easier, your storage greater, the production of your cows higher, your faem richer, and with these advantages you will derive more pleasure and profit from your labor.

SEED TREATMENT FOR SMUT OF OATS

The oat crop of Canada is estimated at about 400,000,000 bushels. The average loss from smut, usually placed at four to six per cent., means the destruction of about 20,000,000 bushels, a loss which can easily be prevented by seed tratmnt.

Oat smut is easily recognized as it destroys the kernel and hull and sometimes the chaff, changing them to a black dusty powder composed of millions of spores, which are scattered by the wind and which lodge on the sound oats in the vicinity. When this grain is sown the smut spores germinate and infect the young seedlings. The smut develops inside the growing plant and reduces the kernel to a mass of spores instead of sound grain.

The object of seed treatment is to kill the spores lodged on the grain. The safest and best method is to treat the seed with a solution of formaldehyde by one of the following methods, given out by the Experimental Farm, Ottawa.

Dipping Method.—Mix well one pint of formaldehyde (formalin) in forty gallons of water, putting the solution in barrels or casks. Put the seed in coarse bags that the solution will readily pass through and drop into the casks allowing to soak for about five minutes till every grain is wet. Remove the bags and allow to drain on slats into the casks as the solution may be used several times. Then pile the grain on a clean floor and cover with sacks of canvas for two or three hours. Dry the grain by spreading on a clean floor and stirring now and then. Sow the grain as soon as it will run freely or if necessary to store, dry thoroughly as damy seed will mould or sprout.

Sprinkling Method.—Pile the grain on a clean floor or grain wagon and sprinkle with the solution, using a sprinkling can, shovelling the seed fro mone pile to another so that each kernel will be thoroughly wet. About a gallon of solution will be required for each bushel of grain. Cover the grain as in dipping method and dry.

Do not allow the wet grain to freeze as it might injure germination. When the grain has been treated and is damp and swollen, the rate of seeding should be increased about three-fourths of a bushel per acre. Any bags or receptacles used for holding the treated grain should be disinfected in the solution of formaldehyde.

Dry Method.—This method has been recently introduced but requires more care. A solution consisting of one pint of formaldehyde to one pint of water is sprayed on the grain while it is being shovelled over on a clean floor or canvas. A sprinkling can must not be used, as a sprayer that will deliver the solution in the form of a mist is necessary. In this method there is no danger of freezing and no drying is required. It should not be used for wheat except in an experimental way. One quart of the solution will treat about 50 bushels of seed.

BEAN ANTHRACNOSE

By G.C. Cunningham, B.S.A., Officer in charge Field Laboratory of Plant Pathology, Fredericton, N. B.

Bean anthracnose, sometimes called pod spot, and incorrectly called rust, is a very common and destructive disease, particularly in Quebec and the Maritime Provinces and, some years, in Ontario. It is almost invariably present but not always severe enough to be noticeble. It attacks the stem, leaves, pods and seeds, causing dark spots, resulting in greatly decreased yields and an inferior quality of crop. It is caused by a microscopic fungus carried chiefly by the seed. It can be greatly reduced, if not controlled, by taking proper precautions.

Symptoms

Filed Appearance: When infected seed has been planted and the weather is wet or cloudy, the disease develops rapidly. Skips or vacant spaces occur in the row where the seed has failed to germinate or where the young plants have died and completely disappeared. Frequently considerable portions of the row may be marked only by bare stalks, or small, sickly plants bearing a few faded leaves.

However, an abundance of foilage does not necessarily mean freedom from anthracnoses. Infection under favorable climatic conditions may spread rapidly and become serious even after the plants are quite large; under such conditions it is not noticeable without carefully examining the stem, leaves and pods.

On the Seed: The seed may be slightly or badly affected and in se vere cases appears rotted or weathered. Slightly infected seed may show little or no discoloration or only a light brown stain. Badly infected seed shows well marked, dark brown or black spots varying from the size of a pin head to a degree where the whole seed is involved. In such cases the seed coat is usually ruptured and the spots more or less sunken, with a grayis centre, indicating that the invading fungus is producing fruiting bodies. Badly infected beans are unfit for table consumption and even the slightest spot injures the bean for seed purposes.

On the Cotyledons (fleshy seed leaves): Diseased seed invariably produces diseased cotyledons; one or both may be affected. The lesion or canner is of a brownish color with a definite outline and involving all or part of the cotyledon. If damp weather pervails the diseaser area enlarges and the pink spore-masses of the fungus are produced in abundance.

On the stem: The fungus may spread from the cotyledon to the stem, infecting and destroying the growing poit, leaving a bare stalk. If the stem infection takes place early and conditions are favorable, the stem may rot off at the surface of the ground and disappear entirely. Infected stems show well-marked, brown or black, elongated streaks. Severe stem infection practically prevents the plant from setting any pods.

On the leaves: The disease appears on the lower side of the leaves as black streags on the mid-rib and veins. This condition sometimes results in a puckering of the surface. The leaves, particularly when the petiols are affected, turn yellow and fall prematurely, leaving small, weak plants incapable of producing a maximum crop.

On the Pods: The lesions are most noticeable on the pods, at first as minute, dark-red spots, which rapidly enlarge and become esunken or saucer-shaped, with a definite dark-red or black border. The sunken appearance disappears as the pods become mature and dry. In other cases, when infection has been extensive, the numerous smal lesions coalesce, giving the pod a brownish, black-pitted appearance. The centre of the larger spots may be brown, black, pink or grey, depending o nthe age-condition of the fungus.

Causal Organism

Bean anthracnose is caused by the fungus Colletotrichum Lindemuthianum Saac. and Magn. The vegtative mycelium consists of hair-like tubes, at first colorless but later brown; invisible to the unaided eye except in clusters or tufts such as are sometimes seen in the centre of old lesions. A net-work of this mycelium develops beneath the epidermis of the infected spot causing the characteristic appearance of the disease, and later produces small erect branches or conidiophorees bearing the elliptical or kidney-shaped spores, stuck together by their mucilaginous envelopes. In masses the spores are pink or cream-colored. These spores are scattered bp numerous means to other parts of the plant and even considerable distances to other plants. If there is a a supply of moisture, they germinate immediately by sending out one or more germ tubes, which enter the healthy tissue, and in turn its mycelium develops, producing a fresh lesion and a new generation of spores.

Life History

The fungus passes the winter in a dormant condition in the seed, in diseased bean refuse, or in the soil, but chiefly in the seed. The bean seed upon germination is pushed above the ground, but halves forming the cotyledons or rudimentary leaves, which serve as a primary source of food during germination and until the plant has become established. Consequently, infected seed invariably produces infected cotyledon. The moisture taken up by the seed during germination is sufficient to enable the fungus to commence growth and produce spores. These spores are brushed off on the soil as the cotyledons push toward the surface, and immediately come in contact with the young tender stem, ready to germinate and attack the new plant. The cotyledons remain on the stem for a considerable period after the true leaves have appeared and, if weather conditions are favorable such as plenty of moisture, and not too much sunlight, the spores are produced in large numbers from diseased cotyledons. These are washed down the stem bp rain and spread by other means to all parts of the plant and adjacent pants. The cotyledons thus serve as the nest, in which is produced the new generation of spores and from which they can most easily be spread.

These spores now attack the leaves and stem, setting up disease and weakening the plants. By the time the pods are setting, more spores have been produced and these new lesions and the pods become infected. The fungus mycelium attacks and penetrates the pods causing serious injury and finally enters the new crop of seed in which it lives in a dormant condition until germination takes place the following spring.

The fungus is also capable of wintering over in diseased stems, old pods and eaves, and if these are applied to the soil the new crop infection will take place. Probably it is capable of living on organic matter in the soil for a few years and, if a reasonable rotation is not practised, infection from soil-carried organisms map be expected.

Loss Caused by the Disease

A conservative estimate of the decreased value of the Canadian bean crop, caused by this one disease, is probably over 10 per cent. In some localities and during some seasons it is undoubtedly much more; many fields have been examined where the crop was reduced by from 50 to 75 per cent. The total annual loss on the dried bean crop alone amounts to over 300,000 busels and to this must be added the loss caused to string beans which are grown in every garden. This loss is manifest in several ways. The first and most important is decreased yield, which loss map vary from little or nothing to almost a complete efailure. Beans from badly and even moderately infected fields are not suitable for seed purposes unless very thoroughly hand-picked, and even then diseased beans are sure to escape. Probably the growers of string beans, where the green pods are used for table or canning purposes, suffer the greatest proportional loss as infected pods are unmarketable.

Spread and Development of the Disease

The disease, as previously stated, is propagated from year to year chiefly by planting diseased seed and to a lesser extent by using infected bean refuse as fertilizer, or failure on the part of the grower to practise a reasonable crop rotation. The spread and development of the disease in the field is influenced to a large extent by the prevailing climatic and soil conditions. During a bright, dry season little damage is caused, but during wet, cloudy weather it spreads and develops rapidly. This is because of three conditions: (1) The spores have a mucilaginous envelope which holds them together when dry and retards their being carried from the diseased lesion to healthy plants by the wind. (2) The spores are produced most abundantly during wet weather. (3) They can germinate and gain entrance to healthy tissue only when moisture is present.

Beans grown on low, wet, or poorly drained soil are usually more severely injured than those grown on high, dry soil. This is probably due to a greater amount of moisture in the atmosphere surounding the plants and to the fact that an abundance of soil moisture necourages an early rapid growth of the fungus contained in or on the infected seed during germination. The same condition is brought about even on high soil if the seed is planted too early and during wet weather.

Healthy leaves become infected by brushing against moist, spore-bearing lesions. Spores are carried from one plant to another by cultivating machinery and on the hands of the picker. It is therefore advisable to avoid working among beans when the foilage is wet.

Control Measures

Numerous suggestions for the control of anthracnose have been made from time to time but these have failed, partly because of their inefficiency but largely due to the fact that the growers have failed to put them into practice carefully and continuously. The chief point to keep in mind is that diseased seed produces diseased plants and those serve as a source of infection to healthy plants. It would seem that a combination of control measures might give the best results. The various steps are here described separtely but should be practised collectively.

Pod Selection: Disease-free seed can be most easily obtained by gathering sound pods from a field as nearly disease-free as is available. In selecting these pods care should be taken to select from plants which appear resistant to the disease, high yielders and true to the desired type.

As an additional precaution, the pods should be immersed in one of the folowing solutions for two three minutes:

(a) Copper sulphate, 1 lb., in 80 gallons of water.

(b) Formalin, 1 pint in 30 galoins of water.

(c) Corrosive sublimate, 1 oz. in 8 gallons of water.

The pods are then thoroughly dried, threshed and the seed stored in a clean sack; care should be taken to avoid reinfection of the seed. If it is impracticable to select enough pods to supply seed for planting the whole of the next year's crop, sufficient should be selected for a seed plot.

Seed plot: A seed plot is nothing more nor less than a plot on which is propogated desirable seed, of pure variety, true to type, high pielding and free from diseases, in sufficient quantity to supply seed for planting the main crop the following year. The very best seed obtainable should be secured for panting the seed plot. This practice has given excellent results with other crops and might pro fitably be practised by seed growers.

Seed selection: Where pod selection has not been practised, and even if it has, the beans should be carefully hand-picked, removing all discolored, spotted, shrunken, or inferior seed before planting. This will not remove all the infected seed but will materialy reduce the amount. Several preliminary experiments in careful hand-selection gave very promising results, not only as a control for anthracnose but as a means of eliminating inferior seed and disease in general.

Seed treatment: Treatment of seed beans has not niven wholly reliable results, probaby due to the fact that the organism causing the disease penetrates deeply into the tissue, and cannot be easily destroyed without injuring the germinating quality of the seed. Nevertheless, after the seed has been carefully hand-selected, treatment will help by destroying slight surface infections. Preliminary experiments with various seed treatments indicate that soaking the seed for three minutes in any of the solutions given above reduces the amount of disease and increases the yield.

Copper sulphate and corrosive sublimate are poisons and beans treated with them should not be used for table purposes or fed to animals.

Spraying: Spraying beans for the control of anthracnose has not proved entirely successful; the disease can be checked to some extent but not controlled. When great importance is attached to freedom from disease such as on a seed plot or where beans are being grown for seed purposes, thep should be sprayed with a 2:2:40 or 4:4:40 Bordeaux mixture, the first application being made when the plants are quite small, and succeeding applications at intervals of one week or 10 days.

In addition to the above practices, the grower should observe the following precautions:—

1.—Select a marketable variety known to show resistance to the disease in his neighborhood.

2.—Plant on dry, well-drained soil.

3.—Avoid the use of bean refuse as fertilizer on the bean field.

4.—Plant beans in the same field not ofetner than once in three years.

5.—Avoid cultivating, picking or doing any other work among the beans during wet weather.

UNITED DAIRYMEN UNITED DIRECTOR'S MEETING

The Board of Directors of the recently organized New Brunswick Dairymen United met in the creamery building, Sussex, on Friday, April 25, with President F. G. Hughson, Corn Hill, presiding.

The chief business of the meeting was consideration of a redraft of the provisional constiution which had been adopted at the organization meeting of the 7th of March. In addition a set of By-Laws, Rules and Regulations were also considered and approved. Several resolutions were put through and arrangements made to pay the first instalment of dues to the Canadian National Dairy Council.

NATIONAL DAIRY COUNCIL

At a meeting of the Eastern Executive of the National Dairy Council held in Ottawa on April 16th, the President, Mr. E. H. Stonehouse, expressed much gratification at the progress of affairs up to the present and was very hopeful as to the future, for the response from the various Provinces shows much enthusiasm and a readiness to lend all the financial aid required. A full report was presented by the Secretary as to the appointments which have been confirmed by the organizations in the various Provinces.

A joint session was held with Mr. Alexander and Mr. Donaldson, members of the Cheese Commission of last year, and the following resolution passed:—

WHEREAS: The exportable surplus of Canadian cheese has during the past two years, owing to lack of shipping facilities, and to difficult financial conditions brought about by the war, been purchased by a Cheese Commission, the price being set in England;

And WHEREAS: Producers fully realize the necessitp for the above arrangements, which have on the whole been satisfactory and the work of the Cheese Commission is much appreciated;

And WHEREAS: The season of cheese production is now opening in Canada and cheese producers are laboring under a feeling of uncertainty regarding intended pdans for disposing of this season's surplus;

And WHEREAS: There seems to be a felling among producers that cheese jrices in Canada should be on a par with prices for the exportable surplus of cheese which mya be available in the United States.

BE IT RESOLVED: That in the opinion of the Executive Committee of the National Dairy Council now in session, representing the various dairy interests of Canada, that should it be decided by the Government that it would be in the best interests of the cheese trade to again have the exportable surplus handled by the Commission, that the price set for cheese in England should be at least equal to that which may be obtained by the United States for cheese exported to the United Kingdom, otherwise we are of the opinion that the Government should immediately take steps to arrange financial conditions and proper shipping facilities for exporting to the United Kingdom and that the market should be left open to private trade.

RESOLUTION: "That Mr. W. H. Dunn of the Borden Milk Company, Montreal, be accepted as representative of the condensary interests on the Council."

RESOLUTION: "That the Milk Power Industry be represented on the Council, and that the appointment of a representative be left to themselves, and that the Secretary be asked to communicate at once with Mr. Trainer."

RESOLUTION: "That the President draft a letter to the Hon. T. A. Crerar, Minister of Agriculture, making a formal request for the grant."

RESOLUTION: "That the action of the President and Mr. Bingham in engaging Counsel and in bringing delegates to oppose the increased rates on cream at Ottawa, Toronto, and Montreal, be approved of and that the expense incurred be paid out of the funds of the Association."

RESOLUTION: "That the thanks of the National Dairy Council be extended the Dairy Commissioner for getting out such a complete report of the National Dairy Conference and distributing is so widely."

RESOLUTION: "That the Government be requested to appoint a representative dairyman on the Dominion Trade Commission."

RESOLUTION: "That the question of appointing a permanent Secretary be left in the hands of the whole executive at a meeting to be held in Winnipeg on a date to be fixed by the President, and not later than July 15th, and that in the meantime Mr. Geo. A. Putnam be requested to continue in his present office as acting Secretarp until the meeting of the whole executive is to be held."

RESOLUTION: "It having come to the ears of the executive that the railways purpose increasing the rates for shipment of milk by baggage. The President and Mr. Bingham to file an objection with the Railway Commission with regard to the proposed increase and to engage Counsel, if necssary."

RESOLUTION: "Mr. J. Walter Jones, Charlottetown, P. E. I., be appointed Chairman of the Eastern Publicity Committee."

THE LEAF RUST OF OATS AND THE BUCKTHORN

(Exeprimental Farms Note)

The Leaf Rust of oats, sometimes called the Crown Rust, is more or less common all over Canada. In some uarts of Eastern Canada it is quite common and causes considerable injury to the oat crop.

This rust is caused by a fungus which develops in the tissues of the leaves and the leaf sheaths of oats and produces on the surface of these parts during the summer masses of yellow spores. These spores are readily carroied about by the wind and spread the rust during the growing season. Later the leaves become dark brown or black due to the masses of dark colored winter spores which are formed just beneath the skin or epidermis. The stem of the oats is not attacked by this rust. If the rusted leaves are exposed to the weather during the winter, the masses of dark spores begin to grow when the warm weather comes in the spring and produce a number of small spores. These wil lnot infect oats but if they reach the buckthorn they attack the leaves and young parts. In a few days masses of yellow spores are formed chiefly on the under side of the leaves. These spores are readily carried by the wind and if they reach growing oats can start the rust. In this way the buckthorn is an important aid in the spread of the leaf rust.

The buckthorn is a shrub or small tree which is planted for ornamental purposes in hedges and lawns. The leaves are ovate in shape with a saw-toothed margin and prominent veins. The berries are black when ripe and remain attached during the winter, the black shining bunches of berries being quite noticeable. The fruit is very unpleasant to the taste. This shrub readily escapes from cultivation and may be found growing wild in many places. There is therefore great danger that it may become common and thus prove a more serious menace than at present to the oat crop.

The leaf rust of oats can attack wild oats and some grasses but this matter has not been fully studied. It is possible that this rust has other means of living over the winter and propagating itself in the spring than by the buckthorn, but whether this is so or not is unknown. It is certain, however, that the buckthorn is an active agent in starting the leaf rust in the early summer on the oat crop. Rust may be found on the buckthorn throughout Canada usually in June before it is found on oats and grasses. This is the great danger of the buckthorn. It starts the rust early and thus gives it time to become widespread before the maturity of the oats.

As it is crtain that the leaf rust is a serious enemy of oats and as there is no doubt the buckthorn aids in spreading this rust, active measures should be taken to destroy the buckthorn and to prevent further planting. It should be replaced by other harmless shrubs which are just as satisfactory for ornametal purposes.

POTATOES—SEED AND TIME OF PLANTING

(Exeprimental Farms Note)

The yield of potatoes throughout Canada would be very much increased if everyone who grew potatoes used seed of the strongst vitality, free from disease. While the variety used is important, the quality of the seed often makes much more difference in the yield than variety.

Seed potatoes from a crop which grew vigorously until the tops were cut down by frost in autumn usually give much better results than those from a crop where the tops dried up in the middle of summer. There are parts of Canada where the former conditions obtain, as a rule, and it from such places that the most vigorous seed is usually obtained.

In 1918 the best seed of the Green Mountain potato yielded at the rate of 387 bushels per acre while the poorest seed yielded only 57 bushels per acre at Ottawa. In the case of Irish Cobbler, the best seed yielded at the rate of 616 bushels per acre while poor seed only yielded 26 bushels per acre, a remarkable differnce. Just as striking differences have been obtained in othr years.

Each grower of potatoes should aim to have a full stand of plants in the field and to have every pant a vigorous and healthp one. There is often a large proportion of misses in potato fields and a still larger proportion of weak and diseased plants which lessen the yield enormousyl.

Experiments have been tried in diffrent parts of Canada to determine the best time to plant potatoes for highest yields, and from these experiments and the experince of the best growers, the following dates are suggested as being the best: Prince Edward Island, June 1-7; ;Nova Scotia, June 1-15; New Brunswick, June 1-15; Quebec, May 15 to June 15, depending on the part of the province; Ontario, May 1 to June 15, depending on what part of the province; Manitoba, May 10-15; Saskatchewan, May 10-24; Alberta, May 10-24; British Columbia, April 1 to May 15, depending on what part of the province. The tendency has been in most places in Canada to plant later than is desirable for highest yields. From results obtained the following general recommendation is made:

Where the spring is early and autthe spring is early and summers are the spring is eary and summers are dry, plant early. Where the spring is late and autumn frosts are late, early planting is not so important. Where the spring is early and autumn frosts are early, plant as soon as the soil is dry enough.

HOW MUCH BARLEY SHALL WE SOW TO THE ACRE

(Experimental Farms Note.)

An experiment has been conducted at the Experimntal Station, Charlottetown, during the last three years, to determine the most profitable amount of barley to sow per acre, as shown by its own development and yield, together with its effect upon the yields of the subsequent crops in a four years' rotation, rotated as follows: 1st year Mangels, (stable manure applied to this crop in the rotation once in four years at the rate of 20 tons per acre); 2nd year, Barley, 3rd year, Clover Hay, 4th Year, Timothy Hay.

The barley was sown at the following rate per acre, namely, 1½ bushels, 2 bushels, 2½ bushes and 3 bushels per acre, and all seeded down alike with 12 lbs. Timothy and 10 lbs. Red Clover per acre. The records from each of these plots were kept separately throughout a four year rotation, for all of the various crops and the figures given below constitute a three year average yield of the crops in the above mentioned rotation. Where the barley was sown at the following rates: 2, 1½, 2½ and 3 bushels per acre, the yields of grain were 34 bushels 26 lbs.; 34 bushels 37 lbs..; 34 bushels 28 lbs.; and 32 bushels per acre; the yields of clover hay were 2333 lbs., 1700 lbs., 1620 lbs., and 1707 lbs.; the yields of timothy hay were 2560 lbs., 2080 lbs., 1640 lbs., and 1500 lbs. per acre and the yields of roots (mangels) were 413 2/5 bus., 380 3/5 bus., 272 4/5 bus., and 322 3/5 bushels per acre respectively.

It will be seen from the preceding that the best results were obtained throughout the rotation by sowing the barley at the rate of 2 bushels per acre. It will be noticed that the yield of grain varied only slightly with the amount of seed sown, not sufficienty to leave any of the plots appreciably poorer in consequence of the amount of fertility taken from the soil by the barley. Therefore the increased yields of hay can only be accounted for by the nurse crop of barley at the rate of 2 bushels per acre being of the right thickness to give the young timothy and clover plants the proper protection from different climatic conditions, such as direct sunlight or drying winds, which would cause the evaporation of the soil moisture or a transpiration from the tissues sufficient to cause the drying up or even the death of the young plants. Furthermore, the increased yield of roots results from the more luxuriant growth of clover and timothy sod that has been ploughed under, and which, upon its decomposition, not only augments the supply of humus, but also sets free the nitrogen that has been stored, by the nitrogen fixing bacteria, in th enodules on the roots of the clover, in a readily available form for the following crop of roots.

THE VALUE OF GOVERNMENT STATISTICS

Last winter, when many farmers were writing to the the N. S. Department regarding the disposal of their surplus potatoes, the Secretary for Agriculture took a trfip to Boston for the purpose of ascertaining if any further market could be obtained for the Nova Scotia crop. On his return he stated at several public meetings that the U. S. Dept. of Agriculture reports indicated a shortage of 30,000,000 bushels in the potato crop. At the time when he was there the shortage had not shown up. . Some of the dealers were of the opinion that the unusually mild winter had made possible the continuous shipment of supplies from outside poits, supplies heretofore held up until spring. The same bureau reported a large shortage in the Southern States which ordinarily furnish a heavy supply to New England and adjoining States. The forecast of these reports has now materialized. Boston is already buynig in Nova Scotia and will continue to do so until the surplus in this Province is cleaned up.

Go over your harness, halters ropes, etc., to see that all breaks are repaired and all weak places strengthened to prevent breakage. Possibly your hay rope was broken or a strand was cut. If so, make a long splice or weave in a new strand.

HORTICULTURE.

GROWING BEETS AND MANGELS

There is no one crop grown upon the farm that requires greater care in the preparation of the seed bed than sugar beets or mangels. It costs just as much to raise a half crop of roots as a full one, because the soil requires the same preparation, the same cultivation, thinning, hoeing, etc. If a good crop is grown, the financial returns will be good, but if only a fraction of a crop is raised, it may be very expensive by the time it is harvested. In view of this, it is easy to understand why every care should be given to preparing for the crop, land that is best adapted to the growing of sugar beets and mangels.

The first requisite to successful culture of beets is proper drainage, for the reason that their roots will not thrive in a wet soil nor in the absence of oxygen. It is obvious then that beets should only be planted in well-drained soil if best results are to be obtained.

Soils in which the water table is near the surface are not desirable for sugar beet culture. When free water is present near the surface of the soil it limits the space in which the beets have to feed; renders the soil cold and wet in the spring; reduces the air content of the pore spaces; retards the liberation of plant food; causes the available plant food to go into a weak solution; retards the action and growth of beneficial micro-organisms, and reduces the soil's capacity for water. All this tends to keep the roots from going deep enough in the soil to insure maximum gorwth as the roots of the plants are forced to develop in the surface layer of soil, which is incapable of feeding the beets properly throughout the growing period. In short, the soil area from which the beets must derive all the plant food necessary for their proper growth and development is limited by the height of the soil's permanent water table. As the season advances and a period of drouth arrives, the water table is lowered and the roots of the plant not having made a downward development will be unable to obtain the necessary moisture from the lower soil strata.

The method of preparing land for sugar beets or mangels will depend somewhat upon the crop grown the previous year. Most successful root growers recommend planting roots after sod, ploughing the ground after the hay is removed and cultivating at frequent intervals throughout the summer and fall. Such a method of cultivation cleans the field of weeds and conserves moisture, thus insuring a heavier crop. However, it's too late to prepare now for this summer's corp in that way; but if a field is not too weedy and was fall ploughed, it may be selected, manured, and planted to roots, and if properly worked a good crop may be expected.

The seed bed must be prepared thoroughly. There is no crop grown upon the farm that will repay any extra work in preparation as well as a crop of roots. The soil should be worked deeply so as to allow the roots to penetrate to the proper depth, then rolled to make it firm, and the top few inches worked ilke a garden. This insures quick germination and rapid growth, and permits the plants to get ahead of the weeds and keep there.

In obtaining the proper state of tilth the roller and the drag harrow are the most useful implements. After the soil has been disked once or twice as deep as possible, use the harrow to pulverize the surface, and the roller to firm the soil and crush the small lumps on the surface. If the soil is not thoroughly drained or is weedy or shallow seeding in drills is to be preferred; on clean, rich soil flat cultivation may be practised. Plant in drills about thirty inches apart, using plenty of seed and rolling after the planter. Run a wheel hoe close to the rows as soon as the plants can be seen, give frequent horse cultivation throughout the summer to keep down the weeds and prevent evaporation of moisture. Thin as soon as the plants will allow, leaving about eight inches between them, and pull in October before the frost comes. It is not wise to pull too many beets at one time as they deteriorate rapidly if exposed to a bright sun or high winds.

A great many farmers think that the growing of roots is too expensive a proposition for the returns to be had from them. That is a false conception, as most successful root growers will testify. They claim, and with ample proof, that root growing is one of the most profitable crops grown upon their farms. Neither are these men all engaged in the raising of live stock. Those who are situated near a sugar beet factory make good money by growing beets for the manufacture of sugar, while others who are near towns or railway stations grow turnips for table consumption. These are all profitable investments, but it is on the live stock farm that roots are most important. They seem to supply a certain "something" which puts that extra bloom on the animals and which cannot be supplied by any other feed. The greatest live stock country in the world (Great Britain) grows large areas of roots and leading stockmen of that land claim that their extraordinary success has been due to the heavy feeding of roots. Canadian stockmen could do nothing better than to copy their methods in that respect and grow more roots, which, together with corn silage, makes an ideal ration. Sugar beets and mangels are heavy yielders, are better for dairy cows than turnips or swedes, and deserve a much larger place in the rotation of the dairy farms of Central Canada.

Buy New Machines

FOR years you have been cheerfully complying with Government request to save materials by repairing your old machines rather than making replacements. Now that the need for this has passed, would it not be real economy to buy new machines and be assured of uninterrupted service at a time when a break-down would mean serious embarrassment and loss.

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are designed to remove all elements of chance from hay making. The mower lays the hay in even swaths down meadow and hayfield. The left-hand side delivery rake follows the mower closely, touching the heads first (not the stems), piling two swaths at once on the clean stubble. This insures proper and speedy curing. Every hay grower should become familiar with the combined side delivery rake and tedder, which has become one of the most popular haying tools. It can be instantly adjusted for raking or tedding.

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You will find that the local agent has just the size and style of International Harvester haying machines your work requires. See him, or write for catalogues. Order early.

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Do you know that one Farmer in New Brunswick sold nearly $5000 worth of berries from five Acres? That another Farmer sold over $8000 worth from a little over ten acres? These results are not exceptional, any good farmer can do as well who will give his attention to the most profitable crop that can be grown in the Maritime Provinces. We can supply Plants for the professional Strawberry Grower, for the man who grows an acre or two as a side line to general farming or for the family garden. Good strong well rooted plants are more than half the battle in successful strawberry culture. Start right. Don't take plants from an old bed or from the side of the rows as a gift. All Farmers know that poor seed means a poor crop. Dunlaps, Warfields and Beder Woods, $4.00 a thousand; Sample, Glen Mary and Dr. Burrell, five dollars a thousand.

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GRADING OF POTATOES AND ONIONS

Editor Maritime Farmer:

Of recent years a great deal of consideration has been given to the question of onion and potato grading. Many large marketing organizations have recommended that steps be taken to have legislation passed which will render compulsory the grading of these commodities. Individual growers, as well as wholesale dealers, have made similar recommendations.

During the four years of war, however, the Dominion Department of Agriculture, to whom these suggestions were made, deemed it wiser to direct every effort towards increasing the production of vegetables in order to save wheat, rather than to do anything to interfere with production. Fro this reason the question of compulsory grading has been left in abeyance.

About a year ago optional potato grading laws were put into effect and were enforced by the Dominion Fruit Branch during the past season. These were satisfactory as far as they went, but as they affected only shippers who graded their potatoes No. 1 or No. 2 and did not affect those who preferred to market ungraded stock, the benefits resulting from the system were of necessity limited. With the cessation of hostilities, and with all lines of commerce and industry endeavoring to adjust themselves to the present era of reconstruction the question has again presented itself, and must now be carefully considered on its merits.

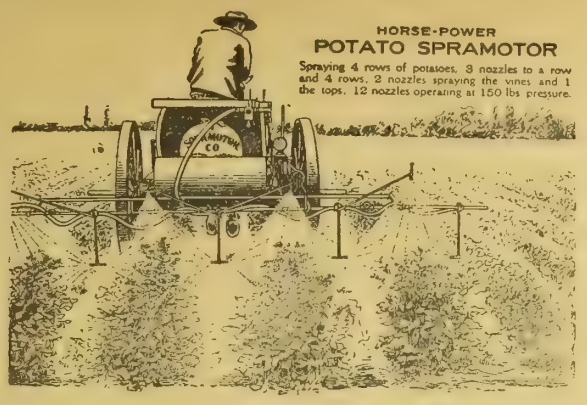
Looking at the matter in a general way, primary consideration should be given to the benfits which would result from legislation compelling growers and shippers of potatoes and onions to grade these commodities in acocrdance with Government standards. The greatest of these benefits would probably be the mutual understanding which would be created between buyer and seller. In the past there have been many instances of cars of vegetables being refused at destination on account of declining markets; the result has been that the shipper, often far removed from the consignee, has been obliged to accept a lower price in order to dispose of his goods without further difficulty. There have been probably as many instances in which consignees have received goods of inferior quality, and have been obliged to enter in extensive negotiations in order to effect a satisfactory adjustment. These and similar difficulties would be greatly lesened by a system of compulsory grading subject to Government inspection.

The marketing of very small and inferior potatoes and onions would also be prevented and a large quantity of suitable stock feed, and which should never leave the farm, would thereby be kept out of our large consuming centres. In this connection it is important to note, however, that requests have been made for provision, in the wording of the necessary legislation, for the marketing of new potatoes during the months of July and August. There is a considerable demand for these potatoes, which are smaller in size than would be permissible in graded stock.

Compulsory grading would also do much to aid Canadian shippers in foreign markets, where competition is now very keeen. At the present time, for instance, Canadian potatoes are shipped in large quantities to American markets and to the West Indies and come into direct competition with the United States potatoes which are graded. This has, in the past, affected the sale of Canadian-grown stock and Canadian shippers have been obliged to accept proportionately lower prices than those paid to American shippers.

In order to obtain an expression of opinion upon the subject of compulsory grading, the Dominion Fruit Branch has cmmunicated with practically all the leading shippers, associations and wholesale dealers in Canada, pointing out to them the possibility of legislation being introduced. The replies received have been many, and the expression of opinion has been practically unanimous in favor of a compulsory grading spstem. The proportion of dissension has only been about two per cent. and this smali minority is probably influenced by purely local conditions. It is therefore quite apparent that the introduction of compulsory grading would meet with general approval in all parts of the country.

It is interesting, in this connection,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POTATO SPRAMOTOR
Spraying 4 rows of potatoes, 3 nozzles to a row and 4 rows, 2 nozzles spraying the vines and 1 the tops, 12 nozzles operating at 150 lbs pressure.

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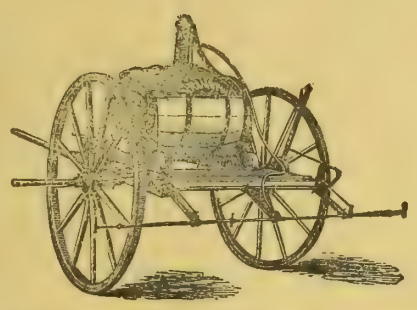

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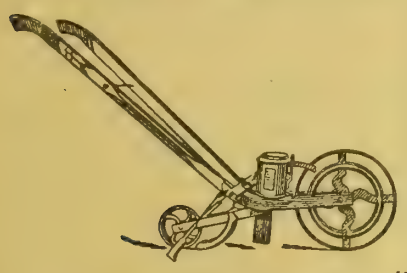

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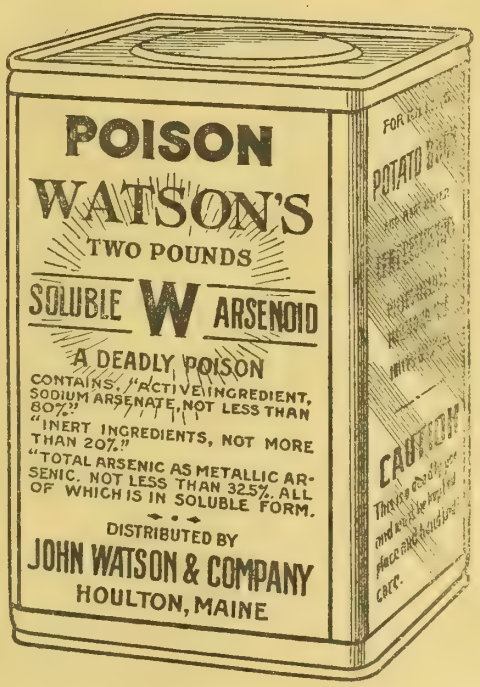
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It must be used with bordeaux mixture, and not otherwise. It is very adhesive and does not wash off easily.

FREE OF DUTY except the war tax.

On July 22, 1918, the Canadian Customs at Ottawa issued an order removing the duty on WATSON'S SOLUBLE ARSENOID except the war tax, and this order applies only to WATSON'S SOLUBLE ARSENOID, manufactured by John Watson and Company, Houlton, Maine. This endorsement speaks for itself.

WATSON'S SOLUBLE ARSENOID has been on the market for a number of years and is used almost exclusively in Aroostook County. If your dealer cannot supply you, write us direct, and give us the name of your dealer.

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Fresh Vegetables From Your Own Garden

make the meals so much more tempting—as well as much more healthful and less expensive.

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They have produced 44 successive crops in Canadian gardens and fields—they have rarely disappointed—and have so often pleased beyond all expectations.

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to refer brifly to the history of the Fruit Marks Act which was introduced into Canada at a time when fruit packing was probably at its worst stage. During the past eighteen years the improvement in the grading and packing of Canadian fruit has been very marked, and at the present time the enforcement of the Fruit Marks Act consists largely of maintaining the standard of grades which have been effected since the original introduction of these laws. It must, therefore be expected that the grading of potatoes and onions, while of immediate benefit to all concerned, will increase in value with each succeeding year.

Before any steps are taken in the direction of legislative measures, and before definite grades are defined, the views of representatives from all Provinces will be obtained and every consiideration given to the whole question from every standpoint.

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APPLE TREES FOR SALE

Three years old, 5 to 7 feet, good thrifty stock (1st class) in Wagner, Red Stark, Wolf River, Cot's Orange Pippin, Ben Davis, Stark and Baldwin.
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EARLY CABBAGE PLANTS

50-40c prepaid, shipped successfully. Ask for Vegetable Plant Price List. Agents wanted.
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SEED SOWING AND EARLY CARE OF VEGETABLES

(Experimental Farms Note)

The time of sowing the seed and the early care of vegetables are very important factors in the successful growing of them. The seed of some kinds of vegetables will germinate at a temperature and under certain conditions of moisture at which other seeds will not germinate and will sometimes rot.

Seeds of beets, carrits, lettuce, onions, parsnips, peas, radishes, kohlrabi, garden cress, salsify, spinach, parsley and leeks can be sown as soon as the ground is dry enough in the spring so that it will work well. The seeds germinate at relatively low temperatures and the plant will stand considerable frost without serious injury. Other vegetables such as cabbage, cauliflower and celery will also stand frost but these are usually started in a hotbed in order to save time in the field.

Vegetables which require higher temperatures than the above in order to grow wel and which are injured by light frosts are beans, corn, cucumbers, melons, potatoes and squash.

Seed of late cabbage is not sown until late in May but it will endure frost, and seed of Swede turnip should be sown late when required for the table.

nI orderf to obtain plants subject to light frosts, which are well advanced before being set out and to save considerable time the field melons, egg-plants, peppers and tomatoes are usually started in hot beds.

Frequently lack of germination of seed is blamed on the quality of the seed, whereas it may be due to the way the seed is planted or to the rotting of the seed in the ground when certain kinds of seed have been sown too early. Small vegetable seeds are often planted much too deeply. For the smaller seeds one-quarter of an inch for the smallest to one-half of an inch for those a little larger is deep enough. If planted much deeper the seed may germinate but the shoot does not reach the surface of the ground and the tiny plant dies. Peas, corn and beans are planted about two inches deep. In very loose soils, the surface of which dries down more than those fairly compact, slightly deeper planting may be necessary.

When the seed has germinated great care should be taken to ventilate hot-beds carefully. When the young plants come up, the frame should be kept sufficiently aired by raising the back or higher part of the sash to prevent the plants from getting spindly or weakly, when they are apt to damp off. When young plants are grown in a window in a house they are often very thick in the pot and if in the sun with the surface soil wet ,they are very liable to damp off or scald. They should be thinned out and transplanted as soon as possible. Great care should be taken when ventilating a hot-bed when the wind is high in cold weather as cold wind blowing directly on the plants will injurethem. A board should be put at the end of the sash to break the force of the wind.

Plants which have been growing in a hot bed or cold frame or in the house should be exposed to the open air for several days before they are set in the field, protecting them as usual at night, as if set in the field without hardening off in this way they are much more liable to be injured in cold or windy weather.

Most Accurate Ever Invented

Are you content to go on in the old-fashioned way using all your available farm help planting by hand, limiting your acreage because of labor scarcity, and keeping your help away from other pressing work in busy season?

Get an O-K Canadian Dial Planter and get your planting done accurately without seed waste and in a fraction of the usual time.

The O-K Canadian is the only planter that has the endless cup seed dropping device. It does not pick or bruise the seed. It is noted for being the most accurate system yet invented.

From the roomy steel hopper the seed is picked up by cups and deposited on revolving dial plate. This makes it simple to make any corrections necessary. Absolutely one piece of seed goes to each hill, thus making your seed go farther. Five years' tests demonstrate accuracy close to 100 per cent.

O-K Canadian Potato Planter

The O-K Canadian has equipment for correct depositing of fertilizer. Furrows are opened by two shoes. The first opens a trench to receive the fertilizer. The second shoe opens the furrow deeper, mixing fertilizer thoroughly with earth, thus protecting seed when dropped. This is correct and necessary for proper fertilizer results.

You certainly ought to get full particulars about the O-K Canadian, the machine that will enable you to put in more acreage into this profitable crop at low cost. Write to-night for free literature giving full particulars of O-K Canadian Planters and Diggers.

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Makers of the Famous O-K Sprayers

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APPLE BUD MOTHS AND THEIR CONTROL IN NOVA SCOTIA

The apple is attacked by a number of different insects. In Nova Scotia the caterpillass of the Bud-moths are probably the cause of more loss than all the other insects combined. The Entomological Branch of the Dominion Department of Agriculture has just issued Bulletin No. 16 entitled "The Apple Bud-moths and their Control in Nova Scotia," by G. E. Sanders and A. G. Dustan. This bulletin of 24 pages gives and account of the life-histories of the four destructive bud-moths which occur in that province. The chapter on the control of

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these insects discusses results obtained from spraying experiments, following which definite control measures are recommended. Useful information is also included on parasitic insects and other natural enemies. Fourteen illustrations appear in the bulletin. These show injured blossoms and fruit, various stages of the insects, etc. This publication will be of much value to apple growers in eastern Canada. It ca nbe obtained free of charge on application to the Publications Branch, Department of Agriculture, Ottawa. A technical edition of the bulletin giving scientific descriptions, etc., has also been published. This will be of special interest to economic workers. Enquiries regarding insects in general should be addressed, The Dominion Entomologist, Department of Agriculture, Ottawa, Ont."

BEAUTIFYING THE FARM HOME

The making of a rural landscape the home of the farmer is like the making of a picture. There is more than pleasure comes his way in training himself to this art of picture making of his home; there is money in it too. Increased market value will follow and this is the way to procure it.

The first thing is to have a clean-up day. Collect the scattered farm fachinery and get it under cover. Haul off to a widening gully the accumulation of tin cans, bones, buckets, brickbats, baling, wire, barb wire, etc. Remove to the roadway the bank of cinders and ashes. Collect the scattered wood pile into a convenient but unobtrusive place. Remove the dead and dying branches from trees and shrubs. Define the driveways so the traffic will be confined to a given entrance-way instead of driving promiscuously about the place. Repair the tumbledown fences or cover their ugliness with concealing vines. By the use of plantlings of some of the numerous vines, shrubs and vigorous annuals, screen from the front view the poultry yards, barn yards, outbuildings and any ugly spots of the homestead. The visitor is admitted step by step as he passes from screen to screen int othe private apartments of home grounds, just as the visitor passes from parlor to kitchen, as the relation with the household becomes more intimate.

Of all the places the farm home possesses the greatest opportunity for beautiful effects in ornamental planting. As a rule this fact is not sufficiently appreciated. In many cases no attention whatever is given to planting about the home. One reason for this neglect is the fact that the owner is under the impression that good landscape gardening about his place canont be effected without elaborate plan and larger expense. Many times Nature herself has given to the country home and its surroundings all of the main essentials of landscape beauty. Here it is necessary for the owner of a home to go to nature's more skilful production and attempt to copy her results. As we pass through fields and woodland we are attracted by the pleasing pictures that seem to be thrown together in bewildering confusion. We begin to analyze anr to differentiate out the simple principles by which Nature secures her satisfying results. We find here a cozy nook that looks so restful and quiet. There are no stiff, regular lines that put upon it the stamps of artificiality. Nature does not work in straight lines. The open grassy plot is bounded by a border of shrubs and trees intermingled with annual and perennial flowers in profusion. The shades of green and the varying flowers and fruits blend and contrast in bewitching combinations. The boundary line of the border in a beautiful irregularity suggests a coast-line with its capes and bays and peninsulas. The skyline also is utter confusion as the sky is torn by the tops of trees and shrubs of varying heights and shapes. Here a break in the border opens to view a pleasing vista stretching into the distance. There a solid mass of foilage shuts from view any ugliness that may be beyond. Here a vine covers and festoons the skeleton of a dead tree, making it beautiful even in its death. There are no harsh and obtrusive corners, but each part in the mosaic fits into its place and blends with the other parts to make the picture.

Now supopse we introduce into the grassy plot of this picture the house with its walks and driveways. What is the result? Nature has done its work well, but man has marred it. These the necessary conveniences for man but seem inharmonious and artificial even when the architect has done his best. The house rises abruptly out of the ground and stands like a sentinel that says, "Stand aloof!" I have been sent to rule you with unrelenting sway." It becomes necessary for man to use Nature's way to tie the house to the ground and break the sharp angles and lines by planting about the base of the buliding and in the background. The house must look as though it had grown up with the landscape rather than it had been superimposed upon it. Study nature's way, and go and do likewise, and you will make the country home the ideal place to live in and rear a contented people.—M. L. HAYES.

THE DRAIN OUTLET

The outlet is of the first importance in tile drainage. There must be a clear fall away from it. Submerged outlets, so-called, are no outlets. They still elave that land undrained where the tile lies below the level of the water at the outlet.

An outlet right, purchased, through another man's land, is usually worth what it costs, Protect your outlet with a concrete abutment. Screen it against the entrance of birds and animals.—Prof. H. B. Roe.

The apple-growing industry was conceded by residents in the south-eastern Ohio counties to have reached the lowest possible level a few years ago. The improvement which has been derived from the new methods of fertilizing in one county alone is estimated to have increased the apple revenue by a million dollars in eight years.

Massey-Harris

Built for Service

The real test of a Tractor is—will it do the work? The Massey-Harris Tractor has met this test and proved itself to be the Tractor built for service on the farm.

Constructed on sound scientific principles, free from any freakish contraptions, with a strong, sturdy Frame able to stand the severe strain of farm work, and an Engine with power sufficient for any ordinary farming operations. The

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DAIRYING.

WINTER DAIRYING ADVANTAGES

(Kimball's Dairy Farmer)

Dairymen have just passed through a period of very strenuous field activities and of heavy milking with the dairy herd. Now, when field work is lax, many will be idle, because they do not fall freshen their herd. In fact, on some farms the term idleness might be used. A more even balance of the year's work can be brought about if the cows are bred to calve in the fall. The logic of this is very plain; as the work for caring for the cows draws to a close, the busy time in the barn opens. The cows will be coming fresh at that time. There will be plenty of time for giving them any needed attention, and for looking after the young calves.

Records show that under the system of having cows calve in the fall 12 to 20 per cent, more milk is secured during the course of the year. The price received is higher. Higher profits are insured, because under this management, the cows are yielding their maximum production at the season of high prices. It is true that milk products cannot be as cheaply produced on high priced feedstuffs as on grass, but the increased price and greater ease of handling the milk during the cool weather, with the subsequent saving in labor, far outweighs the advantage of the grass pasture.

Best at First

One of the greatest arguments in favor of fall freshening is that it balances the work of the farm to a nicety. The cows commence to come fresh about the time the heavy work on the farm is completed for the year, or along about the middle of November or the first of December. The dairymen is in a position to devote all his time to making the herd profitable. In this manner the farmer provides himself with productive and profitable work for the entrie year. Usually the milk flow begins to fail by the time the spring farm work opens, the dairy work is consequently lighter and can give place largely to work in the field. By June the cows start to go dry and by the time the blue grass pasture fails in the fall there is very little cow work and plenty of farm work. The dairymen, however, can make good use of the pasture while it lasts, for the cows respond to it and the dairyman is rewarded with an extra flow of milk before the cows go on their summer vacation.

It is important that the dairy cow be encouraged to do her best during the first part of the lactation period, for to a certain extent she will strive to maintain the pace set during the first few weeks. The dairymen, for this reason, should be prepared to give the cows the best of care at this time. More can be accomplished toward producing the very highest flow of milk in the fall or early winter than in the spring. This theory is based upon the fact that the cows' system becomes sluggish through the winter due to artificial feed.

In the absence of silage or roots a grain ration something like this should be used: Bran, 40 parts; ground oats or barley, 20 parts; cornmeal, 20 parts; oilmeal, 20 parts.

Most dairymen have found that it pays to make use of the scales for weighing the grain for each cow and the milk from each milking. It is usually admitted that occasional weighing is worth while as showing whether a cow is a "boarder" or not, but those who have kept a complete milk record realize the value of such a method to the feeder.

It is a safe rule to feed 10 to 15 pounds of hay, 25 to 45 pounds of silage, or 30 to 50 pounds of roots, varying the quantities acocrding to the size and capacity of the cow. In addition, one pound of the grain mixture should be fed for every 3 or 4 pounds of milk produced. If a cow tends to fall off in production without gaining in body weight it would seem that she is not eating enough, but if she gains in weight at the expense of production it is apparent that she needs more protein, relatively, in her ration, or—maybe she is the wrong kind of a cow. A good feeder will not permit acow to run down and become too thin. If she tends to "go too much to milk" she can stand a wider ration, that is, more fattening feeds in proportion to those richer in protein.

The profitable feeding of dairy cows consists of supplying them with plenty of well balanced, palatable feed, in suroundings which afford them health and comfort. Nature gives the dairyman a model in feeds in the month of June and this is recognized to such an extent that the very words "June pasture" suggests the ideal condition for producing milk and butterfat of the highest quality and in greatest abundance. The dairyman should therefore, try to extend these more ideal conditions throughout as much of the year as possible, and will succeed just as far as he recognizes and applies the factors which go to make up the ideal conditions.

In the first place, the common grasses supply all of the required nutrients in the proper proportions. Besides, this forage is relished by animals to such an extent that they will consume it almost to the limit of their capacities. Then again, pasture grasses are succulent, and so keep the digestive system of the animal in a laxative condition favorable for the very best action of the organs of di-

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Mr. Dairyman:

Do you realize that a *good bull* is more than half the herd, but a *scrub* is mighty near all of it? *Then swat him.*

Be wise, and put an *Ayrshire Bull* at the head of your herd *this Spring.* Get one from a proven family.

No class of cow is in greater demand to-day than a *Grade Ayrshire. Why?*

Because in the manufacture of milk they possess the three great essentials required in a high class machine:—

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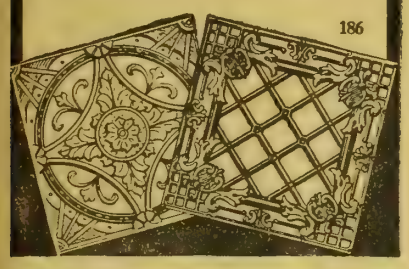

gestion and assimilation. We must not forget that animals on "June pasture" are supplied with an abundance of fresh air and sunlight, not to mention pure water at will.

In practice the dairyman must adjust himself to conditions of climate, soil, location and capital, which in turn are affected by the market for products and the help available for the care of the herd. What would be wise practice for one man may be folly for another. This shows that each should think out his own problem for himself. It is certainly worth some study if he can make a pound and a half of butter where but one was proudced before—especially if the first pound was made without a profit and the extra half is nearly a clear profit

Winter dairying helps to solve the hired man problem. It makes the working of summer shorter and more regular. It provides steady work during the winter, thus keeping some of the good men from drifting to the cities..

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23

Shorthorns

BUYING A COW WITHOUT A RECORD

The young farmer when purchasing dairy cattle, often experiences some difficulty in selecting cows that are good producers and pay a good profit on the investment. If it is possible to buy a cow with a record backed by the Babcock test, one is reasonably sure of the amount of butter fat that the cow will produce under favorable conditions. One is not always able to purchase a cow whose record has been proven, so other means must be used in determining whether the animal is of a desirable type or not.

First, it is necessary to learn the general conformation of the dairy type. The angular appearance, the wedge-shape and conformation and her lack of flesh all indicate heavy production. One of the essentials is that the cow has a strong constitution. It is necessary that her organs of digestion and circulation be perfect in order that the large amount of feed that she consumes may be assimilated and transformed into milk. The indications of a strong constitution are: Deep heart girth; deep roomy chest and forlegs well set apart. Her capacity for storing feed is indicated by her large, capacious barrel.

One of the most important things to consider in selecting the dairy cow is the udder. The shape, size and texture of the udder should be examined thoroughly. It should extend from front to back. One that hangs down too low is not a desirable type of udder nor is the funnel-shaped udder which does not indicate heavy production. Uniform teats, of good size and well placed are desirable. The udder itself should be flexible and of good size. Milk veins—the veins leading from the udder to the heart—should be large and branched and are indicators that the circulation is good.

Frequently, cows that have proven unprofitable to the owner, are offered at public sales and sell for high prices. One cannot be too careful when purchasing a cow under such conditions. It happens that sometimes to all appearances the cow has the correct conformation and dairy type yet it is a poor producer. This kind cannot be told until they are tried out. At the present high prices of feed it certainly does not pay to keep a cow too long that is a non-producer.

HOW TO CLEAN DAIRY UTENSILS

Most of the bacteria which get into milk come from the utensils, such as cans, pails, strainers, coolers, and separators, which have not been properly cleaned. The University of Missouri College of Agriculture recommends the following method for cleaning the dairy utensils: 1. Rinse in luke warm water as soon after use as possible. 2. Wash in hot water containing washing powder which will remove grease. 3. Rinse in clean hot water and place in live steam 15 seconds, drain and place right side up anti lsteam evaporates. On the farm where steam is not available sunning will give effective results. Drying should not be done with a cloth, but by heating the utensils in steam or in an oven sufficiently hot to evaporate the moisture. 4. Invert in a clean protected place when dry.

The Man Who Buys a DE LAVAL *Is Taking No Chances*

MOST any kind of cream separator will do fairly good work the first few months, when it is new.

But if it is a cheaply made or inferior machine, after the first few months your trouble will begin.

And the worst of your experience with such a machine will not be the fact that it wears out quickly or that it runs hard, or that you are piling up repair expense, but that you are losing a lot of butter-fat that is worth 50 to 60 cents a pound.

And that is what you really buy a separator for—to save this valuable butter-fat.

Any time you buy a cream separator—no matter who makes it or what claims are made for it—that has not behind it a long record of satisfactory service, a record that is in itself a guarantee of satisfactory service, you are taking a gamble with all the odds against you.

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There is one cream separator that has been the acknowledged world's standard for over 40 years. It's the one cream separator that is used by the creamerymen almost exclusively. Dairy farmers the country over know the DeLaval and its sterling quality. Experience has shown them that

It is the best cream separator that money can buy

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

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The prolific ewe is not a waddling old lady with soft fat over her back and down her flanks. She is the active muscular matron with watchful eye. Her lambs are soon on their feet, bunting their fresh noses in search of youth. She is the patient mother who lies placidly chewing her cud in the warming spring sun while her rollicking youngsters bound upon her back. From th efat, lazy ewe comes the chilled lamb, the half fed, unthrifty youngster that needs extra attention.

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LIVE STOCK.

DEVELOPING DAIRY BULL CALVES

The success of the farmer and the breder in live stock production depends largely upon how well he develops his young stock. The pig breeder who keeps his young pigs coming along nicely from the time they are farrowed usually finds a ready sale for them when he is ready to sel them. Likewise is it the pork raiser who never lets his pigs go hungry that generally tops the market at the sock yards.

It is the general experience of those who breed pure bred live stock that, whther they sel privately or through the sale ring, there is no difficulty in selling the well fitted, well developed animals. They sell themselves. It is the poorly grown and illy fitted animals that are hard to get rid of.

For those who are engaged in the breeding of pure bred cattle, whether dairy or beef, it is especially essential to ralize the importance of properly developing their bull calves. Their problem is to sell young bulls. They have little difficulty as a rule in disposing of any female stock they may have in surplus, but to sell bulls is another matter. The competition is greater and as a rule more care is exercised in the choice of bulls than in the choice of female stock. It's the fellow that keeps bull calves in the best fitted condition that makes the best sales and makes them easiest.

,Dairy bull calves with good production records back of them often sell at very low prices, and others with little in the line of production records back of them sell at very high prices. The difference in price could be accounted for only in the difference in their conditions as to fitting. Among beef cattle he has seen the differnce in fitting mean a differenc of sveral hundred dollars to the selelr's pockets where young bulls were sold that were otherwise about equally well bred. The bulls sold in the same sale, had the same advantage in advertising, were of equally popular blood lines, and at birth gave equal promise as to their future development as individuals. The difference at sale time was that one breeder had properly developed and fitted his calf while the other had failed to do so.

Although there are those among both breeders and farmers who are in the market for young bulls who think more of the low price at which they may buy tha nof the kind of bull they get, the majority have learned that their chief consideration is not so much the price they pay as the kind of bull they take home with them. Experience has taught them that "The sweetness of low prices equals the bitterness of poor quality."

MILK CAN CARRY INVISIBLE DIRT

Just because you can see no dirt in milk does not mean it is clean. Dairymen try to produce clean milk, but if their precautions end at the point where visible dirt vanishes, they may have succeeded, and they may not. For dirt in milk can exist in an invisible state as well as the visible. In fact, the larger part of the dirt which gets into milk dissolves and cannot be seen, making its presence all the more objectionable.

The visible dirt in milk may be of any sort, which was attached to the cow's body, bits of soil, straw, chaff, filth, or any other foreign substance which will not dissolve in milk. It is a comparatively easy matter to produce clean milk in the spring and summer months, for the simple reason that the cow is generally on pasture during these months and when allowed to care for herself she will keep clean. In the winter, however, she is kepa in closer quarters, and it is

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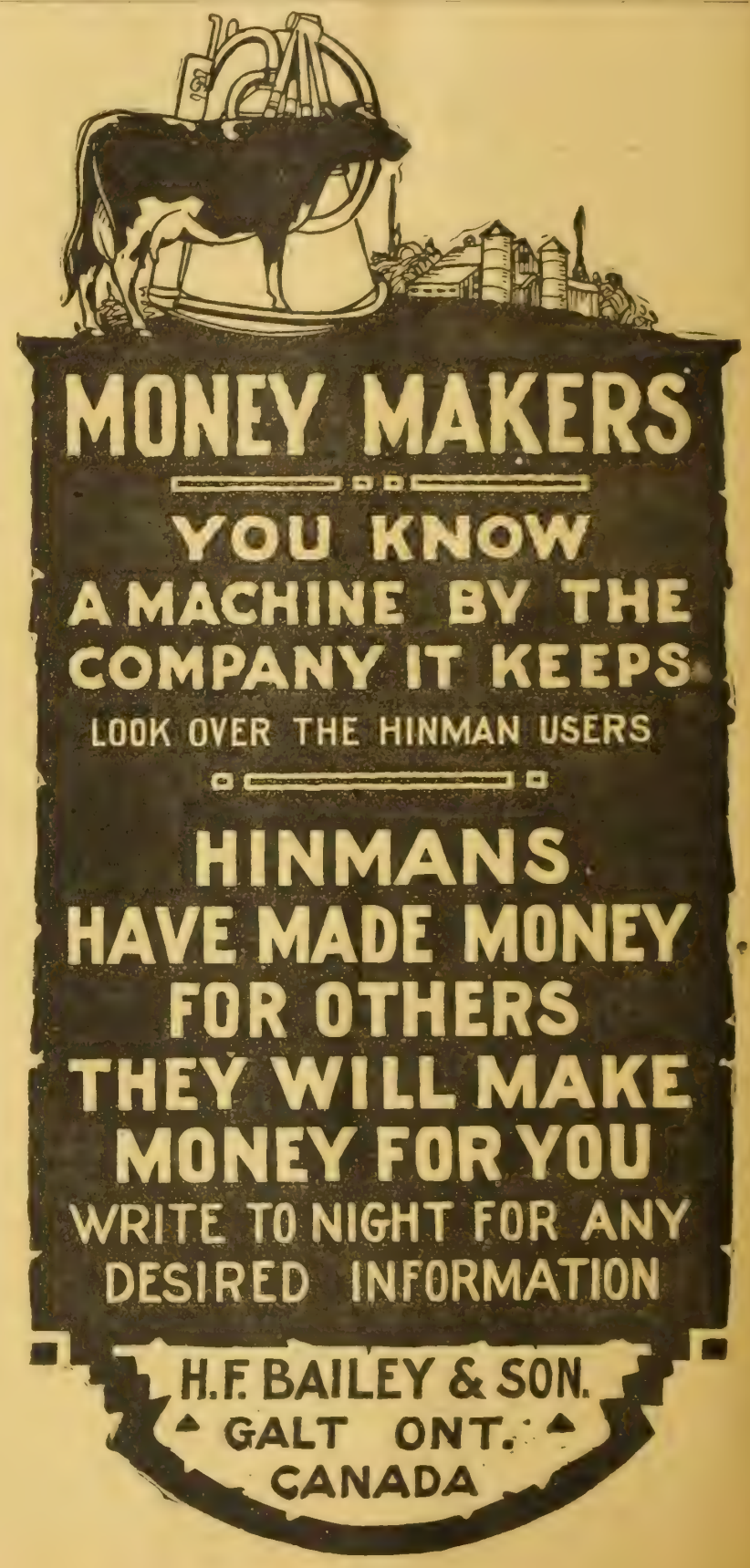


then that the greatest amount of dirty milk is ap tto appear on the consumer's table if the producer has not given the proper attention to the cleanliness of his animals.

Keep the cow in clean quarters. Remove the manure from barn twice daily, where the animals are kept in all day. Keep the long hairs on the udder clipped back so they will not carry dirt so easily. Groom the cow twice daily, before milking. Use a small top pail. Use clean bedding only. Carry on no operation in the milking barn during milking hours which tends to raise dirt, such as feeding and sweeping. Thoroughly clean all utensils which come in contact with milk.

FOUR BULL BRANDS

The Scrub Bull.—Brand him "N.G." Sire of scrubs. Notorious cause of puny creamery checks. Supplier of filling for the worst bullwurst. Furnisher of the canner's "sinews of war." Trademark of ignorance and profitless stock breeeding. Let him be annihilated.

The Grade Bull.—Brand him "?" Sire of mongrels. Inheritor of skin-deep beauty from the pure-bred sire. Powerless to transmit definite qualities of characters. Unable to grade-up stock. Bully for bologna. Trademark of indifference and shiftless in stock breeding. Let him be cut out!

..The Pedigreed Scrub Bull.—Brand him "D. B." Counterfeit purebred. Worthless offspring of aristocratic but unprofitable ancestors. Sire of pedigreed nonentities that defrauad and disappoint their buyers. Cannot raise the level of a herd to the maximum of profit. Trademark of careless incompetence in stock breeding. Let him be butchered!

The Breed-for-performance Bull.—Brand him "O. K." Surest means of herd improvement. Possessor of breed prepotence from profitable pure-bred sires and dams. Transmitter of quality, individual excellence, performance, and every desirable attribute. Herd biulder. Profit maker. Home builder. Trademark of intelligence and progressiveness in stock breeding. Let him reign supreme.—Dr. A. S. Alexander.

THE OLD RELIABLE COW

"Is cow's milk doomed?" asks somebody referring to the announced discovery of a process by which fresh milk, of any "type" wanted, may be made from cocanut oil and powdered skim milk. We confidentlf answer "no," says the H. F. News Bulletin; and it never will be as long, at least, as human science is unable to discover what it is in butterfat that is not in any of the vegetable oils and that makes all the difference between healthy children (or young animals) and children stunted in growth and with sore eyes and skin eruptions. There is no possibility of any of the so-called "substitutes" taking the place, to any great extent, of cow's milk, because too many people have read about the McCollum experiiments and discoveries and know the vital difference between the real thing and the "substitutes." We shall not take the risk of bringing our children up on "substitutes" and even we grown-ups prefer real milk for our food so as to ensure for ourselves the benefit of its healing and waste-repairing qualities. Besides, all the manufactured "substitutes" require some cow's milk or butterfat in their composition to give them even the semblance of merit!"

PRICE REALIZED FOR WOOL DEPENDS UPON THE METHOD OF SHEARING AND HANDLING

The higher or lower values of wool on the farm depends very much upon the manner in which it is shorn and handled, and unfortunately it is one of the farm duties that comes at a season when the farmer's hands are full. The past war conditions has given quite a boost to the use of labor-saving machinery on the farm and sheep-shearing should get attention along this line. The movement for better methods of shearing and packing should get every encouragement, as it has a very material effect on the increase of revnue from the flock.

Shearing Made Easy

Shearing with the shears or blades is now almost an obsolete practice in all sheep-rearing countries. For the farmers with only a small flock they are considered a rather expensive outfit, but on a co-operative basis—one machine in a community—they will pay in higher values for wool and also as time savers.

They will do a better job, are easier on the sheep as well as the operator, and will turn off a larger yield. Hand-shearing isa laborious business generall to the man with the small flock and the work is irritating and fleeces are broken, and sheep badly used in the operation. The machine eliminates a lot of cruelty to the sheep, by the ease and speed with which the work can be done.

This year quite a number of beginners will be at the sheep-shearing job and with the blades they will make poor headway and spoil many good fleeces, but with a machine a novice can become an expert in a short time. **Where a farmer has a gasoline enigne or other small motive power, sheep shearing with the machine becomes more of a picnic than a drudge.**

The Proper Place to Shear the Sheep

The first duty in sheep shearing is the choosing and preparing a clean place for the work. A great deal of waste and unnecessary hardship on the sheep follows careless preparation for shearing. The place where sheep ar penned before shearing or during the process should be entirely free from straw or hay. If possible a shearing board should be made or one improvised with doors or similar boarding. This will remove every chance of having straw or vegetable matter mixed with the wool, which not only deteriorates its value to the farmer, but also to the manufacturer, and the cloth from such wool is of inferior quality. Always remember that the wool buyer pays you only for the clean content of the clip, and if you think to deceive him by adding weight in the shape of dirt, manure, sand or other foreign material, the loss is yours not the wool buyer's. The farmer should always carefully figure on the shrinkage, and if there is none to take off for waste matter, he will get the full value, but if there is shrinkage it will generally be in the buyer's favor and the seller has small room left for complaint.

Attending the Wool and Shorn Sheep

When the fleece falls from the sheep it should be kept free from the animal's and shearer's feet. If it is in any way kicked apart and the fibres twisted, its appearance and vlue is lowered. Also avoid undue handling. Remember that a well tied fleece attracts more attention than one indifferently bundled up. It is useless waste to be careful with the clipping and careless with the tying; or vice versa, the one operation is equally as essential to a high value product as the other. **If you have managed to produce the well shorn, clean fleece see that the tying operation is well handled.**

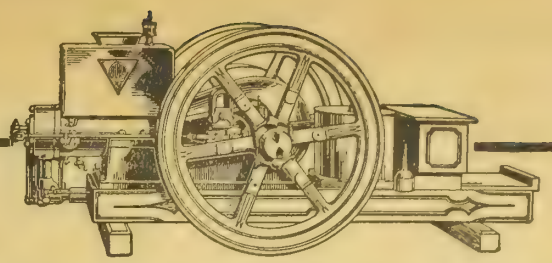
When the animal is clear of its wool, the edges of the fleece should be folded over toward the centre, and then rolled up from head to tail or from tail to head as tightly as possible. Binder twine should never be used, for it causes a good deal of trouble to the manufacturer, as it will not take the dye, and pieces of it will show up in the manufactured article. Paper fleece twine is the proper material to use, for it dissolves in the scouring process.

In sacking the wool, it should be packed as tightly as possible, and see that no moisture reaches it. Wool draws the moisture from the ground, and if wet in this manner, or by rain, the fibre is spoiled so that it is almost impossible to comb in the factory. The buyer will count shrinkage off wet wool, so keep it dry.

Tending the Sheep

So much for the wool, but it may be necessary to say something about the newly-born sheep, especially the ewes. It is a wise and profitable proceeding to shelter them for a night or two after shearing. A good few lambs are prematurely weaned when they ar drivn out promiscuously to the field and the cold chill that the ewe gets on a cold or rainy first night often dries up her milk flow. With machine shearing it is of the utmost importance to shelter the shorn flock, for a night or two, whether the weather be dry or wet. The machine cuts so much closer than the average blade-shearing by hand.

Canada has plenty room for sheep and she now has a chance to let the world see what she can do in the way of producing wool. Let her product be the best handled on the market, and buyers will be after it every time. Rmembr the handling goes a long way with the quality in wool.



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There's nothing complicated about the Alpha—no electric batteries; no delicate attachments to "keep you guessing."

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Its clever mechanism gives that efficient perpendicular stroke, but with a high-geared rotary drive, and it is easier to keep clean, too, just lift out the smooth, white, double glazed jar and rinse.

You can get a book which illustrates every part, gives you full information of hand drive (which can be operated by a child of six) belt drive and electric drive Reliable Churns.

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THE HORSE

PURE AIR AND VENTILATION HAVE MUCH TO DO WITH THE GENERAL HEALTH OF HORSES

Horses' ills and veterinary bills would greatly decrease, if more attention were paid to the comfortable and sanitary housing of the equine breed, young and old, about the farm. It is not generally known, at least it is not apparent from the construction of the average barn, that an adequate supply of pure air is more essential to the thrift and well being of horses than food and water. But it is useless to argue as to which of the three—air, food and water—are the most important. One thing is certain that in speaking of a balanced ration, it is not complete without pure air in the surroudings in which it is fed.

More attnetion to use of balanced rations, and other improvements in the methods of feeding have been of immense value and greater results could yet be accomplished if they were more generally practiced. Only in a comparatively few cases however is there any attention given to pure air in the stable. As a matter of fact, the tendency is to give considerable attention to the question of warmth in the construction of the horse barn, and in many cases warmh is obtained at the expense of ventilation.

Evil Effects of Foul Air

No animal about the farm is more susceptible to the evil effects of foul air than the horse. When he breathes the same foul air over and over, he is deprived of sufficient oxygen to the body. All attempts of nature to get rid body wastes and poisons is impossible; they are repeatedly passed through the system and lower vitality and less vigorous health is apparent. If any disease is around, the animal in the badly ventilatel barn is sure to have an attack. Influenza among horses, a malady that more horses succumb to than many farmers are aware, is due largely to bad ventilation.

Ventilation to be effective must provide for a change of air so that a fresh supply of oxygen is conveyed to the horses at all times, and so that the products exhaled are promptly carried to a point where they will not be again taken into the body. The necessity for fresh air are subjects which cannot be over emphasized. Whether an animal is thrifty or unthrifty; whether it resists or yields to the attack of disease; and in extreme cases, whether it lives or dies, is dependent in large measur upon the character of the air it breathes.

Warming Cold Air

Since the success of practically all systems of ventilation is based upon a difference in the temperature between the air inside and outside of a building, it is evident that a biulding must provide for such a difference in temperature. A good ventilating system will work more efficiently and can be kept under more perfect control in a warmly constructed building than in one whose construction is so open as to keep the stable cold and yet lacking the system to give adequate ventilation. Cold air is not necessarily pure air, nor is pure air necessarily cold. The converse is true of warm air. The whole problem of stable ventilation does not consist in providing plenty of fresh air and removing the vitiated air. A very considerable portion of the problem has to do with the maintenance of a comfortable temperature at the same time that adequate ventilation is provided.

The provision for pure air, and a comfortabel temperature, is an economic question and closely connected with the profits of horse breeding. The health and thrift of the animals and the most efficient use of feeds depends in a large degree upon the extent to which they are provided.

The Sanitary Floor

Another feature in the stable that is against the health of the horses is the wooden floor that is not kept in a sanitary condition. The concrete floor has all the good qualities which are lacking in the old wooden structures. Notwithstanding the many excellent qualities of this modern material for floors, in it alone is not found the ideal stable floor material. It is faulty in two respects, it is too hard and too cold for animals to stand or lie on. In laying a stable floor with concrete, allowance should be made for two inch planks to be laid in the stall.

The wood should be laid flat on the concrete so that no space for urine will be allowed between the cement and wood. The latter will wear out or decay in time, but the cement will be permnaent and sanitary.

The horse stable should always be covered with wood in the stalls for as a rule, the animals will work the straw off a cement floor and leave it bare. Box stalls, however, for either horses and colts where bedding is used to keep them clean will need no covering.

In reply then to the question "Which is the best material to use for a stable floor?" no straight answer can intelligently be given without at first knowing the use to which it is to be put.

In a general way it may be said, however, that concrete should always be used in basement joors and if the needs o fthe case demand it, it should be overlaid with wood, making it a concrete floor.

Elevated floors or floors not resting on the ground will generally be cheaper and easier placed in position if built of wood, since the nature of concrete usually requires that its foundation rest upon solid earth or rock.

The Necessity of a Harness Room

In too many cases the windows are depended upon entirely for ventilating a closely constructed building. Ample window space is essential to a comfortable and healthful building for the housing of livestock, but it is seldom, if ever, that good ventilation is provided thereby. When the weather is cold the windows are almost invariably closed and in poorly ventilated stables moisture freuqently condenses and runs down the windows and freezes so that it is almost impossible to open them. The walls of the stable are generally in the same damp condition as well as the harness that hangs on the wall behind the horses.

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Giant Rope Traces are complete with malleable iron ends and electrically welded steel chains; either 7/8 inch for farming or 1 inch for lumbering. Price complete with 7/8 inch rope, set of four $6.00. (West of Fort William $6.50) 1 inch size $6.50. (West of Fort William $7.00.)

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10

here is more deterioration and loss n harness equipment due to the way it is kept when idle than at work. In badly ventilated barns it is wet all the time, and when taken out for use it gets hard and dry. nI this hard condition it gives rise to many of the blemishes, such as sore shoulders, sweeny, fistulas and such troubles that cause pain to the horses and reduces their value as a motive power.

There should be a harness room in every stable, or a large cupboard, with folding doors, if no other arrangement can be had. Even in well ventilated barns, the harness should not be left near the horses, the dust of grooming lodges on it and remains there, through the harness being sticky from the sweat of animals.

The effcet of good ventilation by way of removing moisture and preventing dampness in a building where a number of animals are housed must not be overlooked. While it is true that there are conditions under which moisture will condense upon the cold surfaces of walls and windows, even when good ventilation is provided, it is also true that good ventilation tends to make a stable dry and poor ventilation tends to make it damp.

RAVENOUS APPETITE IN YOUNG HORSE

I have a five-year-old horse that has at times a ravenous appetite and eats brush or anything he can get a hold of. Sometimes he gets exhausted at work and shows signs of illness, but when he gets into the stable he starts to eat. He shows no sign of pain. Is there anything I can do for him?—R.J.

Reply.—Your horse is apparently suffering from diabetes, and your immediate attnetion should be directed towards giving him a change of diet. Then a mild laxative may be given, say a pint of linseed oil, and a tablespoonful or two of powdered chalk or baking soda be mixed with a pail of drink. For a cure best practicioners rely on iodine, and a convenient formula is: Iodine twenty drachms, iodide of potassium one drachm, carbonate of soda four drachms. This dose to be given thre times a day in water.

YOUNG COLT HURT IN STIFLE

I have a colt about ten months old hat got hurt in the stifle last fall and t slips out and in. What can I do or it?—W. J. A.

Reply.—Apply some blistering, but before doing so the hair should be cut on the part, and the place thoroughly washed, and after it is dry, apply the following with smart friction or several minutes. Powdered canthrides, one part. LarJ heated to 212 degrees, 12 parts. Mix well together. At this strength, the ointment will raise a good blister that will never blemish.

Repeat the appliction again after t is healed, and tie up the colt by the head for a few hours after blistering. This wil lprevent him blistering his mouth.

PEACEABLE COLTS IN THE MAKING

Two three-year-olds, a gelding and filly, were recently turned into the winter quarters already occupied by several weanlings. The groom protested that they would fight. The owner argued that there was no other available shelter and so a trial was worth while. The colts did not fight. After a little scampering about they all settled down to the same routine of eating, drinking and play to which the weanlings had been accustomed.

These colts occupied a shed open on the south side, and they had free access all the time to the 10-acre pasture in which the shed was located. A day's allowance of hay was fed each morning in an outdoor rack and oats were fed twice a day in two long troughs, also out of doors. The owner ascribes the peaceable behavior of the colts to the roomy open-air accommodations. The colts thrive and grow. Their hair is shaggy, but there is plenty of flesh between the hair and teh ribs. Feet are worn down level and smooth without trimming, and joints and tendons are as hard and clean-cut as one would wish. No cocked ankles or boggy hocks disfigure any of them. Plenty of feed, plenty of exercise and plenty of fresh air are the lot of these colts and evidently nothing more is necessary.

Horses do not seem to enjoy kicking at the spot where some horse stood a moment ago. They like to hit the solid mark and that is seldom possible where there is plenty of room to dodge. And so in spacious quarters they are content to live. Even sedate old brood mares, disinclined to run and play, wlil crowd peaceably around and play, will crowd peaceably around and shelter, but they will kick and struggle for supremacy when fed the same hay under a shed. Valuable pedigree mares spend the winters out in the open for this very reason.

Whatever the psychology of the case may be, it is sufficient for practical purposes to know that outdoor freedom promotes peace among horses and colts. They are also cared for with much less work under these conditions. Feeding, watering and stable-cleaning are reduced to short tasks. Extra work caring for stabled colts does not make them grow faster or keep any more sound or shapely. It is largely wasted work.

HORSE HAS SWEENY IN LEFT SHOULDER

Horse that has had sweeny in a shoulder since May. He has run in the pasture since June. On the advice of a veterinary surgeon I blistered the shoulder and repeated it in two weeks. The lower part filled in but the upper still remains hollow and hard. What would you advise?

Reply.—The veterinary you called has biven you the best known remedy, that of repeated blistering with mild blisters, and long periods of rest. The best authorities on the subject have no other recommendations to offer. The nerves or blood vessels of the affected parts seem to be injured by the presure of the collar. Keep on blistering along with the rest cure till better.

A BLISTERING SALVE FOR SPAVIN

A blistering salve for spavin may be prepared by using a mixture of two drams each of biniodine of mercury and powdered cantharides and three ounces of lard. Clipp off the hair and brush the skin clean and dry. Tie the horse short so that he will be unable to kick or bite the treated part. Rub the blister in, a little at a time. for 15 minutes, then smear some of it upo nthe skin. Wash the blister off in 48 hours and then apply a little lard once daily. Turn the horse into a box stall as soon as the blister has been washed off. Repeat the blister in three or four weeks, if it seems to be necessary.

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These are the Preparations which have helped to make Canadian horses famous.

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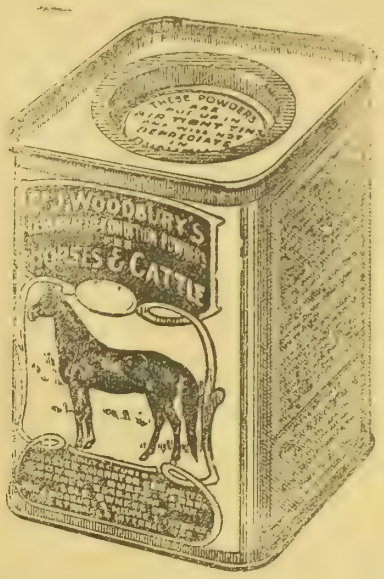

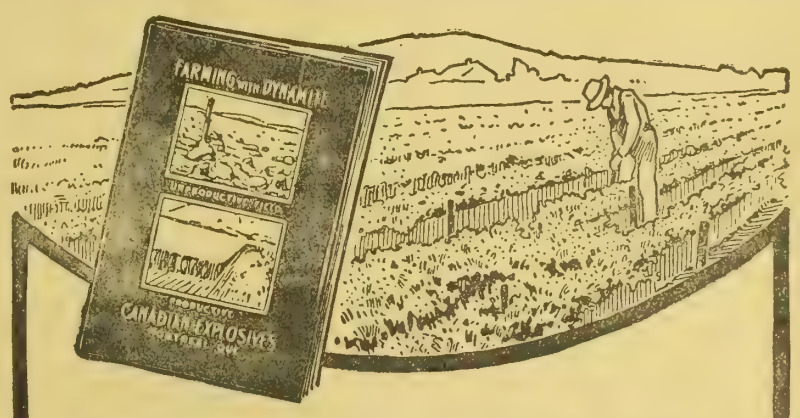

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POULTRY.

EUROPEAN MARKET FOR POULTRY

A French poultry expert, according to advices received by the Canadian Trade Commission, states that there is an urgent need in France for 3,000,000 breeding hens at present. tI is estimated that egg and poultry production there in the last four years has decreased 50%. Over 6,000 hens have been given by British traders to help the restoration work in Northern France.

Conditions in Poland are said to be such that hundreds of thousands of fowls are wanted, and British experts are advocating that the newer breeds be at once introduced into the devastated areas.

The Trade Commission suggests to poultry men and farmers a continuance of the Greater Production Campaign of last year. The cheapening of feedstuffs is in their favor.

Canadian exports of eggs in 1918 roundly totalled 4,000,000 dozen, one-half the quantity exported sixteen years ago. Great Britain alone before the war imported 190,000,000 dozen annually.

One broad idea which the Trade Commission is trying to impress on the agricultural and manufacturing interests is that the present emergency demand in Europe should be regarded as the stepping stone to permanent trade. The field in the poultry trade will be ample for some years to come.

CARE OF MOTHER HEN AND CHICKS

To those poultry raisers who brood by the hen, all there is to say is to let the hen do the brooding. Keep the hen free from lice and also keep her dry and keep the coop clean. t is no difficult task; all that is needed is thoughtfulness and careful attention. Baby chicks will get under the old hen whenever they feel the need of a little warmth. It is, therefore, very important that the hen should be kept dry. Do not allow the hen her liberty with her brood for at least four week. This will give the chicks plenty of opportunity to become strong. Unless the grass is short and conditions favorable it is better not to turn her out as early as four weeks. The first two weeks, however, are the most important in the life of the chick, and the most important factor is brooding during that period. The hen will do that properly if given the proper place and let alone. To those operating borooders the best advice that can be given is, "Watch, and follow instructions." Don't be too big-hearted and overfeed the baby chicks the first week, as it is a well-known fact that more chicks die as a result of overfeeding the first week or two than from any other cause. Many poultry raisers do not realize this because many chicks, owing to their strong vitality, do not die during that short period of one, two, or three weeks, but hang on for a longer period and then die. The death of these chicks is attributed erroneously to other causes when in reality it is due primarily to overfeeding during the first week.

FILTHY HENHOUSES BREED DISEASES

It should be remembered that filthy hen houses are ideal places for the breeding of many kinds of insect pests, especially if they are damp and so closely enclosed that sunlight is unable to penetrate them.

Impure water and damp quarters are responsible for a great deal of the bowel troubles that affect so many of the nearly grown birds. Rheumatism is, as a rule, traceable to dampness, as is also much of the other muscular weakness that many fowls are subject to.

Overhead Expenses

Free yourself from the annoyance of roofing troubles. Save repair costs. Obtain protection from fire and weather for all your buildings. Have a roof that pays for itself by giving years of satisfactory service. Lay

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No matter how large the roof may be, Neponset Paroid is the proper roofing. You can't get a roof that Paroid won't cover—for Paroid roofs them all—from the biggest barns to the greatest industrial plants.

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Roof with Paroid—It pays. Made in three colors, red, green and slate grey.

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Lung troubles and throat and head afflictions are usually the result of improperly ventilated roosting places. As a means of prevention of all of these troubles it is best to practice cleanliness, proper ventilation and admission of plenty of light.

Keeping the quarters dry, clean, well-lighted, and giving the hens plenty of pure air, pure food and pure drink, are the corner stones upon which success with poultry is built.

W. F. E.

DOCTORING THE SICK CHICKENS

On a business basis, one can not afford to spend much time doctoring sick chickens, unless they are valuable show birds or breeders. Poultry doctoring is so full of uncertainty that we never feel justified in spending much effort on a chicken that can easily be replaced. Of course, a slight disorder such as scaly legs or indigestion, can be cured without much bother and with reasonable certainty. We always try to take care of such things promptly, before they have a chance to run into something serious. When real roup, canker, cholera, or other contagious ailments sets in, we usually regard it as a waste of time trying to dope the fowl. The time and medicine required may be worth more than the chicken. Moreover, we never want to retain fowls for breeding that have had a contagious disease.—S. P.

BABY CHICKS

APRIL PRICES:

White Leghorn—Barred P. Rocks,
White Leghorn—R. I. Red
$25.00 per 100.

Barred P. Rocks—White P. Rocks—
White Wyandottes, $28.00 per 100.

Safe delivery Guaranteed.
Strictly utility strains.

PERCY CAREY, Yarmouth, N. S.

SELECTION OF EGGS FOR HATCHING

Set only good sized eggs, uniform in size.

Set only good shaped eggs, uniform in color.

This all you can do with a little care in selection.

It is worth while as eggs of good size, color and shape and uniform are a marketable product at higher prices than small eggs varying in color and all shapes.

Eggs weighing less than two ounces should not be used for hatching. The large sized egg hatches a larger chick.

This larger chick grows faster than the smaller chick.

This larger chick will be marketable as a broiler sooner.

This larger chick matures younger.

This larger chick begins laying sooner than the smaller chick.

The income is received sooner and they are more profitable.

These facts apply to all breeds. The comparisons are made between small and large chicks in the same breed. Careful selection of eggs for hatching pays. Don't neglect it.—H. W. S.

R. O. P. POULTRY

Gradually poultry breeding is becoming more like live stock breeding. It will not be many years until every buyer of a cockerel to be used in the breeding yard will insist on knowing the sire and dam of the cockerel before he buys the bird. The buyer will also want to know how many eggs the dam of the cockerel produced, and how many eggs were produced by the dam of the sire of the cockerel he is buying. Right now many buyers—some of them farmers, too—are demanding to know what's back of the birds they contemplate purchasing before laying down any money. The day of the scrub rooster in the farm flock has just about passed.

INCUBATOR AXIOMS

Follow the manufacturer's directions in setting up and operating the incubator.

See that the incubator is running steadily at the desired temperature before filling with eggs.

Do not add fresh eggs to a tray containing eggs which are undergoing incubation.

Turn the eggs twice daily from the second to the nineteenth day.

Cool the eggs daily from the seventh to the nineteenth day. When cooling the eggs, be careful not to chill them.

Turn the eggs before caring for the lamps. Keep the lamp wick clean.

Attend to the machine carefully at regular hours.

Test the eggs on the seventh and the fourteenth days.

Do not open the machine after the eighteenth day until the chickens are hatched.

THE NEW POULTRY HOUSE

Select a location that has natural drainage away from the building. A dry, porous soil, such as sand or gravelly loam, is preferable to clay soil.

In most localities the building should face south, which insures the most sunlight throughout the year. Allow about 3 square feet of floor space per bird. Proper ventilation and sunlight mean a dry house and healthy birds.

The keeping of an egg record is a very simple matter requiring only a sheet of paper and pencil. Even the childern who gather the eggs can jot down the number brought in each day. This daily record can be added up and the value at market price figured out once a week or once a month as desired.

Turkeys and chickens destroy many insects that prey on the plants in the field and the garden. It would be hard to estimate the value of a flock of turkeys for the destruction of insect pests. But remember that in addition to this help they bring in cash income or supply the table with suitable and needed foods.

PLOW TO THE FENCE LINE

Because of the present high price of living and farming, every farm owner should utilize every available foot of ground to the best possible advantage. You cannot do this with the old rail fence. You are bound to have a lot of waste land in the fence corners, growing obnoxious weeds, infesting the whole farm and making an unnecessary expense and a waste that should be obviated. You are interested in making money—not wasting it. A farm to bring a return for the money invested and the labor expended must be farmed thoroughly—all of it farmed thoroughly. There must be no waste fence corners and no weeds to contaminate the land. A farm to be profitable must be clean.

When you plow to the fence line, as is shown in this illustration, you reach a maximum efficiency. A full hundred per cent fence satisfaction is realized. These are all important considerations. A good fence must be well made. Not only must the material—the wire that is used—be of the best, but the knot that ties the stays and lateral wires together must be of the best. Then you have a fence that stays where you put it. Same even tension winter or summer—strong—durable.

There is great satisfaction in constructing a good fence like the

SARNIA

Fence for these reasons. The strong line wires have a wave or crimp which gives elasticity and spring to the fence and also provides for expansion and contraction caused by heat and cold. Great care is given to a uniform tension on each wire, so that there will be no long wires to make the fence sag, nor any short wires to take up all the strain and break. The strain is evenly distributed on each wire. The Sarnia Knot fastens the stay wires to the line wires in such a manner that they cannot be slipped in any direction. At the same time permits easy erection over rough or uneven ground without kinking or bending either the lines or the upright wires.

We sell direct; prepay freight on all shipments in Old Ontario. New Ontario, Quebec and Maritime Provinces, 4 cents per rod extra. Our office at Winnipeg takes care of all Western Canada business, quoting F. O. B. Winnipeg, thus effecting a splendid saving in that part of the Dominion. Sarnia Fence is made in Canada for Canadian farmers. Sold direct on our "save-you-money" plan. Order now. Have your fencing on hand when you need it and at our exceedingly low prices. Send for descriptive literature, price list and order blank.

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COLOR IN EGGS

"I have ten Barred Rock hens and they are all the same color and size. They do not lay eggs the same color, some are darker than others and some are almost white. They are great layers. Is it natural to them or not? Would the chicks differ in colors, from the uniform colored eggs?"

It is very common for bred-to-lay Barred Rocks to lay eggs that vary considerably in color. The color of the shell has nothing to do with the color that teh chicks would come. The color of the shell varies considerably according to the length of time the bird has been laying. That is, at the beginning of the laying period the shell may be quite rich in color, but toward the end of the period it becomes light. —G. R.

DIARRHOEA IN CHICKS

"Kindly inform me through the pages of your valuable paper, how one can prevent young chicks from getting the diarrhoea which almost always proves fatal. I lost a great many about ten days old last year and I wish to rectify matters for the coming season."—W. W. McC., Dunnville, Ont.

Ninety per cent. of the diarrohea in young chicks is due to a chill. Handle the chicks so as to avoid this and you will probably not have much trouble with diarrhoea. Feed them sparingly for the first ten days and keep them busy. Keep a dish of dry mash and buttermilk in front of them from the start, but teach them to scratch for their grain.——G. R.

Don't raise geese in the door yard. Have a pasture fenced apart and not too near the house.

Pratts DISINFECTANT

kills lice and mites. Keeps down bad odors. Destroys disease germs. Use it for spraying roosts, nests and poultry houses.

At your dealer's in 1 gal. and 1 qt. cans.

Produce More Eggs Waste Less Feed

PRATTS Poultry Regulator will help you get more eggs—more chicks—more layers—more profits. What's more, it will help you to save money on feed, because it makes your fowls digest their feed and turn it into eggs. Poor digestion is a source of waste, and waste reduces your profits.

"Pratts," added to the daily ration, will pay handsome dividends in health, vigor, and egg-production.

At your dealer's in popular priced packages, also money-saving 25-lb. pails and 100-lb. bags.

Money Back If Not Satisfied.

Write for new book on care of poultry. It's FREE.

Use PRATTS ANIMAL REGULATOR. The Guaranteed Stock Tonic.

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

God does not send us strange flowers every year
When the Springtime comes in all the pleasant,
The same dear things lift up the same dear faces,
So must it be that after death's dark winter
God will not put new things in heavenly places—
The same love will look out of the old faces—
I shall have thee.

—Mrs. A. D. Whitney.

THE VAMP

(Continued from last issue)

Passing Mr. Day, though still dancing with Tug, Miss Storrow had reached out a slim hand; had drawn him to them. They danced a trio, for a while.

"She's a wonder!" Phoebe commented. "Do you know, I envy her! I don't think that I've ever flirted in my life. I'm just beginning to realize what I've missed."

"Well, she isn't missing much," Mrs. Day declared grimly.

"Doesn't Molly look sweet tonight?" Phoebe went on. "Look at her gold slippers!"

"She told me," Mrs. Day said, "that Eliott admired Miss Storrow's slippers so much that she went into Boston yesterday and bought three pairs gold, silver and bronze."

Somebody was cranking the phonograph, so that the dance was unduly prolonged. Miss Storrow kept on accumulating partners, until now she danced in the midst of a group of six; a laughing white-and-scarlet accent to the black mass of men.

In fact, the evening turned into one prolonged ovation to Miss Storrow. She divide, re-divided and sub-divided She introduced new solo steps; even group improvements of Terpsichorean kins. And when she was not dancing she was tete-a-teteing with one victim, or coquetting with three or four. She was sweetly courteous to the women; but it was apparent that she did not see them when she looked at them.

"Molly, isn't this a scream?" Phoebe said once to her hostess. "My sense of humor hasn't entirely deserted me; but I'm afraid it's wearing a little thin. What is she like, to live with?"

"My dear!" Mrs. Meredith poured out a torrent. "You ought to have been here. I've never been so ignored in my own house in all my life. The moment Elliott comes home she monopolizes him as though they had just become engaged. When I do venture to speak—which is very rarely I assure you—she listens to me with such a ceremonious look of interest that I wonder why I started to say anything."

"I don't know what her plans are," Phoebe commented. "The only place that I've heard of where they permit polyandry is in Afghanistan. When I hear of Tug buying a ticket for the Orient, I'l lconsult a lawyer at once. Your slippers are lovely, Molly."

"The Vamp has flashed a different pair every night and Elliott just made me go into town and buy some. He said he knew my feet were smaller than hers. They are, too!" Mrs. Meredith eyes danced with triumph.

But that evening at the Meredith's was only a delicate foreshadowing of what was to happen. Phoebe's house became a sort of telephone exchange for what was going on.

"What dou you think that Storrow female has just done?" Mrs. Brodbeck demanded vehemently over the wire a day or two later. "Tom has just called me up from the office for no reason, apparently, than to tell me she has just telephoned him from somewhere in Boston where she is lost. She is so frightened—poor, helpless, shrinking little thing—that there was nothing for him to do but offer to go for her in a taxi. Of course he'll have to invite her to lunch. Did you ever hear of such a proceeding?"

"No, I never did!" Phoebe answered with conviction. "However, Nina, you looked lovely last evening! You were ungallant enough to be the belle of your own party. That blue chiffon over the green made an exquisite effect! Didn't Tom like it?"

"Oh, yes. He liked it so much that he bought tickets for the opera ttonight; and insisted on my wearing it!"

"Well, Phoebe," Mrs. Fall broke out when the two women met marketing a few days later, "that Storrow creature goes to Boston on the train with Fred every single morning and comes out with him every single night. She sits with him all the time, of course. Fred told me that he wanted to do something for her; so he bought matinee tickets and sent them to her. I almost told him that he could depend on me to do the family entertaining of strange women. But of course I didn't!"

"Well, Miriam, you never looked so well in your life as you did last night. Your hair was wonderful. Who did it?"

"Madam Lili. Fred told me that I'd simply got to have her do it twice a week."

"And wasn't Dolly Day a vision!" Phoebe said enthusiastically. She's so little and blond and delicate. She seemed to float in a mist."

"And wasn't Carl proud of her!" Mrs. Fall laughed a little. "He simply couldn't take his eyes off her all the evening."

"Wasn't the Vamp marvelous last night?" Phoebe went on.

"I should say she looked like a nasturtium, in all that yelolw and orange. And weren't those earrings just the right touch. They were like little golden lamps! That dress gave Molly an idea. She's had tucked away for years some beautiful brown and green gauzy stuff that she got at Liberty's in London. She's going to have it made up right away—along the lines of Miss Storrow's dress."

"Well, girls," Phoebe greeted the members of the Sewing Club which met at her house next afternoon, "after all, for five wrecks of matrimony, you are looking pretty well. Everybody's got new clothes."

Her visitors laughed; but there was an element of exasperation in their mirth.

"Where is she this afternoon?" Mrs. Day asked. "I don't think she's with my husband."

"Probably she's with mine," Mrs. Meredith answered, "if not with Tug or Tom or Fred. Perhaps she's corraled all five."

"What sort of a guest is she, now that you've had her for a week?" Phoebe asked curiously.

"Oh, nice enough—if she's ever let me speak to my own husband. I had to signal to him this morning to go out into the hall—to ask him for some money. Curiously enough, the servants all like her, and Belle's children are wild about her. I must say she has put herself out for them, tells them stories and plays games with them—"

"Well, I certainly think she is a strange critter." Mrs. Day's tones seemed to dismiss the problem as a hopeless one.

"For goodness sake!" Phoebe emitted sibilantly, "here she is now, coming up the walk."

Her guests fell into a constrained silence; listened avidly to the footsteps of the maid crossing the hall, to the opening of the door, to Miss Storrow's fresh clear tones. And then, as with one accord, they plunged into ejaculatory conversation.

"Oh, how do you do, Miss Storrow?" came out of the chatter in Phoebe's most composed accents, as she rose to greet her gust. "This is a pleasant surprise. I'm delighted to see you."

"You would probably like to add, 'And to what do I owe the pleasure?' I'm leaving tomorrow; so when I got home unexpectedly early from my walk and learned that Mrs. Mrdith had come here, it seemed the easiest way to say goodby to you all."

"Oh, it's too bad you'r going so soon. You haven't had half a chance to know Maywood." Phoebe's conventialities carried a slight frigidity of tone. "We are all sorry to hear that."

"Are you?" That's nice of you—to say?" Very slightly Miss Storrow accented the word say. There ensued a chilled silence.

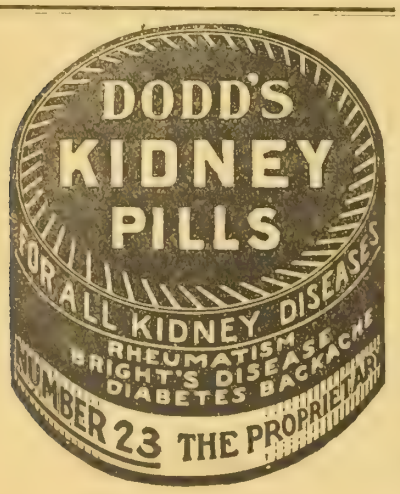
Miss Storrow broke it cryptically. "I think I'll have to do it," she announced. Then without explanation she asked, "Have you ever visited that little town of Troy where I was brought up, Mrs. Meredith."

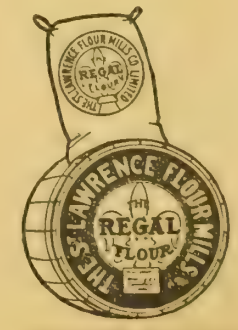
"No," Mrs. Meredith answered civilly, "I never have."

"It's a strange little place; dead, dull, uninspired and uninspiring. I've lived there al lmy life. This is the lrst time I've ever escapd from it.

"I was brought up in a gray, chilling atmosphre. I had no father or mother, or sisters or brothers. I lived alone with an aunt, an old maid of a pronounced type."

She stopped and looke about the circle as though trying to find re-





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sponse of some kind in the eyes which surrounded her. But none came. The women had resumed their sewing; were looking up at her at intervals with a look of polite attention, a little tinged with question. Miss Storrow went on. "I don't remember any color in my childhood or in my young girlhood—any color of any description. By color, I mean actual color and a lot besides—books, pictures, music, the theater, dancing; and above all, beautiful clothes and the admiration of the other sex."

Again she paused. Again she sought the circle of eyes. And now, that interest which she awaited began to shine through the frigid civility of their expressions.

"I never went to parties or to the theater. I never had men call on me. I don't even remember ever wearing a dress that wasn't a drab horror. I don't remember ever having anybody tell me how to do my hair. Or what colors became me. And yet I loved beauty. . . . . Oh, how I loved beauty! How I longed for a brilliant red hair ribbon. . . At eighteen, I was the ugliest, lankiest, most colorless, most awkward, most uninteresting creature that you ever saw in your life. And then, at that precise, moment I complicated matters by falling in love with Jerry.

"Of course I don't have to tell you that, to me, being the kind of girl I was, Jerry was the handsomest, ablest and most popular man in town. He had all the charms and all the accomplishments proper to young manhood. I fell in love with him in direct proportion to the degree of his attractiveness . I knew him—but I had never really talked to him. He knew me, but he had never really looked at me. It was not to be expected that he would; for very beautiful young thing in Troy was ready to fall like a ripe peach into his hands." Her voice tapered off into silence. Suddenly, she put her hands to her ears; removed the jade earrings. Quite calmly she began to take the hairpins out of her hair.

After a few seconds, Miss Storrow resumed her narrative. But all the time her fingrs were flashing through the bat masses of her dusky hair.

"I was awfully conscious, under my shy awkwardness, that I was a complete failure in every way a girl can be a failure. And I was very rebellious about it. On day—I don't know quite how—it occurred to me to wonder if that failure was necessary. There were half a dozen girls in Troy who were extraordinarily successful socially and great favorites with the men. I began to watch those girls. And do you know, soon I came to the conclusion that much of it was the result of a system. Not all—there are some women who are born to conquer. It's natural with them. They don't have to think of it. But with the rest, is is a system. And I was convinced that I'd found that system, and I was perfectly certain that I could put it into operation. But I had to try it in a place where nobody knew anything about me."

By this time all the pins had emerged from her hair. A curious figure, in the midst of its shining torrent, she sat for a moment silent.

"I came into a small legacy a few months ago. Instead of putting it to a useful purpose, I decided I would use it proving my point. I had one friend—one true friend—Alice Robinson. I went to Alice and told her my entire plan. I said to her, 'There's only one way in which you can help me, Alice, and that is to send a letter to your friends in the East warning them against me as a flirt.' That was the one you received from her. I wrote it.

"So I came East. I went to New York and spent one solid month just buying clothes—the clothes I'd always wanted and never had. I studied those clothes down to the finest detail. I said to myself, 'Every time I enter a room it's going to be as though the lights were suddenly turned up!' A clever hair-dresser experimented one whole morning, trying to find the most striking way to do my hair. I went to a beauty shop and paid them to teach me how to use cosmetics."

Suddenly Miss Storrow lifted the mass of hanging hair; submitted it to a few slashing strokes of a side comb; pulled it straight back from her forehead. With a few lithe turns of her hands, she coiled it into a stiff, hard knot; pegged it down. "Ladies," she continued, "behold the original Sibyl Storrow."

The metamorphosis was almost unbelievable. The picturesqueness, which the flat, curved, black loops had given to a rather pale face, had entirely disappeared. Her eyes had no beauty to help in illumination. With the earrings gone, she had turned ordinary.

The five women stared, fascinated.

"You see, I felt if I could come, with all this preparation of clothes and cosmetics, into a community which had been warned of my flirtatious habits, I could pull off a sensation. And I did it."

Phoebe was the first to recover. "You certainly did."

"I might say that I don't expect

Suffered Since Childhood

Kidneys at the Root of the Evil

Think of it! The joys of youth marred by agonizing pains, and all hopes of a bright future blotted out by thoughts of a life burdened with Backache and other sufferings.

Such was the case of Mr. A. Cail until a good friend advised him that there was a remedy for his trouble and he would find it if he used Gin Pills. Read what Mr. Cail says:

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This remarkable testimonial was written by a man whose statement cannot be doubted. Mr. Cail's reason for writing this history of his case was—gratitude for the relief that Gin Pills brought him. Wouldn't you do the same if your case was similar? If you suffer now—don't suffer any longer. Use Gin Pills and obtain relief from Kidney or Bladder Trouble, and the pain, suffering and inconvenience that they cause.

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By taking Milburn's Laxa-Liver Pills you will find that the bowels will be kept regular in their action, the poisoning of the blood and general weakening of the system is rectified, and the entire body is restored to normal condition.

Miss Elsie Zimmerman, Thedford, Ont., writes:—"I have used your Milburn's Laxa-Liver Pills for constipation, and have never found myself troubled since. I am very glad to have found something to cure me, and will always tell everyone about them who is troubled in the same way as I was."

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you women to forgive me," Miss Storrow went on with a smile which was very different from her premeditated vampire sparkle, "but I know that you are going to do it. The instant I laid my eyes on you, I knew you to be a dandy bunch of women. You don't know how I hated flirting with your husbands. But it had to be done."

Mrs. Meredith smiled, "Yes, I see that."

"What you don't understand is what hard work it was. It really was the hardest kind of work. I made a discovery and I think I have proved it. That discovery is—that any woman of intelligence can be a vampire if she will give her whole attention to it and keep on the job every instant. She's got to ignore other women entirely, of course; ride roughshod over their feelings; behave exactly as if thy weren't there. Sh's got to devote herself to the men all the time. If they start to draw away, she must leap on them like a lion on its quarry. Almost any woman who is willing to give all her time to it, can do this. But I reiterate, it's hard work. And now I'm going back to Troy. . . ."

"But not before you lengthen your stay," Phoebe interposed. "And give us a chance to get really acquainted with you. Won't you come here to visit me?"

"If I'll give her up," Mrs. Meredith put in gallantly.

"Let us share her up," Phoebe retorted.

"Are you going back to Troy," Mrs. Brodbeck demanded, fascinated, "to dazzle, enchant and enslave?"

"Precisely that! Within three days I'll be the talk of the town. Those earrings might just as well be rings of electric lights. That lip-stick might just as well be a stick of dynamite. For the first time in its history, Troy will know I'm there."

"And Jerry?" Mrs. Day queried.

Miss Storrow mediated a moment. And as she meditated, involuntarily she pulled her hair into long flat loops on her brow; caught them there with invisible pins. The feat acocmplished, she sought the lip-stick, mechanically applied it. "Yes—Jerry. I don'tknow whether I want to marry Jerry or not, now. I've seen so many fine men in the meantime. But if I still like him, Jerry is doomed. I suppose, in that case, he'll propose to me about a month after I get home."

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PENSIONS FOR DEPENDENT MOTHERS

Strongly Advocated in Paper Read by Miss Elizabeth Robinson at Kennebecasis W. I. Meeting.—"Children a Nation's Most Valuable Asset."

We are all familiar with the word Pension and understand it to be an allowance paid by the government for services performed. We hear of soldier's pensions, soldier's widow's pensions, pensions granted to government officials, railroad officials, also to school teachers who have taught throughout the length of 35 years—these are on the **retired list!**

What I want to bring before you this afternoon is the subject of Pensions for dependent Mothers with children—Mothers in **Active Service.** You may have in your mind cases where the husband dies, leaving no means to support his family, or any relatives able or willing to help. It may be the family have been extravagant or poor managers; but be that as it may, poverty is not always the fault of the needy. For instance, a man on an average salary marries and provides a home. He pays for rent, fuel, food, clothes, etc. The years go by and three, four or five children are born, all adding to the family expense. I ask you where is the money coming from to pay life insurance, or lay by for a rainy day?

Or it may be, by good management on the part of husband and wife, they have been able to save something each year. Sickness comes, the husband dies; funeral expenses and doctor's bills are paid and the mother is crushed with sorrow and care. Think of the desolation of that mother, bereft of her husband and knowing of no source of help for herself and children. The thought comes over her, what can she do to earn for them and herself; shall the sword enter still deeper into her soul and must she have the awful experience of giving up her children and placing them in some institution or almshouse? Rather than do this she will work past her strength, deny herself rest and nourishment in order to keep her little ones to herself; so she struggles with her burden. It may be an older child is kept from school to care for the home and children while the mother goes out towork through the day; but hard work and small pay leave their impress on mother and children.

Now should our country, with all its riches of forests and fields, mines and waters, allow this to be so? It has been said that "children are a nation's most valuable asset." Then it is up to our country to safeguard the children and the mothers!

With the terrible loss of life of our best manhood during the past four years, the country should see to it that the children of today, who in a few short years will be our men and women, be so trained that they become good citizens in future years. Now where and by whom will the child be best rtained, intellectually, physically and morally? Is it not in the home and by the mother?

Children in an institution are treated in groups, not individuallq. Any one who has had experience with children know that even members in one family differ in tastes and temperament, and the way to treat one child is not suitable for all.

In a well-managed institution the discipline is so rigid—they must rise, dress, eat, study and play—all by the sound of a bell; their whole training and education is such that at the age when they are dismissed from the instiuttion they are without self-reliance or fitness for the duties of life. The best citizens are those brought up in homes, where they enjoy the freedom and privilege of family life; and their early home life. where brothers and sisters enjoy together their childish games and squabbles, tend t obuild up character to withstand the stress and temptation of manhood and womanhood.

How is it possible t o give these privileges to orphans of the poor? Simply through the Legislature of our Province! Let the Government pass a bill to pension widows with chil

Neat and attractive Oxford with wing tip and military heel.

What the Dealer Means to You

THE shoe dealer does more for you than you perhaps realize. He not only carries a variety of styles and sizes for your convenience, right in your town, but he renders you a service which no one else can render in the correct fitting of your foot.

This is very important, not only for the sake of comfort, but also because the appearance and the life of your shoes depend upon correctness of fit. No matter what price you may pay for a shoe, it cannot give you its full service if it does not fit your foot.

And more than that: ill-fitting shoes often cause foot troubles, even though they may *feel* perfectly comfortable at first. Correct fitting shoes are essential, even if it means extra time and effort for you to get them.

So you should go to a dealer in whom you have confidence, let him advise you as to the type of shoe which is suited to your foot, and give him time to fit you correctly. You will get better service from your shoes if you will do this, and they will look better.

Write for our booklet "How to Buy Shoes" which gives more information on this important subject. It is sent gladly to any address in Canada upon request to our head office at Montreal.

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dren. Grant them an allowance for each child under, say 16 years. The mother to make application for allowance; the cose to be under the supervisors whose duties shall be first to investigate the case and provide definite proof that applicant has a right to allowance. After the allowance is granted, they must see that the home is a fit habitation, the mother caring for the children and home, the children being sent to school, being properly fed and clothed, and state of their health;such a report to be furnished to commissioners once a year. When the applicant knows the rules regarding the allowance she receives, such knowledge will be the means of strengthening and encouraging her to do her best.

The alolwance must be **adequate** for hte proper up keep of the home; it must be **permanent.** We all know how much better we can plan the outlay when we know just how much our income is.

Government allowance for dependent mothers is not **charity!** It is a salary paid to mothers for doing work for state or country. We all know of cases during last year where boys were taken to don the khaki and the country felt it was its right, though the mother of those boys had never received help from the country in the care and expense of rearing them.

Pensions for mothers was first tried in the State of Illinois in July, 1911, and since that time, not quite 8 years, 27 states have adopted it. From statistics gathered, these states find the method of granting allowances to mothers for their cihldren in their homes, much more economical than paying an institution to care for them, and all right thinking people will agree that it is the humane way.

It is known in different states and countries by different names — as Mother's Pensions, Mother's Allowances, Mother's Compensation State Salary.

In Australia and New Zealand compensation is paid to mothers.

In Canada but two provinces provide thus for mothers, Manitoba in 1916, and Saskatchewan a little over a year ago came in line. The province of Ontario is moving for it and trying to have the act passed at this session of Legislature.

What about New Brunswick? Shall we be the last of the list of provinces to move in this? Surely it is women's work to take an interest in this movement. We cannot and must not be indifferent about this subject! We know there are many sad cases of needy mothers, broken-hearted and discouraged to whom a permanent allowance would truly be a God send. Remember He who spoke those words "Inasmuch as ye did it unto one of the least of these, ye did it unto Me." Also "Inasmuch as ye did it not unto one of the least of these, ye did it not unto Me."

The motto of the Woman's Institute is **"For Home and Country."** Does this motto not embrace Mother's Pensions? Most assuredly it does! We hear so much now about Reconstruction. Would it not be a good and glorious piece of reconstructive work to stretch out and do something to make the lives of our needy orphans better and brighter, and throw round them the influence that will make them become good citizens—able and willing to help make this Canada of ours a Righteous Nation.

I ask each member of this K.V.W.I. to talk over this subject with your neighbors and friends, talk of it with your husbands and work for it until the Legislature of our Province passes an act to protect the God given rights and privileges of Motherhood.

"I don't think I can go, Jessie, for I just feel wretched"

"OH, I'm so sorry, for I did so want you to be there."

"I hate to disappoint you, dear, but you know how miserable I have been lately."

"Yes, but I thought you were better."

"So I am some days, and then I just seem to be as bad as ever again. I get so weak that I do not feel able to stir."

"What is the trouble ?"

"The doctor says I am anaemic. He says the blood is thin and watery, and I do not get the good of the food I eat. Goodness knows I do not eat much, either, for I have no appetite."

"Why not try Dr. Chase's Nerve Food?"

"Would that help me, do you think?"

"I do not see why it should not. You remember how pale and weak I used to be. Well, it was nothing else than Dr. Chase's Nerve Food that cured me. And I am not looking as though I needed any medicine now, am I?"

"If I could only be strong and healthy like you are, Jessie, I would give anything."

"You never will be unless you try, and I do not think you would be disappointed with Dr. Chase's Nerve Food. It is not only my case, but there are so many other girls we know who have been benefitted by it."

"Will you get me a box at the drug store, Jessie, and I will start right in to-day? If this will only give me an appetite and make the blood rich and red, so that I can get some strength and color, I will be a happy girl."

Dr. Chase's Nerve Food is so gentle in action, and yet so potent as a restorative, that it is a great favorite with women of all ages. It seems to be admirably suited to the needs of their delicate nervous systems, and on this account it has come to be universally used as a means of restoring vigor and energy to a rundown, nervous system. 50 cents a box, 6 for $2.75, all dealers, or Edmanson, Bates & Co., Ltd., Toronto. On every box of the genuine you will find the portrait and signature of A. W. Chase, M.D., the famous Receipt Book author.

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Youre gratefully,
MRS. C. D. PRINCE.
Nauwigewauk, Oct. 21st.

THE DOUBLE STANDARD

(By Mrs. Gertrude Eastham Graham, Elmsdale, N. S.)

The present age is one of a vast mental awakening. New ideals, broader views, and more independent thought are causing moral and intellectual revolution.

In no phase of society is this more clearly seen, than in the gradual change of the relation of the sexes.

There has come down to us a terrible injustice, which has had its growth for centuries, namely, the double standard of morals for men and women.

For women is marked out a straight and narrow path, hedged in by conventions, and slavish restrictions. Any deviation from this path, whether great or small, brings its condemnation and punishment from society. If a woman takes one mis-step she becomes an outcast, regardless of the fact that youth, or igorance, or some man's base treachery is responsible. Repentance, and a blameless after life

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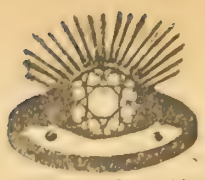

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after four years of war service in England, Belgium, France and Canada, has again taken over the management of the
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Butter Parchment at Farmer Office

avail not to change public opinion. Self righteous hypocrites will tell you that when a woman falls, she falls so low that she can never again rise. This is untrue, as any student of human nature wil ltestify. I, myself, have known girls whose youthful purity of mind and soul were sullied; who afterwards became lovely upright women, true lives and mothers. those who meet temptation. But the sin itself they must not condone. And let them require that the father of their children be one who is her equal in moral growth, one whom she can look up to, honor and respect because he has respected himself.

We are told that women know little of temptation, and that if they go astray it is because of some strain of badness in their nature. Would that these complacent moralists could hear the stories that girls and women tell to their fellow sufferers, from men who pursue them until like hunted deer, they fall a prey; or, through some chance escape. And, again, must we evade the fact that a woman's physical temptation, though different from a man's is as strong. Is it man alone, who feels the attraction and stirring of passion through the physical charm of the oposite sex? Ah, no! This is a fact of which we should know more. And right here let me ask, if man boastingly regards women as the weaker sex. how can he expect her to have a stronger will to overcome temptation? For, in addition to struggling against her own nature, a woman must constantly guard and fight against the advances she meets from the majority of men she asosciates with. At this men will be amazed. They will tell you that no woman receives unwelcome attentions that she does not invite, unless it is from some ruffian or moral outcast. But I will say that the average man will protect a woman from every man but himself. And so instead of looking to a man for strength and guidance ,women are taught, through experience to be constantly on guard.

On the other hand, to the male sex has been given freedom of a kind. Man is not held accountable by society in general for sex immorality. He consders that it is his privilege to sow wild oats at will. Women are taught that it is natural for man to give free rein to his passions and they must be forgiven, and made excuses for. Why is this so? Must we believe that the Creator made it impossible for man to be master of himself? Ah, no! We are learning differently. For so long this has been the general opinion and even physicians have counselled young men that the sowing of a few wild oats was necessary for their health, but now we know that chastity is as possible and necessary in man as in woman. Man in general must be led to a higher plane. He must realize that the power of procreation is a wonderful gift, which he must hold in trust, and that the strength of his manhood comes through conserving, and not squandering his sexual powers. It is impossible that a man who has spent years in dissolute living, can make a good husband or father. And then again, another reason why men should live chaste lives. Thousands of babies still-born, or born blind, defective or deformed, ar ethe result of their father's sins.

Thousands of women, pure, innocent and trusting, lose their lives or have their health and happiness ruined, because they contract some loathsome disease, the product of their husband's youthful follies. Could this knowledge be burned into the minds of men and women there would come a cry for equal purity of lives. Women must demand that the men they marry can show as clean a past as they demand from their wives.

,What right has a man to ask of a woman that she be pure and innocent when he has not been?

Thank God, there are enough men, who are strong enough to be master of themselves, to prove that the equal standard of morals is practical and best. Many of these men are doing much to raise the standard of public opinion, but as in the way with all uplift connected with family life, the great burden of responsibility rests with the women.

Mothers must teach their children the beauty and truth of the mysterie of the origin of life. They must teac their boys to reverence women, t respect themselves; they must teac their daughter purity and loftiness o ideals, to be a help and comrade t man, never his tempter. Wome must always be charitable and gent with the sinner, and sympathize wit

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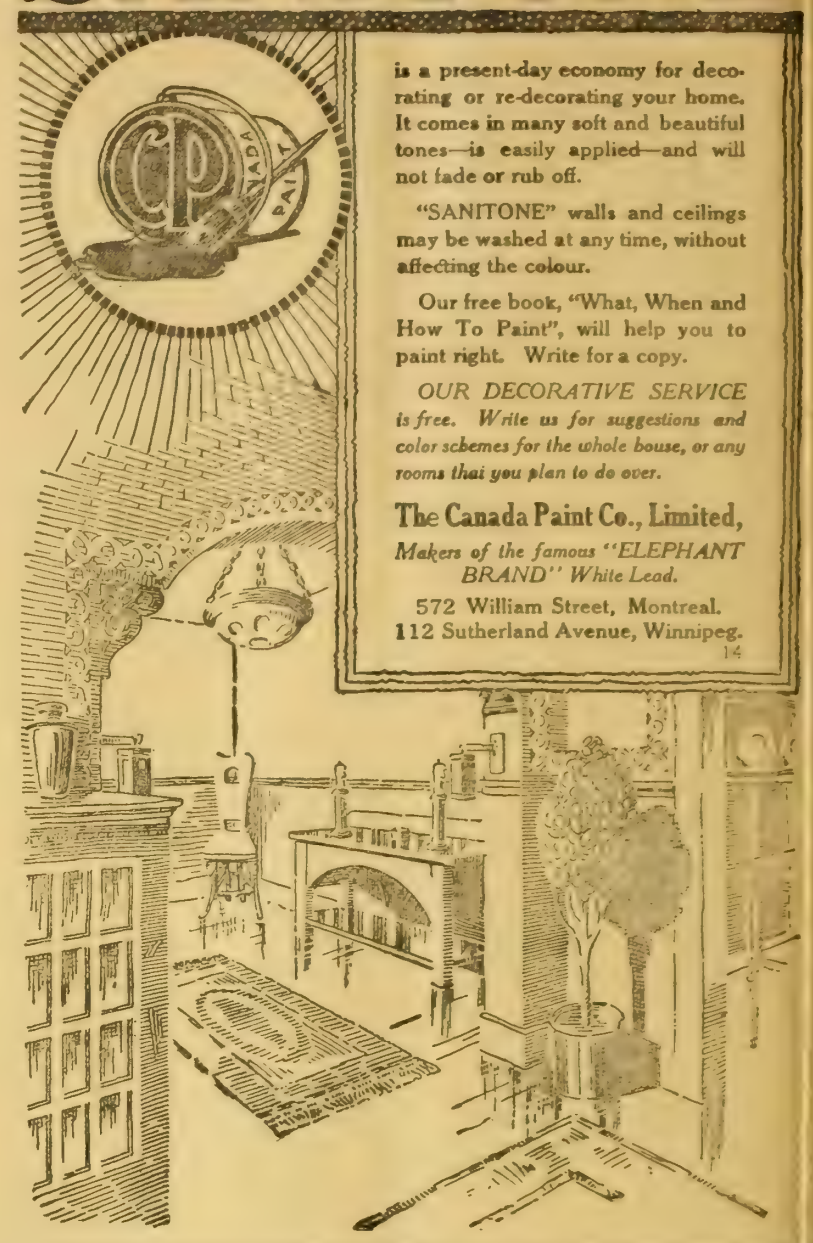

Fruit Packages

We Manufacture Strawberry Boxes and Crates for same, 6 qt. Baskets, Apple Boxes, Box Shooks, Apple Graders, Wheelbarrows. Now is the time to lay in a supply of Fruit Packages for the coming season. We have a good stock on hand, order early and ensure prompt shipment. Price on application to

Hantsport Fruit Basket Co., Ltd.
HANTSPORT, N. S.

those who meet temptation. But the sin itself they must not condone. And let them require that the father of their children be one who is her equal in moral growth, one whom she can look up to, honor and respect because he has respected himself.

SIMPLY SANDWICHES

The popularity of the sandwich is no longer confined to the picnic season. Its vogue at present is due to the strugggle for simplified meals which are a boon to the overworked housewife and to much-abused digestive organs. It is the substantial sandwich suitable for luncheon or supper that I want to tell you of here.

Of these, perhaps the meat sandwiches lead. They are made of cold boiled or baked ham, roast beef, veal chicken or tongue. They may be varied in a number of ways, from the plain mustard and sliced meat of your childhood to something more inviting by chopping or grinding the meat and combining with parsley, celery, sweet pepper or onion, and moistening with a salad dressing.

Remnants of two meats may often be mixed with good results. Scraps of left-over vegetables give a delightful flavor to most fillers. Cold fried calves' liver makes delicious sandwiches. Chop very fine, season rather highly, add minced onion, a hard boiled egg and dressing enough to spread easily. Serve with lettuce-leaves between thin slices of rye bread and butter.

Egg and Vegetable Fillings

Another rye-bread sandwich which is extra good served with baked beans consists of hot crisp bacon and very thin, freshly made toast. Pressed or jellied meats make pleasing fillers, and often the cheaper cuts of meat can be utilized in this manner with as much success and flavor as the more expensive portions. The cheaper cuts of steak, fried to give the "brown" flavor, ground and seasoned, are very nourishing and palatable.

Next in importance for meal sandwiches are eggs. The common lunch-wagon variety, fried on both sides and served with minced onion, are good when hot. But a better method for home consumption is to scramble the eggs in butter or bacon fryings, allowing one tablespoonful of milk to each egg. Season and cook over a moderate blaze, stirring constantly until creamy. Spread between brown or white bread and serve hot. A bit of finely chopped ham, bacon, or onion adds materialy to this sandwich.

Hard boiled eggs may be combined with finely chopped sweet pepper, seasoned and moistened with mayonnaise. These are extremely good. If the eggs are boiled half an hour they will mash easily wtih a fork or may be put through a potato ricer. Celery or olives could be substituted for the pepper.

Cheese in a New Guise

In fact, hard-boiled eggs combine with almost any of the green vegetables: string beans (cooked, of course) and cucumbers, either pickled or fresh beets, etc., are especially tasteful. Left over vegetables should be made into salads—then spread abundantly between thin bread and butter.

Sandwiches of this sort should be eaten after spreading, as they are juicy and become soggy if they stand too long. Sweet corn, well cooked, chopped sweet peppers, and a hard-boiled egg make a sandwich that is delightful.

There are a number of ways in which cheese can be introduced as a filler for folk who like it. Crumble one hard boiled egg and rub smooth with one tablespoonful of melted butter. Add salt, pepper and a dash of mustard. Mix with one-fourth of a pound of grated cheese and add about one tablespoonful of vinegar, enough for the desired thickness. This filler may be used with either crackers or brown or white bread and is quickly made.

Then there is "Glorified Rabbit" that is splendid on toast, a rarebit sandwich. Melt one tablespoonful of butter, add one-half cupful of cream. When hot, stir in two tablespoonfuls of grated cheese and the same amount of potted ham. This is a most delicious filling.

Nuts as Sandwich Fillers

Nuts in a great variety of combinations make nutritious fillers. Peanuts are perhaps the favorites for ordinary use. Chop very fine, or preferably using a grinder, running them through several times to secure an oily paste. A scant cupful of the shelled nuts make a small jar of the paste. Mix well with a tablespoonful of olive oil or melted butter, a dash of red pepper and a little salt. This is less expensive than the ready made peanut butters, is equally as good and will keep a week in a cool place. English walnuts chopped with celery or olives make nice sandwiches. Pecans and well-cooked prunes chopped and mixed with a good salad dressing have a novel fiavor and make a satisfying meal with milk as a beverage.

If one habitually makes use of left-overs for sandwich fillers, it is a wise plan to keep mayonnaise on hand. There are a good man recipes for dressing of this kind; but here are two tha tare guaranteed to keep indefinitely in a cool place. Beat thoroughly the yolks of three eggs. Add one tablespoonful of sugar, one tablespoonful of vinegar, juice of three lemons, salt and red pepper to taste. Cook until creamy, stirring constantly. This dressing is best with nuts, hard-boiled eggs and fruit combinations.

Another Dressing for Sandwiches

A better one for the meats and vegetables is made as follows: Rub one tabelspoonful of flour with three tablespoonfuls of butter, one teaspoonful of mustard, a little salt and pepper. Add this to the well beaten yolks of three eggs and half cupful of vinegar. Let it boil up once and cook in a double boiler one-half hour. If too thick when ready to use, dilute with cream to the desired consistency.

One beauty about this dressing is that when eggs are scarce, you may use only one, perhaps adding a little more flour, and the dressing is still good for the sandwich fillers.

Considering the subject and the contents of your pantry, many unusual and delicious fillers will naturally occur to you. Things too little in quantity to be served by themselves often spread a number of sandwiches, giving you several different kinds perhaps, and the variety to a table that the modern appetite craves.

There are numerous sweet sandwiches which often do very well as a finish to the meal, but they are better adapted to pink teas than to the hungry man's supper.

It is remarkable how quickly a sandwich meal may be put together, if the dressing has been already prepared. If one is in a hurry, vinegar alone, seasoned with pepper, salt and mustard, gives the desired piquant flavor to a meat or salad sandwich. The hot-fillers may be made in the chafing-dish and served at once. The others are spread in advance and served alone or with a simple vegetable or pudding.

RIGHT ATTITUDE OF MIND

One of the most helpful factors in the harmonious development of mother and child life is a right attitude of mind. It is, of course, most desirable that it be one of contentment and peace; but too often mothers, in addition to the work of housekeeping and the rearing of children, are obliged to contend with problems of sickness and family disagreements. However, if she can meet such situations with intelligence, courage and self-control, she will create a home atmosphere which will be measureless in its influence.

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ROOFING

You can see the quality of Barrett's Everlastic "Rubber" Roofing as soon as you open the roll.

The best of materials, the utmost skill possible in manufacture, and the experience of over sixty years in making high-grade roofings goes into every roll.

Thousands of rolls of Barrett's Everlastic Roofing have been used by the Canadian and U. S. Governments, the leading railroads, and the largest contractors in the country. Dollar for dollar, it is the best "rubber" value obtainable today.

Don't waste your money on poor roofing that will need to be renewed in a short while. It will pay you better to insist on Barrett's Everlastic and see that you get it. The name Barrett is your guarantee against disappointment. You will find it on every roll of the genuine Barrett Roofings.

THE BARRETT CO., LIMITED
(formerly The Carritte-Paterson Mfg. Co., Limited)
ST. JOHN, N.B. HALIFAX, N.S. SYDNEY, N.S. Ad. No. 1

TUNGSTEN VS. CARBON LAMP

Although great advance has been made in the electric lamps some people still hold to the old carbon lamp. When it is stated that the tungsten lamp gives more light for at least half of the expenditure of energy some seem to think that that is merely advertising talk for the company who manufactures the lamps. Such is not the case. The ordinary 16-candle power carbon lamp is rated at 60 watts. The 25-watt tungsten lamp gives nearly, if not quite, 20 candle power. Thus, with the carbon lamps one is paying for 3¾ watts per candle power, while with the tungsten lamp of 20 candle power only uses 1.25 watts.

LOST OPPORTUNITY

The energetic newspaper reporters on the presidential peace ship have missed one valuable piece of news. They have made no mention of the president being seasick or what he threw up if he was sick. This would have been real news for never have we read of a president being sick enough to cast up acounts. Think with what consternation the world would have seized upon flaring headlines saying: "President Wilson Gives Up Ham," or "Troubles Within Worry Wilson," or again "President Royally Banquets Father Neptune." Here indeed American journalism has been caught sleeping at the post.—Johnstown Breeze.

STOVES and Utensils.

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FEED-BOILERS, etc.

THE SMITH FOUNDRY COMPANY, Ltd. - Fredericton, N.B.

Kings County, N. B. Representatives, - - - SMITH BROS., Sussex.

It's a matter of choice!

LILY WHITE
CORN SYRUP

Some people prefer the white (Lily White) corn syrup for table use; others, the golden, cane-flavored, Crown Brand.

Authorities strongly recommend Lily White for PRESERVING, and candy-making.

CROWN BRAND
CORN SYRUP

Lily White and Crown Brand Corn Syrup can be used for all cooking purposes.

Both are pure food products, nourishing, high in food value and are great helps to household economy.

Sold by Grocers everywhere—in 2, 5, 10 and 20 pound tins.

The Canada Starch Co. Limited - Montreal

FAKE GRAIN VARIETIES

(Experimental Farms Note.)

Each year many farmers are the victims of plausible agents who are selling so called new varieties. Making extravagant claims they charge a corresponding price and only too often the farmer who naturally desires more productive varieties if obtainable, pays an exorbitant price for a supposedly new and prolific sort, which is either an old variety camouflaged with a new name or else a selection whose qualities are entirely unknown. Being divisible into classes, these agents and their claims can be grouped conveniently as follows:

FIRST, those who take a high yielding, prolific variety such as Banner or O.A.C. No. 72 oats, give it another name and introduce it as a new variety.

SECOND, those who are selling a variety that has been multiplied from a peculiar plant or from extraordinary heads found in the general crop. The producer thinking it a valuable variety, offers it for sale before its qualities are known.

THIRD, those who are offering for sale to a few limited customers only, a wonderful variety that was produced by a secret process of selection or else has been grown from a few seeds found in th tombs of the ancient Pharaohs.

A fourth class might be made of those who sell a variety for what it is, but make extravagant claims for its yielding ability. This is well illustrated by the Alaska or seven-headed wheat.

The agent in the first case is a financial shark who is obtaining money by false pretences. He perhaps does the least harm of any beyond the confusion created in the nomenclature of varieties and the money which he takes from the farmer.

In the second case the agent may be acting in the best of faith and with the conviction that his claims will be justified by the resulting crop. Perhaps they will be, but the varieties are legion that have been introduced in this way and have been found worthless in comparative tests with standard varieties.

The third agent though, is the real out and out grain fakir and should be liable to prosecution. The farmer who is deceived by his pretences almost deserves to pay the price of his credulity.

It is the right of any person who has multiplied out a selction of grain to sell it for what it is and charge any price he sees fit. Against these well-intentioned, legitimate transactions we have nothing to say beyond warning the farmer, that at the best he is likely only buying an old variety and that exceedingly few of these amateur selection are ever of value.

What is advisable is that in every

Auction Sale of Dairy Cattle!

Owing to illness I am obliged to dispose of my dairy herd of Pure Bred and Grade Holsteins at my farm,

Coxheath, Cape Breton, May 14th, 1919.

At 1 P. M.

10 head Pure Bred Holsteins, 3 Mature Cows, 1 three year old heifer, and 6 heifers in calf, 2 will calf shortly, other 4 in calf about two months.

16 mature Grade Holstein Cows and 3 Mature Grade Jersey Cows, the greater part to calve during August and September, and 3 Grade Holstein heifers, safe in calf. This herd is without doubt the finest in Eastern Nova Scotia, if not in the Province.

Also Empire Milking Machine, consisting of 2 double units, complete with Gasoline Engine; also 1000 lb. Empire Separator, only used one month.

TERMS—Cash, or 1, 3 or 6 months approved joint notes with interest at 7%.

D. R. NICHOLSON, Owner,
Coxheath, C. B.

Advertise in the Maritime Farmer

Beauty, Fire-resistance, Economy combined in this Roofing

MANY costly homes have been roofed with Brantford Asphalt Slates. Architects select these slates because of the artistic beauty of the soft, harmonius shades of reddish-brown and dark green, which are the natural, unfadeable colors of the slates.

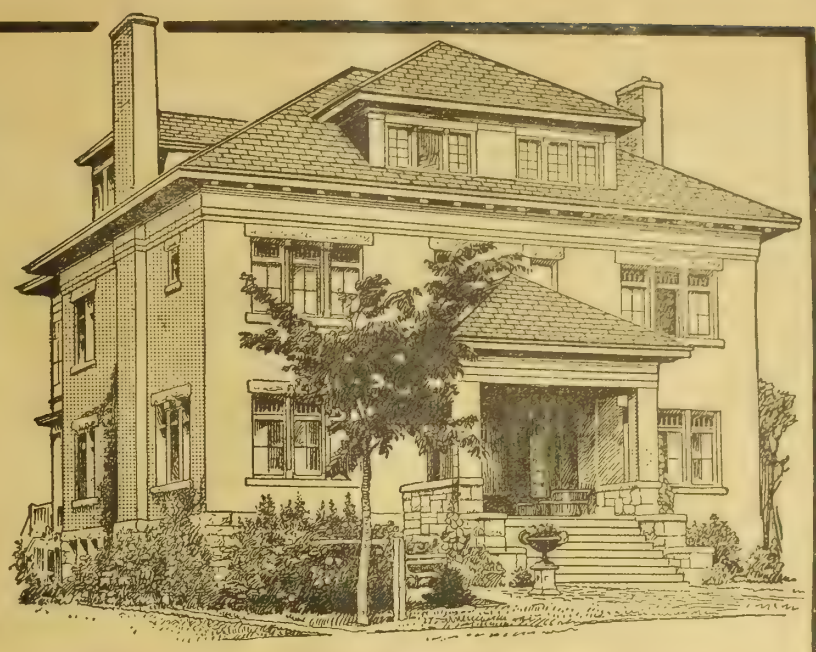
Brantford Asphalt Slates

are made from a special grade of long-fibered felt which is exceedingly absorbent, so that it will take a very heavy and thorough saturation and coating of asphalt and on top of that a surface of crushed slate. The slate is rolled into the asphalt while the asphalt is hot and becomes part and parcel of the roofing. It cannot be washed off, blown off, or even kicked off by the the heel unless you use force enough to tear part of the asphalt with it.

The regular Brantford Asphalt Roll Roofing has been on roofs for many long years and shows little or no signs of wear. Brantford Asphalt Slates have the additional slate surface and are that much heavier. They are also laid to overlap, adding still further to the wear-resistance of a roof. It seems reasonable to expect that they will last almost as long as the walls.

Non-absorbent—Do not get watersoaked

Asphalt is one of the most waterproof materials known, and Brantford Asphalt Slates being non-absorbent, do not get watersoaked and rot. Neither do they crack, break or fall off. In fact, they possess one great advantage over any other form of roofing material:— they cement together under the heat of the sun shortly after



Home in Kingston roofed with Brantford Asphalt Slates

they are laid, resulting in a solid pavement-surface on the roof under which rain or snow cannot drive and no individual slates become loose or blow off.

Brantford Asphalt Slates are wonderfully fire-resistant and are approved by the fire insurance companies, being put into the non-combustible class. Flying embers from burning buildings, sparks from threshing engines or railroad locomotives die out on Brantford Asphalt Slates. If a fire should start in an interior of a building roofed with them, the slates act as a blanket and retard the spread of the fire.

Brantford Asphalt Slates are moderate in cost, and are very rapidly laid because they are regular in size and pliable. They can be laid over ridges or curved surfaces, and every one is perfect. No knots or worm holes to look out for. No care required to avoid splitting them when nailing. And you can reroof an old building with Brantford Asphalt Slates without any extra bracing being required.

Send for illustrated booklet

Our booklet "Permanent Roofing Satisfaction" and a sample "slate" will be mailed on request. Both are worth getting if you are going to do any roofing this season

Brantford Asphalt Slates are suitable for country homes, city homes, golf clubs, churches, garages, barns or any kind of a pitch roof where an artistic effect is desired.

Brantford Roofing Co. Limited

Head Office and Factory, Brantford, Canada
Branches at Toronto, Montreal, Halifax

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case before buying a variety that he intends to grow as a general crop, the farmer should consult the reports of his nearest Experimental Station. The remedy for the actual frauds that are perpetrated is in his own hands. As long as he will buy the agents will sell, and the efforts put forth by the cereal stations of Canada for the improvement of crops will contine to be partially frustrated.

HORSE BREEDING

Horse breeding in Nova Scotia has experienced a decided lull during the past two years. Notwithstanding this fact many farmers having horses to sell cannot find buyers. On the other hand dealers have brought in many car-loads and have found a quick-market at top prices. These dealers are buying in Ontario and Quebec. They are able to get the types which command a ready sale because farmers in these provinces are using pure bred registered stallions. In Nova Scotia the use of such is on the increase but even yet fully 75% of the stallions used in Nova Scotia belong to what is techinically known as the "scrub" class. No further argument would seem necessary to convince every farmer that it is well worth while to pay the extra cost and travel the extra distance to reach a pure bred horse.

The N. S. law in respect to the enrollment of stallions was passed for the purpose of putting a premium on this class. Under the law every stalion in Nova Scotia must be enrolled with the Dept. of Agricultue. Unless he is so enrolled no charges made for service are recoverable by legal action. Enrolment is now taking place, and later on inspectors will be sent to various parts of the Province, where violation of the Act will be dealt with. It is the general opinion among those who know the business that the present year should see a big increase in the breeding of mares to the best that can be reached.

BOSTON BUYING N. S. POTATOES

For a time it looked as if Nova Scotia farmers would have large quantities of last years' crop of potatoes left on their hands. Fortunately for us, the expected shortage in the Boston market has taken place, and Boston buyers during the past few weeks have purcahsed many cars at fair prices. It is understood that the shortage there is sufficient to take care of all are good marketable potatoes left in the Province.

The clean up should stimulat considerably more cropping than was planned for a month ago, especially in view of U. S. Food Controller Hoover's prediction that wheat will be higher than ever next fall. There is plenty of feritilizer in the country for all the increased production that can be attempted. Until recently sales of fertilizer were somewhat below the mark, but with the approach of the planting season the demand has sharpened. The fact is that there is absolutely no fear of over-production in any of the great food commodities this year.

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Reduces Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Boils, Swellings; Stops Lameness and allays pain. Heals Sores, Cuts, Bruises, Boot Chafes. It is a SAFE ANTISEPTIC AND GERMICIDE

Does not blister or remove the hair and horse can be worked. Pleasant to use. $2.50 a bottle, delivered. Describe your case for special instructions and Book 5 R free.
ABSORBINE, JR., antiseptic liniment for mankind, reduces Strains, Painful, Knotted, Swollen Veins. Concentrated—only a few drops required at an application. Price $1.25 per bottle at dealers or delivered.
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Absorbine and Absorbine Jr. are made in Canada

INSPECTING THE FORD IGNITION SYSTEM

The sugegstions here given comprise the most important points in an inspection, such as should occasionally be made, of the battery and coil system in use on Ford cars. See that the four flexible conductors connecting to the timer are tightly clamped under their binding screws and that none of them have become partially broken by the movement of timing the spark. If any of them are particularly limp, at some one point, a break may soon be expected there if they are badly oil soaked, insulation and the contact segments have worn badly out of true, missing will result. The spring which holds the roller in contact should be sufficiently strong and the whole timer should be kept clean and well lubricated with light oil. The timer case should be firm and not "wobbly" on its bearing. Remove the coil box cover and, with the engine running, see if any of the vibrators spark noticeably. If they do, there is something wrong. Examine the contact points and see if any are badly blackened or burned so they do not make a full, flat contact. If so, they should be dressed down with a jeweler's file until they are smooth and well fitted. Be sure that the points of each vibrator are left the correct distance apart, about 1-32 inch, as too wide separation may result in hard starting. This is adjusted by maens of the thumb screw. Should any particular coil unit have given repeated trouble, have it tested at the service station. Remove the magneto contact spring, by detaching the screws that hold in place its binding post in the top of the flywheel casing and make sure that no dirt has collected under it, that may break the connection. Remove the magneto contact spring, by detaching the screws that hold in place its binding post in the top of the flywheel casing and make sure that no dirt has collected under it, that may break the connection. Remove the plugs, clean their porcelains with a brush wet in gasoline and set the gaps between the points at 1-32 inch. Replace them in the cylinders and squirt a little oil around the seat of each and also between the porcelain and the packing nut. Start the engine and, if gas bubbles through this oil, try new gaskets under the shells of any that leak and tighten the packing nut or put in new packing washers where there are leaks around the cores. See that the plug cable terminals cannot jar loose and that the cables are not rubbing against the cylinders or crossed with others, also try for tightness all binding screws at the coil box switch and elsewhere.

NOISY VALVE GEAR

X. writes: The tappets of my four cylinder engine are very noisy and,

if they are adjusted very tightly, the engine will not pull. The valves are not of the overhead type. How can I get the noise out of them?

Answer: We are at a disadvantage in not knowing the kind of valve action in question, and can offer the following suggestion only: Be sure that the surfaces that strike together, to cause opening, are perfectly flat and true. If they are not, have them made so. In case the valve stems have worn loose in their guides, you need new guide bushings or valves with oversize stems fitted to the old guides, reamed out. If the push rods are too loose in their guides this looseness should be corrected or you will stil lhave noise from the "side slap." Sometimes, little ferrules, made out of vulcanized fibre, are fitted over the valve stem ends, so that the push rod strikes the less resonant fibre instead of metal. When you adjust the valves too closely, you doubtless cause them to hold open, when they should be closed, and loss of power necessarily results.

SHELLED GLASS

C. F| McD.: My old car carries a folding windshield and, when it is up, there is no space to look through between the section, as in recent shields, so that, in wet weather, driving bcomes very difficult and unsafe. What is the best way out of this difficulty?

Answer: Some drivers have overcome this trouble by taking the shield to a glazier and having a round hole cut out of the glass in such a part thereof as to enable the operator com-

fortably to see the road through it from his regular position at the wheel. Before taking down the shield the best place for the hole should be marked. It need not be so large as to let in a great deal of rain or cold air—a comparatively small aperature giving the driver a pretty good range of vision. Cutting the hole, without cracking the glass and grinding its edges smooth. is quite a delicate job, but a good glazier can do it successfully.

THE SMALL CAR AND HIGH SPEED

Very fact driving is always excessively expensive as compared with driving at moderate speeds. If a person habitually works himself to the limit or in other ways "lives fast," his health and longlevity are thereby sacrificed and it is the same with a motor car. It is creditably stated that the tires on a car, driven at an average of fifteen miles per hour, give twice the mileage of those on a car drivn at thirty miles per hour average speed. Overcoming the extreme air and road resistance and the high internal engine losses incident to very high speed makes excessive inroads upon fuel and oil supplies. The increased expense for repairs is, however, the heaviest penalty imposd for indulgence in exorbitant speed, not

MAY
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JULY
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Ford Passenger Cars
4 months' Free driving!
FOUR whole months of driving at no expense to you for repairs or tires. Four whole months in which there will be no depreciation in your car. This is exactly what will happen when you equip your Ford Car or Ford One Ton Truck with Hassler Shock Absorbers. They mean a saving of at least 30%—in all of these costs—the equivalent of four months of driving. Hasslers accomplish these things so easily because they protect the vital parts of the machine from road shocks and vibrations. It doesn't seem like the same car—and you'll say that Hassler Shock Absorbers far more than pay for themselves in improving the riding qualities. They will convert your Ford into an easy-riding, comfortable car for any purpose—more satisfactory—more economical—a machine that will last two or three years longer. You can satisfy yourself regarding the value of Hasslers without risking a penny.
HASSLERS "DOUBLE or TWINS"
For Ford One Ton Trucks Too!
HASSLER
TRADE MARK REGISTERED
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The Hassler Guarantee:
"Absolute satisfaction or your money back"
10-DAY TRIAL OFFER
Don't ride without Hasslers because someone tries to discourage you. They are a quality product—worth their price. The Hassler dealer in your vicinity will put them on for 10-days' trial. Your money refunded if you say so. Write for name of dealer and Trial Blank.
ROBERT H. HASSLER, Ltd.
122 Sherman Ave., N.
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form with ease, are operating at nearly their utmost speed. Controlability is usually far from being absolute, if indeed it is adequate for safe operation and the engine shows distress by the most noticeable and disagreeable

MALTESE CROSS TIRES
STRENGTH
ENDURANCE
—Strength—
—Endurance—
Two things the motorist knows a Tire must have to give him his money's worth. A "double portion" of each is served with every Maltese Cross Tire. STRENGTH is built into these tires by experts; ENDURANCE is proved in them by motorists.
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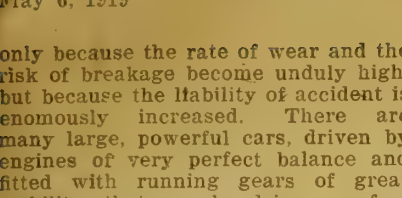
only because the rate of wear and the risk of breakage become unduly high, but because the liability of accident is enomously increased. There are many large, powerful cars, driven by engines of very perfect balance and fitted with running gears of great stability, that can be driven as fast as even an extreme devotee cares to drive, without any lack of controllibility or signs of distress upon the part of the power plant. Such cars are designed for high speed operation and, while the law of the costliness of high sped inevitably applies to them, operating them very fast is not unreasonably injudicious. Indeed, the possible speed of such cars is so high that they are seldom driven nearly to the limit of their capacity. There are, on the other hand, a vast number of small cars, with four sylinder engines of rather crude balance, geared very low and with small wheels and running gears of only moderate stability. Such cars when driven at two-thirds the speed at which a big car can pervibration. Such a car is not intended for high speed use and will prove extremely costly to maintain if used in this way. No piece of machinery operated at its limit of performance long proves satisfactory. If one must drive furiously one should use a big car, having surplus speed capacity, and not push a little car to early destruction.

CLUTCH DISKS STUCK IN ENGAGEMENT

G. W. D. writes: I have just been trying to put my car into service, after keeping it laid up during the winter, but find that the clutch will not throw out although I push as hard upon the pedal as I dare to. What shall I do?

Answer: We imagine that your clutch must be of the disc type and that the plates have remained pressed together so long that their surfaces

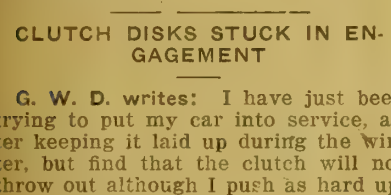


have adhered rather strongly. If this is a lubricated metal disc clutch, kerosene squirted in among the discs will probably free them, but if the discs are asbestos faced and intended to operat dry, this treatment would be inadvisable. You might jack up a rear wheel, throw the gears into high, start the engine push on the clutch pedal strongly and gently apply the foot brake. This ought to cause the discs to separate. If you can get at them, you might try prying them apart with a broad screwdriver, while someone pushes on the clutch pedal. Next time you lay up your car, you better leave the clutch disengaged by fitting a stick, cut to the correct length, between the pedal and the heel board, and thus avoid a repitition of this trouble.

COAL OIL FOR CARBON

J. P. asks: (1) Is coal oil good to use to clean out an engine? (2) Is a cut out of any benefit and in what way?

Answer: (1) It used to be thought valuable for removing carbon, but is



little used now. However, it has some effect, if used frequently and it does keep the piston rings from gumming in their grooves. You will get better results by using some well known brand of carbon remover, following directions carefully. Even water, drawn through the carbuetor air-intake, tends to loosen carbon. (2) Some people consider a cut out useful in detecting cylinders that miss fire, for, when it is open, each explosion can be heard distinctly and a "miss" is readily apparent to the ear Unless a car has a badly clogged or altogether too small a muffler, opening the cut out will not afford appreciably increased power, although motorists often imagine that it does. Manufacturers no longer put on cut outs, their use is contrary to law in many places and is an annoyance to the public which no considerate driver should be guilty of making.

The farmer who wishes to invest money in his farm can find no better place to invest it than in tile drains. There are few farms adequately drained. Tile underdrains will improve the productive capacity of lands that do not show an urgent need of draining. There is a good opoprtunity to make the farm more profitable by investing some capital in tile drains.

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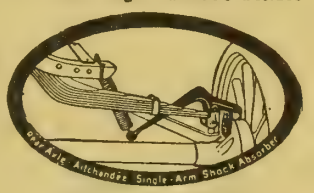

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THE FORMATION OF HUMUS IN SOIL

The word "humus" is rather loosely used in many quarters to indicate organic matter icorporated in the soil. Strictly speaking, however, humus is one of the products of decay— formed when organic matter undergoes dissolution underground. Yet it is no definite, well-defined chemical substance, like starch or sugar, but rather a mixture of many substances. Consequently, it is no very definite chemical composition though it possesses certain properties which it exercises in a very definite way. Organic matter when left undisturbed to undergo complete dissolution breaks down into simpler and simpler chemical compounds until finally there is nothing left. Theoretically, the final stage should be the breaking up of these simple substances into carbon dioxide, a gas which dissipates in the air, hydrogen gas, which also escapes in the same way, and water. Carried on to its conclusion, as indicated, there should be nothing left save gases and water vapor—all of them lost in the atmosphere.

Practically, however, under conditions prevailing in the soil, much of the dissolution spoken of stops short of these final steps. This due, probablp to the fact that insufficient oxygen—in the form of air—is present to permit the last stage, represented by complete oxidation, to be carried out. Thus there are left many chemical substances all of which represent more or less final products of decay, but which stop, noene the less, this side of actual dissolution. Some of these are acids, some are fats, others are organic substances of varying chemical formulae. Together, these form a blackish compound which when thoroughly dry forms a hard, shiny ebony-like mass which, properlp speaking, is humus.

Though humus is thus a complex mixture of organic substances it behaves itself as one possessing quite distinctive traits. For one thing it is fairly resistant to further dissolution; that is, it does not disintegrate rapidly, thus permitting the amount of it to be appreciably increased from year to year. For another thing it has a strong power to hold or detain soil water—not the surplus drainage water however, but the "film water" which surrounds each particle of soil when good tilth prevails. Again, its black color increases the heat-absorbing power of soil that seen germination and plant growth are hastened. These physical influences, however, are not the only advantages which the formation of humus brings to a soil. It should be remembered that during the whole process of the disintegration of the organic matter in question, plant food is being made available through one means or another. Furthermore, the presence of this organic matter lightens the soil and promotes bacterial action. Thus the term "humus" always sugiests to us several most desirable features closely allied with soil improvement.—S. C. B.

THE DAIRY HERD AT FRESHENING TIME

The condition of the dairy cow at and after calving has a great influence on the success of her ensuing lactation period. It is important that the cow or heifer should be in good flesh at calviny time, as she then has a store of energy both muscular and nervous, which will be a great aid to her during the lactation period. It is also a well established fact thta the more flesh a cow is carrying at freshening time the higher the percentage of fat in her milk. Thus it will be seen that it is very important that she be well fed for a period before freshening. To have her in the best shape it is advisable that she should be dry for a short period each year; about six weeks is sufficient if she is being well fed.

As calving time approaches she should be fed almost the same as the milking herd with a supply of laxative meal such as bran, oil cake, roots, etc., increasing the bran as she nears the freshening day and decreasing the heavier meal. If the cow is on good pasture practically no extra feed will be required before she freshens. One of the chief causes for garget and inflamed udder, in dairy cows is due to faulty feeding at this period. When fed the same heavy ration as the milking cows, udder trouble is sure to result. This can be prevented by feeding more lavative food such as wheat, bran and oil cake. A dose of one and a half pounds of Epsom salts and one ounce of ginger should be given before calving. This will put the cow in the best of calving condition. It is always better to have the cow freshen in a box stall, as she has much more freedom and room than if tied in a narrow stall. The calf should be left with the cow for a day or two, as this tends to remove any inflammation from the cow's udder and start the calf off to the best advantage. The cow should not be milked out dry for the first four days, as there is always a danger of milk fever setting in. If the afterbirth be retained it should be removed by a competent person within 48 hours after calving. Although this is a simple operation, it should be done carefully and thoroughly, so as to prevent bleeding and to entirely remove all particles from the extreme forward part of the uterus. After the afterbirth is removed, the uterus should be flushed out with a solution of boracic acid and water or oxalic acid solution.

After three or four days the cow may be reduced to normal milking periods and the feed gradually increased until in about 10 days she is on normal rations. It is well, however, not to feed much barley or cotton seed meal for at least two weeks because of their heating effect upon the animal and tendency to cause constipation and udder trouble.

STOCK NOTES

The Welsford Yorkshire Breeders Club whose adv. appears in this issue, are offering some of the best young boars and sows that are for sale in the Maritime Provinces today. The dams of these are mostly sows that were bred on the Farmers Advocate Farm in Ontario and were secured at a larg price for the members of the Club.

Anyone wishing an ideal type of bacon hog should write the Secretary, Geo. M. Lyon, for description and prices at as early a date as possible as they are being eagerly sought after by all who have seen them.

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SYMPTOMS OF ILLNESS IN COW

How many valuable dairy cows are lost simply because their owners do not pay attention to the first indications of illness in the animal, and take prompt steps to have the trouble checked rather than waiting until the trouble becomes obviously serious before calling in the veterinarian?

There are a number of general symptome which accompany a great many of the commoner bovine diseases which are not difficult to recognize, and which, if nothing else, will be an indication that the animal is not normal and probably requires veterinary attention.

Probably the most important symptom of ill health in the animal is a rise in her temperature. The normal temperature of the cow is from 98 to 100 degrees, though there are some animals in which it may run even higher. As a general principle in heifers or young cows the normal temperature is likely to be higher than in older animals. A self-registering veterinary thermometer is an instrument which should form a part of every dairyman's equipment. In taking the temperature it is necessary to place the thermometer in the rectum of the cow for from three to five minutes. To be on the safe side it should be made a rule that any rise of temperature above normal be regarded as suspicious.

Along with temperature, the pulse of the animal should be taken. The best place to get this is at the angle of the lower jaw, where it may be plainly felt.

The normal pulse of human being is around 72 beats per minutte but that of the cow is much lower, being between 50 to 60 beats to the minute. In case the pulse count is higher or considerably lower than these numbers the condition of the cow is not normal.

Another very important guide in diagnosing trouble in an animal is the respiration. The normal respiration of a healthy cow is from 15 to 20 times a minute—just about the same as that of a human. If a cow breathes much slower or much faster than the normal rate, it is almost certain there is something wrong. Other signs to be watched for are lack of appetite, sudden shrinkage of milk, and the ceasing of chewing the cud.

When the cow is found to be ailing the first thing to do is to get her out of the herd and place her in comfortable quarters where she will not be near any cattle. Where there is the slightest suspicion of any contagious disease this removal of the cow from the herd should be done at the earliest possible moment. Her milk should not of course be used as it would be unwholesome and where a cow has been atacked by certain diseases such as tuberculosis it would be actually dangerous to use her milk.

While in most cases it is best to leave the "doctoring" of cows to a capable veterinarian there are cerain simple remedies that should be kept in every dairy barn. These remedies should be placed in bottles or packages and plainly labelled and kept in a tight box with a strong lid. Some of the drugs that are useful are boracic acid, vaseline, epsom salts, raw linseed oil, sulphur, spirits of turpentine and salt peter. There are a number of good books that treat on different diseases of cattle and other stock and at least two or three of these should be found in the home of every dairyman, as by their use the owner may often be able to relieve a sick animal and save the expenses of a veterinarian. When, however, a valuable animal gets sick and the owner feels that he can do little or nothing to give relief he should take into consideration the amount of the investment and get a veterinarian to the barn as soon as possible. In some places it is almost impossible to get a good veterinarian within a reasonable distance but when he is needed a good ma nseveral miles away is worth al he charges.

PLANTING ROOTS FOR SEED

(Experimental Farms Note.)

As the time for plonting mangels, turnips and carrots for seed is at hand, a few recommendations relative to planting may be opportune.

In the first place, any one who has save some roots for the purpose of raising from them what seed he will need for next year's seeding, should use only the very best roots. It is of course evident that, if the most satisfactory results are to be obtained, the roots to be used for seed proruction must be perfectly sound; otherwise the seed grower runs the risk of going to the trouble of planting only to find that after a while the stand of the seed crop becomes thin and disreputable lokoing as the diseased roots rot in the ground.

The roots used for seed production should furthermore be as uniform as possible in respect to general type. That is to say, they should be of the same color and of the same general shape. It is of minor importance that they be uniform in size as experience has shown that small roots produce about as much seed as large ones and that the quality of the seed produced by small roots is just as good as the quality of seed produced by large ones.

The roots chosen for seed raising should be planted in rows anywhere from 2½ to 3 feet apart so as to make it possible to horse-cultivate between the rows. Mangels and swede turnips should, in order to be given a chance to branch out freely, be spaced anywhere from two to three feet apart in the rows; in the case of carrots, the roots may be planted closer together, say from 1½ to 2 feet apart in the rows.

If only a small number of roots are to be set out, the planting may be done with a spade. This method of planting is very simple. Holes are made at the proper distances sufficiently deep to allow the roots placed therein to be just nicely covered with earth. When the roots are placed in the holes, the soil should be packed around them. The planting is done properly if the tops of the roots are just a little below the surface of the ground.

If a large area is to be planted ,it is, especially if help is scarce, more economical to plant with a plow. Furrows are made, and the roots are placed reclining on the slanting side of the furrow at the proper distance apart in such a way that the soil turned over by the plow in the next round will cover the tops. Then a third furrow is plowed and no roots are planted in it. To be brief, the roots should be planted in every third furrow and placed in such a manner that the plow barely covers them with soil. If the tops are left uncovered, they may dry out if the weather turns hot but if, on the other hand, the roots are buried too deep, the seed stalks sprouting from them may have some diffivultp to break through, especially if the roots are small.

No matter what methods are followed in the planting of the roots, it is essential that the roots be set out as early as it is possible to go on the land for, according to experience, the early planting brings the heavies seed yields.

SIRES DETERMINE SUCCESS OF OF ANY LIVESTOCK INDUSTRY

The farmers of the Maritime Provinces should look well to the sires they purchase. Dairy sires sould not be bought on the records of their dams or daughters. Low-producing cows should not be considered at any price, and they are invariably the result of poor sires.

Our horse markets are flooded with small inferior horses, the get of poor sires. At the country sales common horses sell for about $80 a head, while the heavy horse, weighing 1500 pounds or above, sells for $200 or more. Better, heavier sires get the better grade of horses.

The range man who is a producer of beef, appreciates good sires and invariably has them, but the small farmer who runs only a few cows cannot afford a good beef sire, and consequently uses any kind of a sire he can get. The results are a lot of hit-and-miss calves that bring the lowest prices. To overcome this condition there should be co-operation in the purchase and use of good sires. By this arrangement every farmer can have the use of a good sire at a very nominal cost.

The use of boars and rams comes in for the same consideration. It is a mistake to use an untried boar or ram once and then get rid of him. His value as in individual and breeder can be determined only after he has been developed, and the character of his offspring determined. When he is owned by a signle farmer the cost of keep is so high and there is so much labor required in his care that the farmer gets rid of him after one season. When the sire is owned co-operatively the reverse is true, and he can be retained as long as desired at a low cost to the co-operators.

Co-operative ownership of sires is one eof the big questions that confront the farmers, and it should have their most careful consideration.

Better sires mean better animals and greater profit. With high prices of feed the best is none too good.

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BITTERNESS IN CREAM

Bitterness in cream and milk is a frequent trouble during the winter months. If the mlk is bitter when it is drawn, the trouble is with the cow or her feed. Very often cows give bitter milk toward the close or their lactation period. The old dry weeds of winter pasture also give rise to a bitter flavor in milk. The remedy in this case is to keep the cow from such pastures.

However, if bitterness develops after the milk is drawn, which is most often the case in winter, it is due to the growth in it of certain variety of bacteria. These bacteria get into milk usually from pieces of dirit or manure from the barn. At low temperatures they will develop a bitter flavor before the milk or cream sours. When the dairy is once infested with such bacteria they may remain in the separator, pails, strainers or colling tank for a long time. To prevent bitterness due to this cause, these bacteria must be eliminated. This means that all utensils, separator parts, strainers and cooling tank must be thoroughly washed and scalded. All dirt should be kept out of the pail at milking time by keeping the can clean and using a pail with a small opening.

While making such a clean-up the trouble might be prevented by addinig some sour milk to the cream as soon as separated and keeping it in a warm place until the batch is sour. Then it can be cooled and kept till churning time. Sour cream seldom turns bitter unless kept several days.

CREOSOTE DRIP IN THE CHIMNEY

My chimney is plastered on the inside but not the outside. There is some brown water that comes out between the bricks from the roof and down six feet. Last year I was troubled the same way, so I built a new chimney, and now it is worse than ever. Could you tell me what I should do for it? J. C.

Reply: Most troubles with chimneys are caused by defective draft. The purpose of a chimney is to carry away the waste gases of combustion. To enable it to do this, some heat must be discharged into the chimney so that the column of air and other gases contained in it is expanded and by this expansion made lighter, hence rising and flowing out at the top, being replaced during the meantime with other gases flowing in at the bottom. Practically the only force then causing an upward flow in a chimney is the difference in weight between the somewhat heated column of air in the chimney flue and the colder surrounding outside air. To get the fullest effects of this force certain conditions must be met.

The chimney should be tight, so that air cannot be taken into it at any point without first passing through the burning material on the grate, or at such other points as may be regulated to control the draft and resulting combustion. It should be about 30 feet high, and should extend to a point about two feet above the highest part of the roof by the most direct route possible. It should extend above the roof to permit the wind to blow straight across the top, and not subject it to eddy currents that frequently blow down the flue and cause the puffs of smoke and gas sometimes seen coming from a stove in wind weather, and should be as straight as conditions will permit, to get rid of offsets that serve as places for soot and ashes to pile up, obstructing the draft. Sometimes an obstructed draft is caused by a pipe being thrust too far into the chimney, so that there is very little opening for the smoke to come form the end of the pipe. All of the conditions mentioned, if not as they should be, tend to lessen the heat in a chimney because the air current is made slower and less heated air is discharged through the flue in a given time. Even in a perfect chimney the draft may be so controlled by dampers thta practically the same effect is obtained, and this is often the case in the effort which everyone makes to conserve fuel.

When wood is burned there are certain liquids that are discharged into the chimney as gases, but which, if the temperature is permitted to get too low from any of the causes mentioned, are condensed on the inside of the flue surface and form the brown liquid mentioned. This may also be caused in an outside chimney where the walls are unprotected. Burning certain kinds of wood, as beech or green woods of any variety, makes this trouble much worse. Sometimes storm water will beat into the top of the chimney and cause some trouble from the resulting solution of ashes, etc., that seeps down. The indicated remedy seems to be to first see that the flue is so constructed that it meets all of the requirements, and if found to be right in this respect so to control the drafts that the air in the chimney is kept warm enough to prevent condensation. In some cases where the trouble is very bad and the creosote extends back into the pipe, the pipe is put together backward and given a slope toward the stove, so that any liquid discharged into it will find its way back to the stove.

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A 6, 3 or 1½ Horse Power

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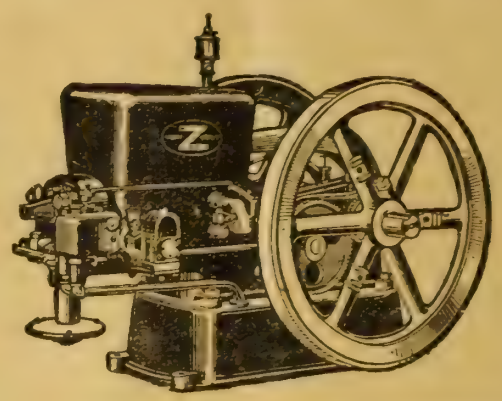
does its work day and night at the lowest upkeep cost because of its simplicity of construction and its fuel economy. No matter for what purpose you want power on your farm investigate the "Z" first—the engine that meets the farmer's needs.

Your local dealer can tell you about the "Z". He sells it; he is the direct representative of the manufacturer and he, personally, stands behind each engine he sells to see that the purchaser gets the fullest satisfaction. Ask your dealer or write today to our nearest office.



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MANAGING THE HERD BULL

Watch the Quiet, Gentle Fellow

It always seems to be the gentle bull that attacks its caretaker and causes serious injury or death. A bull that is known to be ugly is watched, and as the attendant is on guard when around the animal there is less danger of injury.

It never pays to allow a bull to find out its strength, and for this reason the farmer should keep control of the animal at all times and not let it know that the strength of the boss is inferior to its own physical powers.

There is much risk in allowing bulls to go down in the pasture with the cows, especially if the fences are not in the best of condition. Frequently a bull has broken out and gone down the road, where it has caused much trouble and possibly a serious loss to some farmer owning a purebred herd of another breed. There is also the danger that the bull will injure people on the road, and after once obtaining its freedom, it is more difficult to control the animal and keep it contented while in confinement.

The best method of managing the bull is to keep him in a strongly built box stall, with a small yard outside, where he can exercise and see the other members of the herd. The fence around the yard should be well built and braced. Strong cement posts with iron pipe set in the cement connecting the posts makes an unbreakable pen. If a stout board fence is used, do not make the boards so high that the bull cannot see what is going on outside.

A sire that is not at least one year old is too young for breeding, and the first year that the animal is used for breeding, the amount of service should be limited. Because a bull seems strong and vigorous is no reason why its breeding powers should not be protected as carefully as is the case with other kinds of farm animals.

All bulls should be dehorned. This is a protection for the care-taker, and in addition the bull without horns is less apt to develop a pugnacious disposition. The bull should always be ringed, and led with a staff, and if it is exercised by driving or using on a tread mill, the greatest care must be taken to avoid injury to men working around the animal.

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On Sale Everywhere. DR. ED. MORIN & CO., Limited, Quebec, Canada.

3

can do to a good dairy herd and what a good sire can do for a poor herd, it is evident that more consideration should be given to the dairy bull. When every farmer realizes how much cash is thrown away by accepting services from scrub bulls, the dairy business will become more profitable, breeding fees will be paid with less grumbling, and all dairy organizations will grow more rapidly.

WAY TO PAINT METAL SURFACES

Any person who has found it necessary to purchase any farm machinery, tin or galvanized roofing or other metal materials within the last year or two has paid a much higher price than formerly. The increased cost of articles manufactured from metal makes it imperative that they be made to last as long as possible. Painting farm machinery not only prevents rust, but improves the appearance and makes the implements work much more easily.

Tin roofing and eaves spouting, if not kept painted, will soon rust through. Iron posts and fences are much improved in appearance if painted. Farm machinery, as mentioned above, will give better service, and it is more economical to wear a machine out than to allow it to rust out. Besides, machinery that is kept painted will nearly always bring a higher price, whether sold at private or public sale.

Before painting metals, the surface must be thoroughly cleaned. All dirt and rust should be removed. It will often be necessary to scrape the metal down to the bare surface before painting. Iron brushes or scrapers can be used for this purpose. Frequently machinery will be covered with oil or grease. This must be removed and the surface allowed to dry before one is ready to apply the paint. If one slights this preparation, in a short time the paint will likely crack and peel off. If the surface is rusty, steel wire brushes about 2 inches wide and 6 inches long may be purchased and will be found useful in removing the rust.

Most any person can apply the paint himself and do a reasonably good job. A brush should be selected that is suitable for the kind of work for which it is to be used. In painting roofs, a flat brush will cover more surface than an oval one. However, on other work a round brush will probably prove more satisfactory. The surface should be dry and the paint rubbed in thoroughly.

The painting can be done at a time when the farmer is not rushed with other work. The implements may be painted in some clean, well-lighted building that is free from dust. One should not attempt to paint roofing, spouting, fences and gates in a rainy time or the paint will not dry.

As to paint, some good paint of known reputation should be used. It does not pay to buy paint of which you know nothing because it is cheaper than some well-known, reliable, advertised brand. Purchase the best paint, apply two or three coats, rubbing them in well if you wish to have a first-class job. F. R.

All the YEAR through let your Property be **PAINT** *Protected*

WHEN the thermometer registers "90 in the shade" a blistering sun attacks the poorly-painted building. In zero weather, ice and snow damage the property that is not paint-protected. Between seasons there is wind, rain and sleet to contend against. Your property will *not* successfully resist the attacks of severe storms or scorching sun rays, unless given that kind of protection which only a quality paint can guarantee.

It's Better to **PAINT** *than* **REPAIR**

B-H "ENGLISH" PAINT 70% Pure White Lead (Brandram's Genuine B.B.) 30% Pure White Zinc 100% Pure Paint

Making our own white lead and linseed oil, we *know*, and therefore can guarantee that all the basic ingredients of B-H "English" Paint are such as to ensure complete and lasting protection for any building to which it is applied.

The only correct formula for an outdoor paint is the one calling for 70 per cent pure white lead and 30 per cent pure white zinc. That formula we print on every can of B-H, together with our guarantee that this high standard is maintained.

Before you paint anything be sure you are using the right kind of paint, and giving your surface the correct preparation.

Other B-H Products We are proud to sell

For Interior Finishing, "China Lac" the perfect varnish stain.
Staining the Roof, B-H Shingle Stain in 19 different colors.
B-H Porch Floor Paint For porch floors, ceilings and parts exposed to the weather.
Plaster Ceilings and Walls B-H "Fresconette"—A flat tone oil paint.
Finishing a Floor, B-H "Floor Lustre," excellent for interior floors.
For Barns and Outbuildings Imperial Barn Paint.

BRANDRAM-HENDERSON LIMITED
MONTREAL HALIFAX ST JOHN TORONTO WINNIPEG
MEDICINE HAT CALGARY EDMONTON VANCOUVER

REASONS FOR USING PURE-BRED BULLS

The secretary of the Wisconsin Breeders' Association, gives these seven reasons why he has used only purebred bulls:

Because it pays. Everyone knows that good producers pay better than poor producers, and to get more profitable cows means to use purebred sires.

Because I like to work with good tools. When a man chops, he wants a good sharp axe. When driving an engine or team he wants one that is right and responds to fuel or feed, levers or lines. So with cows, We want them to respond to feed and care, and to ensure this they must be bred for the purpose. That means purebred sires.

Because I like to see and own the best animals possible. When we set out trees to beautify our homes we select the most perfect in every way. When we plant flowers we choose the most beautiful. We are always striving towards perfection. In the same way it is always my pleasure and satisfaction to see, own, and handle the most perfect specimens of live stock, the most beautiful in form and most perfect in function. These do not come by accident, but only through the use of the best purebred sires.

Because I want to help build up my community. It is said that he who makes "two blades of grass grow where only one grew before" is truly a philanthropist, but not any more so than he who makes one blade of grass do the work of two by feeding better cows. This man is an asset in every way to his community. He becomes a better citizen, and adds prestige to his business. But he does not accomplish this by using a scrub bull and being a scrub man.

Because it gives the whole family more interest in the farm and home. There is inspiration for everyone in building up a good herd. Better care is taken of the cows. Every heifer calf is an interesting study as to what she will develop into and why. Instead of looking forward only to hard work we now are eager for what the future will bring and work with interest for best results because of better bulls.

Because I am proud to belong in the "purebred class," where you find better homes and higher ideals because of better bulls.

Because all other reasons aside, I would be ashamed to use a scrub bull and thereby advertise the fact that I belonged in the "scrub class," the more so since it is so easy to get out of this class by using a better bull.

TREATING INFESTED CHICKEN HOUSES

The first step necessary to destroy mites is to get rid of the hiding places so far as possible. The roosts should be taken down and all unnecessary boards and boxes removed. In heavily infested houses the mites are to be found in all parts of the building, including the roor. Where they are less numerous the infestations usually are confined to the roosts and nests and the wall immediately adjecent. For small coops a hand atomizer will suffice for applying insecticides as spraps, but for larger houses a bucket pump, knapsack sprayer, or barrel is desirable. A rather coarse spray should be applied from all angles and thoroughly driven into the cracks. The floor also should be treated, as many mites fal to the floor when the roosts are being removed.

Top Dress with Nitrate of Soda

It does not Sour the Soil

Nitrate of Soda leaves no mineral acid residue behind to injure your soil. It makes bigger crops—and keeps the land sweet.

Nitrate of Soda

Top dress 100 lbs. per acre for seeded crops; 200 lbs. cultivated in thoroughly for cultivated crops. These light dressings, evenly spread over an acre, will work for your profit.

WM. S. MYERS
Chilean Nitrate Committee
25 Madison Ave. New York

MARKETS.

COUNTRY PRODUCE

Montreal, May 3.—The feature of the egg situation today was the large offerings from country points for shipment at 46c per dozen, f.o.b., which buyers in cases were not disposed to pay, as mos tof them have large supplies rolling, and the impressions of some in the trade was that the feeling, if anything, was inclined to be easier.

There was a fairly good demand for suplies for domestic consumption today, and prices were unchanged, with sales in a jobbing way at 49c to 50c per dozen. The receipts were 4,272 cases, as against 3,9666 for the same day last week, and 4,751 for the corresponding date a year ago.

There was no change in the conditio nof the market for beans, business being still quiet and prices unchanged, with broken lots of Ontario handpicked quoted at $3.50 to $3.75, and car lots at $3.25 per bushel, and Quebec beans at $2.50 to $3. There is a steady demand for small lots of peas, and sales of choice boiling stock were made at $3.25 to $3.50, nd Quebec peas at $2.50 to $3 per bushel.

A firm feeling prevailed in the market for maple product on account of the continued small receipts and the light supplies available on spot, for which thre is a fair demand, and sales were made at $2.25 per tin of 13 lbs., and at $1.80 to $1.85 per tin of 8½ lbs., while maple sugar sold at 52c lb.

There was no further development in the market for potatoes today, but the tone of the market is very firm owing to the continued small supplies coming forward, for which there is a good demand, and sales of car lots of Quebec white were made at $1.90 to $2 per bag of 90 lbs. ex-track, and at $2.15 to $2.25 per bag of 90 lbs. in a jobbing way ex-store.

The tone of the market for dressed poultry remains very firm under a continued good demand for supplies for local consumption and outside account, and a fairy active trade was done, including sales of some fair-sized lots for shipment to outside points. There is no scarcity of stock yet, but supplies are being steadily reduced, and with the movement for export the prospects are that there will be a shortage of some lines in the near future.

We quote wholesale prices of cold storage poultry as follow.:

Choice turkeys, per lb.	48c to 50c
Milk-fed chickens	45c to 47c
Ordinary chickens	40c to 43c
Fowle, heavy	37c to 38c
Fowls, light	33c to 34c
Ducks, No. 1	42c to 44c
Ducks, No. 2	40c to 41c
Geese	31c to 32c

DAIRY PRODUCE TRADE

Montreal, May 3.—The receipts of butter today were 714 packages, as against 414 for the same day last week, and 1,074 for the corresponding date a year ago. At Gould's Cold Storage today the first sale for the season 1919 was held, when 200 packages creamery butter were offered, and all sold at 55c to 56c per lb., f.o.b. country points, as to quality. Owing to the steady increase in the receipts, and the prospects of them being much larger in the near future, an easy feeling continues to prevail in the market, and in consequence the demand from local buyers is limited, and only for small lots to meet actual wants and sales in a wholesale way of finest creamery were made today at 57c per lb. The demand for oleomargerine continues good, and a fairly active trade was done in a jobbing way at 34c to 35c per lb. in 1-lb.. blocks, and at 33ct to 34c in tubs.

We quote wholesale jobbing prices as follows:

Finest creamery, solids	60c
Finest creamery, blocks	61c
Fine creamery, solids	59c

The receipts of cheese today were 521 boxes, as compared with 961 for the same day last week and 2,157 for the corresponding date a year ago. At Gould's Cold Storage today the offering amounted to 500 boxes, which consisted principally of white goods, and al lsold at 23½c per lb., f.o.b., country points. A private cable was received today from a leading house in London by a local merchant asking for cheese prices, the condition of the market and the propects for the make for the season 1919.

THE PROVISION MARKET

Montreal, May 3.—A very firm feeling prevails in the local market for live hogs owing to the continued good demand and the small offerings, and prices were unchanged, with sales of selected lots at $22.25 to $22.50 per 100 lbs. weighed off cars, and lots weighing les than 140 lbs. each at $20.25 to $20.50. The demand for dressed hogs showed no improvement, and the trade ewas rather quiet, but as suplies were small prices ruled firm, with sales of city abattoir fresh-killed stock in a jobbing way at $30.50 to $31 per 100 lbs.

The condition of the market for smoked and cured meats was unihanged, the feeling being firm, with only a small trade passing for local and country account, and the market o nthe whole was rather quiet, with sales of 8 to 10-lb. hams at 40c per lb., 12 to 15 lbs. at 38c to 39c, and heavier weigrts at 36c to 37c, while breakfast bacon sold at 44c to 45c. Windsor selected bacon at 47c to 48c, and Windsor bone less bacon at 49c to 50c.

A good steady trade continues to be done in lard in a jobing way, and the market is fairly active with a firm undertone, and sales of Canadian pure leaf grades were made at 33c per lb. in 20-lb. wood pails, and at 34c per lb. in 1-lb. blocks. The receipts of provisions today were 975 packages lard, 23 boxes hams and bacon and 407 packages tinned meats.

THE LOCAL GRAIN MARKET

Montreal, May 3.—The weakness developed in the option grain markets yesterday was decidedly more pronounced today and prices had a severe break, corn in Chicago closing 10⅜c to 11¼c per bushel lower and oats 2⅝c to 3⅛c while in the Winnipeg market barley sold 3⅛c off and oats 3⅛c. In sympathy with the above a weaker feeling also prevailed in the local market for cash grain, and prices for barley were reduced 1c per bushel, and oats 1½c. The trade was very quiet, the demand beinb still imitel, and only odd cars to meet immediate wants, and sales of

You Get More Work with a Cleveland

Buy a tractor that will do more than plow.

Buy a tractor—for faster, less-man-power, less-horse-power, more profitable farming.

But buy a tractor that will—disc, harrow, seed.

Without soiling the seed-bed.

Buy the Cleveland Tractor.

Lay its own track as it travels. Pressure only 5 pounds to the square inch. Less than a man walking. CAN'T pack the plowed ground. CAN'T wallow in soft ground. WILL work over rough ground, hilly ground, gullies. And uses less fuel doing this because it rides on top WITHOUT SLIPPAGE.

And will harvest, thresh, haul loads, cut feed and ensilage, operate machinery—work more days in the year.

The Cleveland Tractor is the product of a giant organization embracing engineering, genius and manufacturing facilities of the highest type. That is why the Cleveand operates successfully on kerosene (coal oil) uses no more kerosene than other tractors use gasoline. That is why the Cleveland stands up to its work day in and day out, year after year. That is why the Cleveland is an investment, not an expense.

Most farmers plow 10 acres a day with a Cleveland—saves 9 horses and 2 men.

Use double discs, two 60 tooth harrows, and heavy wooden drag for fitting—40 acres a day.

And every month in the year those Cleveland owners have their tractor at work.

Of course it pays for itself. Your nearest Cleveland dealer can show you how. Write to us for our interesting booklet, "Our Owners Say," giving actual experiences with Cleveland Tractors.

R. R. No. 5, Belleville, Ont.
The Cleveland Tractor Company of Canada, Ltd.
Windsor, Ont.

Gentlemen :—

I have been operating my Cleveland Tractor for over three months, doing all my Fall plowing discing, cultivating, etc., using three 10" bottom plows, with excellent results, on clay land which is more or less stony.

I have had it operating a 13" Gilson ensilage cutter on a 36-foot silo with like results, and was surprised at the simplicity in lining up this little machine for belt-work —I use no bracing.

Before purchasing, I attended the Cobourg demonstration, where I carefully looked over all tractors on the grounds, and finally decided on the Cleveland on quality of construction, simplicity and principle.

And, Brother Farmer, I am at your service any time you care to come to my farm and see this little boss doing the work quicker and better than it has ever been done before.

(Signed) JOHN M. BOYD.

The Cleveland Tractor of Canada, Limited,
Windsor, Ontario

Cleveland Tractor

No. 2 Ontario barley were made at $1.24, extra No. 3 at $1.22, No. 3 at $1.21, No. 3 Canadian western at $1.22 and sample grades at $1.13, while No. 2 Canadian western oats sold at 87c, No. 3 C. W. and extra No. 1 feed at 84c, No. 1 feed at 82c and No. 2 feed at 79c per bushel ex-store.

THE LOCAL FLOUR MARKET

Montreal, May 3.—A fair amount of business continues to be done in spring wheat flour for domestic and country account, and this coupled with the orders on hand at present for export is keeping the mills fully employedfi and the market on the whole is fairly active with no change in prices to note. Sales of car lots of Government standard grade for shipment to country points were made at $11 per barrel in jute bags, ex-track, Montreal freights, and to city bakers at $11 ex-track, or at $11.10 delivered, with broken lots selling to city bakers at $11.00, ex-track, and to grocers and other dealers at $11.20, ex-track, all less 10c per barrel for spot cash. The condition of the market for winter wheat flour was unchanged, prices being firm with sales of broken lots at $10.30 to $10.40 per barrel in new cotton bags, and at $10 in second-hand jute bags, ex-store. The demand for white corn flour is quiet at $8.50 to $9, and rye flour at $8.30 to $8.50 per barrel bags, delivered to the trade.

MILLFEED AND ROLLED OATS

Montreal, May 3.—The market for millfeed continues fairly active under a steady demand for supplies which ar emore plentiful now on account of the increased production of late and buyers find no difficulty in filling their requirements, and there is a good steady movement with no chanbe in prices to note. Sales of broken lots of feed cornmeal were made at $64 mixed grain mollie at $58 to $60, pure barley meal at $56 to $58, mixed moullie at $50 to $52, dairy feed at $46, and oat middlings at $44 per ton, including bags, delivered to the trade, while car lots of bran changed hands at $44 and shorts at $45 to $46 per ton, including bags, ex-track. The trade in rolled oats continues quiet and prices were unchanged with broken lots of standard grades quoted at $3.50 t o$4 per bag of 90 lbs. and Golden cornmeal sold at $4.50 to $4.75 per bag, delivered to the trade.

THE BALED HAY MARKET

Montreal, May 3.—There were no further developments in the market for baled hay today, but the feeling is still very strong on account of the very limited suplies available on spot and sales of car lots of No. 2 timothy hay were made today for local consumption at $31 to $32 per ton, ex-track, and it was reported that this grade of hay has also sold at $30 per ton extrack, f.o.b. country points for shipment, but the Government has not yet made any further advance in prices. No. 1 timothy hay being quoted at $30, No. 1 light clover mixed hay at $30, No. 2 timothy hay at $29, No. 1 clover mixed hay at $28, and No. 3 timothy hay at $27.50 per ton, extrack.

NITRO-CULTURES FOR THE LEGUMES

Among the forage, cover and soiling crops in Canada, one family of plants is of special interest to farmers. These are are legumes or Leguminosae, which include clover and vetches, beans and peas. Botanically they are remarkable for their high nitrogen-yielding qualities, as being constantly associated with bacteria in the soil.

These bacteria-minute living organisms only visible under high microscopic power—form colonies living on the smaller rootlets of the legumes, and produces thereon small lumps of nodules varying in size from a pin head to a small pea. Each kind of crop, whether clover, alfalfa, pet, etc., is greatly benefited by its own particular strain of bacteria culture.

When these bacteria are present in the soil, experience shows that growth is more vigorous, and earlier development takes place. These factors are important in Canada. With alfalfa, robust and early stands have a better chance of resisting winter killing; and in the case of field peas reports from the Western Provinces show increased yields per acre from the use of nitro-cultures.

Where a crop has once been successfully raised with nodules on the roots, the bacteria survive in the soil for some time and a subsequent crop is more easily obtained. To give a crop the best chonce of succesding, the appropriate strain of bacteria should be introduced into the ground.

This can be done by transferring soil from ground where that crop has succeeded, and scattering it broadcast over the new field. This method is laborious and expensive, and besides often introduces undesirable weeds and the germs of diseases. Equally good results have been obtained by using pure bacterial cultures. The method of procedure is to mix the culture material, on which are millions of bacteria, with some fluid, generally skim milk. Then empty the seed on to a clean floor or cloth, and treat it with the fluid, thoroughly stirring the seeds, so that a film of moisture with its bacteria may stick to each seed. The seeds are then spread to dry, out of direct sunlight, which would kill the bacetria. When dry, and on the same day as treated, the seed should be sown and covered up. A cloudy day is the best for this purpose.

Cultures may be obtained commercialy from seedsmen, or Agricultural Colleges, at charges ranging from 25 cents upwards.

The best time for cows to freshen is in the fall, acocrding to many authorities. The weather is then cool, flies are not troublesome, pastures are no longer a factor, and during the winter months the percentage of fat in the milk is at its highest point. The calves can be given more attention during the fall and the young calves can do their best during cool weather.

Get Bigger Hay Crops

Your hay crop can be a pleasure to harvest and a good money-maker if you have efficient hay-making equipment.

Frost & Wood "Champion" Side Delivery Rake

Use a "Champion" and command top market price.

It gathers up the hay into long, loose fluffy windrows where it can cure uniformly. The hay doesn't burn and discolor—nor lose succulence and market value. The "Champion" has 3 tooth bars arranged on a cylinder which gives a steady, rolling motion to the hay until it gets to the windrow. Two castor wheels support the rear end and stop all "digging in" by the teeth. Light draft—very strong—and anyone who can drive can use it.

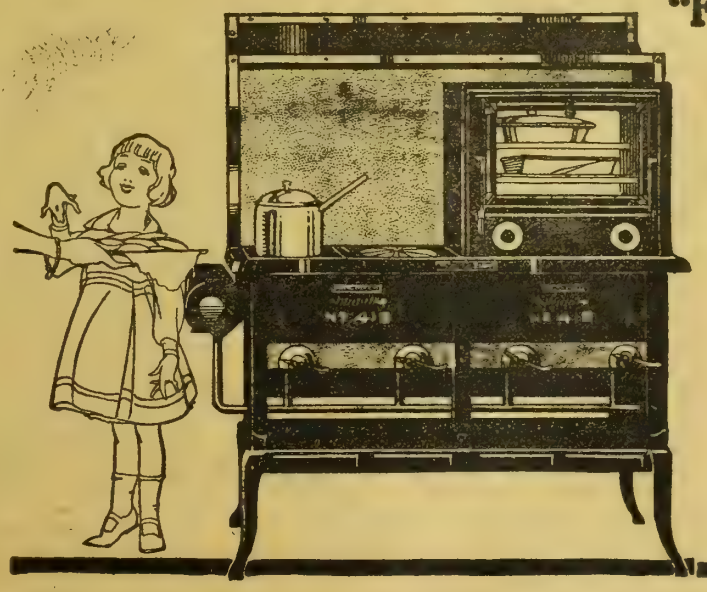
Frost & Wood "Champion" Hay Loader

It's a pleasure to see it pick up the long windrows clean and just as fast as you care to handle the hay—and all the work going where it ought to—on the machine. The "Champion" is very simple—6 tooth bars set in a drum gather the hay and lift it on to a rope-and-slat apron which raises it to the wagon. The whole is operated directly by pawls in the wheels, and thrown in and out of gear by two small levers. Proper design—splendid materials—splendid service.

Let us send you new Hay-making Folder — just drop us a card, or see our nearest Agent.

THE FROST & WOOD COMPANY, LIMITED

Truro ST. JOHN, N. B. Charlottetown



"FLORENCE AUTOMATIC" OIL COOK STOVES

THE blue flame from the Florence wickless burner is always steady, always under perfect control. A special jacket holds it directly under the cooking utensils—**giving a quicker, more economical heat.**

Used with McClary's Success oven, the Florence Automatic is a wonderful baker.

There are no wicks to clean, no odors, no trouble. Let us give you a demonstration of the Florence Automatic in actual operation.

Full information about the Florence oil stoves will be sent free to any address upon request to our nearest branch office.

McClary's

CULTURE AND SOIL FOR GOOSEBERRIES

Gooseberries may be propagated by hard wood cuttings in the same manner as currants, though they are much more difficult to root. The easiest method is by layering, in fact it is very common to find trailing branches which have been partially covered in cultivation striking root.

Nurserymen usually practice stool layering. This consists of cutting off the entire top of the bush in the fall or spring. This causes the production of a number of vigorous new shoots. When the wood of these begins to harden near the baes of the shoot, earth is heaped about them, causing them to strike root.

Gooseberries prefer a rich, deep, mellow soil. The soil should be well supplied with humus and be deeply plowed and well fitted. The plants should be set as early in the spring as it is possible to properly fit the soil, as they are among the first plants to start in the spring.

The usual distance is 4 by 6 feet. In commercial plantations thorough shallow cultivation is practiced but in the home garden mulching may often be advantageously employed. Stable manure is an excellent fetrilizer since it maintains the humus as well as the fertility.

Gooseberries do not require severe pruning but are benefited by removing the old, broken or diseased canes. There are three gooseberry troubles which may become serious.

The currant worm, by its habit of first attacking the lower leaves and those on the inside of the bush, often causes considerable defoliation before the attack is noticed. Three pounds of arsenate of lead to fifty gallons of water as a spray readily controls this pest, and if one makes the practice, at the time of making the first codling moth spray on apples, to apply the same mixture to the currant and gooseberry bushes, getting the spray all through the bushes, the worms may be ignored. In case the injury is unnoticed until the fruit is well grown use hellebore, dusted on or in a spray at the rate of one ounce to two gallons of water.

The mildew, which attacks the English varieties, and the anthracnose, from which no varieties seem entirely immune, are the two most serious diseases. For the former spraying with potassium sulphide, one pound to fifty gallons of water, is recommended, while the anthracnose may be prevented by keeping the foliage well covered with Bordeaux (4-4-50) or lime sulphur (1-40).

A Correct Lubricant for every Farm Machine
For Gasoline Engines, Tractor, Auto or Stationary
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STANDARD GAS ENGINE OIL
For Kerosene Engines Tractor or Stationary
POLARINE OIL HEAVY
POLARINE OIL A
IMPERIAL KEROSENE RACTOR OIL
IMPERIAL KEROSENE TRACTOR OIL EXTRA HEAVY
(Recommended by many tractor manufacturers)
For Open Bearings of Farm Machinery
PRAIRIE HARVESTER OIL
—very heavy body, resists cold, won't thin out with moisture
ELDORADO CASTOR OIL
—a thick oil for worn and loose bearings
For Steam Cylinder Lubrication, whether Tractor or Stationary Type.
CAPITOL CYLINDER OIL
—the standard product for steam cylinder lubrication
THRESHER HARD OIL
For Grease Cup Lubrication of Bearings, a clean solidified oil high melting point.
Successful Farmers are Well Posted on Lubrication
The fellows who are making the most money are usually the ones who have studied the question of lubrication, as well as other farm problems. A thorough knowledge of lubrication is worth hundreds of dollars per year on every Canadian farm.
You cannot expect service from your automobile, if it is poorly lubricated. Your tractor is poor property without proper lubrication. The two machines are unlike in structure and duties, and one kind of oil will not do for both. Be sure that you are using the oils and greases best suited for each machine and each moving part of your farm machinery.
From Imperial Farm Lubricants you can select the right oil for every purpose. All are high grade reliable products. All are correctly refined, from carefully selected crudes. All Imperial Farm Lubricants are made in Canada.
Imperial Farm Lubricants are put up in convenient sizes; one-half, one and four-gallon sealed cans, half barrels and barrels.
IMPERIAL OIL SERVICE
Our service is far more than the mere selling of our products. It follows our products to their work and insures as far as we can insure it, that each Imperial Product does the work for which it is bought. Ask the Imperial Oil man. There is one near you. His service is free and should be valuable.
IMPERIAL OIL LIMITED
Power - Heat - Light - Lubrication
Branches in all Cities

RENEWING THE OLD APPLE TREES

Old apple trees frequently grow skyward until they reach a height that makes them difficult to harvest. Apple pickers cannot afford to waste their time trying to gather fruit from small limbs which shoot far beyond them when working from the last safe round of the ladder. It pays to dehorn many trees of this type. At least they should be headed back so that all of the fruit can be reached without excessive effort. Then the strength of the trees will be conserved for the lower limbs and they will produce more fruit and fruit of better quality.

The open-centre is of value in the old apple tree to allow the sunshine to enter and color up the fruit. Trees which have a brush-like centre are difficult to spray and harvest and the fruit may be dull and green because of a lack of sunshine. Many old apple orchards have reached a stage where most of the trees cannot be made profitable even with the best of care. It will pay to cut down such trees and plant a new orchard or use the land for another purpose. It is good to recommend the proper care of old orchards, but some of them have reached a stage where they cannot profitably compete with new commercial orchards, and farmers cannot afford to waste time caring for half-dead trees. When the trees are good enough to rejuvenate the low-head and open-centre should be emphasized in training them.

BEST BREED OF POULTRY

"Can you tell me what breed of poultry is best, which are the best layers a and which breed growy the largest?"—Subscriber.

There is probably no best breed of poultry. It is more a matter of strain. There are good and bad strains in all breeds. For general purpose, that is for both the production of eggs and meat, the Plymouth Rocks or Wyandottes or breeds of that type will be found satisfactory, but for straight egg production nothing is better than the Wite Leghorns. The Brahma is the heaviest bird in the Standard but they are slower to develop than some of the other breeds. For a large roaster, it is hard to beat the Plymouth rock.—G. R.

SEX CONTROL

Is it possible to breed cows so that they will produce heifer calves?—C.B.

Reply.—Preponderanace of scientific evidence goes to show that there is no sure way of controlling sex. Breeders have been studying this subject for years and many theories have been advanced but when they have been tried they have been found wanting. This is one of the secrets that nature has never divulged. It is probably wel lthat this is so, for if man had absolute knowledge of the influences that control sex it might be a detriment to the live stock industry instead of a benefit.

LEARN TO CASTRATE THE RAM LAMBS

It seems to be a prevailing habit with sheep growers in many sections to neglect the castration of ram lambs. The local buyer encourages this neglect by paying the same price for the rams as he does for the wether lambs. but he pays the market price for ram lambs rather than that of wether lambs, so he comes out all right, because the inferior grade fixes the price of all and a premium seems to be offered for neglect, when in reality the better grades are dropped to the lowest level of price. But this is not all; the ram lambs in the flock are restless and will not make as good growth as the wethers, so there is a loss in weight by neglecting to use the knife.

The lambs should be castrated when they are from three to four weeks old. if the weather is favorable, though the work should not be done when it is stormy. Some persons do not castrate the lambs because they fear loss from death. but there is practically no danger of a lamb dying from castration if the work is done properly. A clean sharp knife should be used and at least one-third of the scrotum should be cut off. This is necessary to prevent the wound from closing up before it gets well. The cords of the testicles should be well drawn out and cut off.

If the wound should close up prematurely it will inflame and the lamb will get stiff and droopy. This should be watched carefully and in such cases the wound should be opened up so that any pus which may form will drain out of the wound. A little spirits of turpentine dropped about the wound will do no harm and will prevent flies from bothering the lambs if the days are warm. A. J. L.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

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Major Features in the Feeding of Dairy Cattle

An Address by E.S. Archibald, B.S.A. Director of Experimental Farms, Ottawa

Mr. Chairman, ladies and gentlemen:

I assure you that it gives me a great deal of pleasure to be again at your Convention, and I only regret that I was unable to attend all your meetings, for I have been greatly interested in the progress which you are making and, I have no doubt, have made, particularly during the past few days. It has always appeared to me that these conventions are really your meeeting and that any lengthy addresses on technnical subjects are more or less out of place. This is your business session and I have no doubt that you have had a particularly busy and successful business session.

I was introduced as a professor and as being in charge of the Government farm at Ottawa, and although I do not wish to make any corrections or in any way dispute the chairman of your meeting, yet I think it is perhaps fair to you as an audience to realize just what your Experimental Farm system is, and is attempting to do. The Federal Experimental Farm system is composed of the central farm at Ottawa and twenty-nine branch farms and stations scattered all over Canada. These are experimental farms. We are not professors. We are just your farmers. Our primary object is to investigate the needs in all phases of agriculture for your benefit. We want to keep in touch with you and we expect you to make the best use of your farms. Remember that you, the people of Canada, have requested and demanded these farms, have established them, and we are trying to operate them as you would have them operated for your own benefit. If we do not know your Province if we are not explaining and investigating the agricultural problems as you would desire, I think probably as much blame is yours as ours. I feel that you do not know our exjerimental farms; you do not know our organizations. Perhaps you do not realize our difficulties and you do not place your problems before us just as freely as would be in the best interests of you, the farmers of the Province of New Brunswick.

I am very glad to note that pou are going to the Experimental Farm at Doak to morrow and I know that you who have been out there before will see some very appreciable changes, improvements, advances, particularly in the live stock, which you can see very well at this season of the year.

I was asked to speak a few words tonighton the subject of feeding of dairy cattle and this is such a big subject that I scarcely know just where to begin. However, I will try to touch on a few of what I consider the major features in the feeding of dairy cattle, and I would solicit you to ask any question or bring up any problems which are peculiar to your conditions and which might possibly assist me in handling this rather large and difficult subject. I understand that you have starts with the feeding of the cow five or six months before the calf is bred. The feeding of the dairy cow is the most important step in the production of cheap milk, in the production of good, strong, vigorous calves, in the production of calves with the constitution and thrift to be the kind that mature early and prdouce strongly. We have actually proven in our experimental work with dry cows, that cows deserve the dry period at least four weeks; that the dry cow properly fed—I mean fed liberally on good rich roughage, on good grass, put in really good condition, fairly fed in other words—will produce from 40 to 50% more milk in the year succeeding the actatio nperio, than the cow that is starved and ill fed, the cow that run against the cow shed. Durbeen discussing the question of the eradication of the scrub stock. It seems to me that better food will do more to eradicate scrubby animals, male and female, than anything else you can do . I quite appreciate the value of good breeding and the value of the good sire as compared with the poor sire, but there is one thing that is absolutely certain, that you can make the very best bred calf into one of the best scrubs you can possibly imagine by poor feed, and you can make a fairly poor bred calf into a reaosnably good calf by good feeding. Good feeding and rearing is the climax of good breeding. It is the superfeeding cannot be too strongly emphasized. I would like you to get that matter clearly in mind and if there is structure. It is the finish. Good any dispute on the subject, let us have it.

The feeding of dairy cattle really ing the dry period and until she freshens, take off only a small amount of milk at the start and dry off gradually in your lactation period. More than that, if there is one time in the period of milk production when you can influence the feed test it is just during that dry period. The cow that is dried and is fattened will in the first ten or twelve weeks produce considerably richer milk than the cow that is thin when she freshens. I hold in brief that good fattening of the dairy cow is profitable. It is profitable in increased milk production, in considerably increased fat production, and in much stronger and more vigorous calves. Our method of handling dry cows is simply this. Our average cow produces milk about ten months in the year. If se is a very persistent producer we try to dry her off two months before freshening. As a rule our cows are freshened in the fall. As a rule we find that our freshened cows will produce more milk in a year and taken year in and year out a cheaper milk. Of course the cheapest milk per pound is made on grass. Our cows are dried if necessary forcibly by the cutting off of the ensilage rations. We cut them down to one milking a day, or one milking in two or three days. Then we proceed to feed a good cheap roughage ration. If they are fall freshened and if after grass is cut we make that grass the bulk of the rations and we supplement that with what grain is required. If it is later on and the cow is in the barn during the dry period we depend altogether for our rations on either ensligae or roots or a combination. I prefer roots for the dry cow or for our freshened cows, to any other one food.

Cheap roughage is the basis of cheap milk production. Cheap roughage for you, to my knowledge, would be clover hay, roots and I believe some ensilage either of corn, if you happen to be able to raise corn, or peas, oats, or possibly a mixture of peas, oats and vetches. All of these have shown excellent results and we have been testing them for the past ten or eleven years. In addition to that we feed grain. We have actually proven that a bag of grain fed to a dry cow isequivalent in equal milk production to two or three bags of grain after the cow has freshened. It is a greater stimulant towards heavy production than any amount of good feeding after the cow has freshened can equal.

The grain mixture which we use is a cheap and as much home grown as possible. We prefer oats and barley with some bran as the basis. If we have clover hay we add some oil cake. We prefer however not getting the cow too dry so we supply 8 or 9 pounds of milk per day to dry cows. That may seem expensive, but we have actually proven that if the cow be of the kind that we have to forcibly dry that that 8 or 10 pounds that we have to use is a profitable investment. More than that, we find that our calves are very much more vigorous, are stronger and they get ahead by a very much better start,

This result of our observation and tests after all only goes to prove the practise which our very best dairy farmers have adopted for the last fifteen or twenty years. We can actually produce figures in most instances to prove the desirability of this practise.

The care of the cows at calving is another very important step in the feed for cheap milk. After the cow has freshened we leave her alone, give her a warm drink and leave her alone for twelve hours, and then feed her thin bran or a thin bran and oats slop, preferably warm, three times a day for the first two days. If it is in summer and there is sufficient grass we probably cut some grass for her the first day and let her out not earlier than the second day. We never milk our cows up dry until the end of the third day. We invariably find that a cow which is predisposed to milk fever is almost sure to have it if you milk her up dry during the first or second day. The sudden shock on the nerve centres from taking of the milk from the udder will induce the paralysis which in reality is nothing but milk fever.

We always feed the calves the beestings and we find that there is nothing that will take the place of this in starting the calf right. It is absolutely necesary in order to give the calf the proper start in life.

We find that milking our cows three times a day for the first three or four days does more to get rid of any extra inflammtion and to tide the cow over in case of milk fever or anything of that kind, and to get her system proper adjusted to milking and to stimulate the milk flow. A good heavy producing cow that is capable of milking 50 to 60 pounds of milk per day will actually pay for the third milking. We have some grades of cows of Holstein breed, I will admit, that are milking as high as 73 pounds a day in two milkings. One of these we switched over to three milkings, with exactly the same amount of feeding—more labor, of course, in milking. With the extra milking these cows invariably jump to 85 and 86 pounds of milk per day. I hope there are lots of cows in New Brunswick at present that are capable of producing the 60 pounds and that will demand the extra milking.

The feed of the calf starts from birth and is after all a comparatively simple proces as we follow our practise, and all our experiments in calf feeding have been with this object in view—the producing of the very best possible calf at the least possible cost. Whole milk at present valuations of $2.50 to $3.50 per 100 pounds is the most expensive calf feed that you can handle anl you dairy men must look to some cheap substitute. We have carried on experiments for the last

seven pears in calf rearing. With some we use whole milk with calf rearing for the first four or five weeks as against pail feed. With those that are raised o nskim milk we use some additional flax seed, double milk whey and follow with calf meal either home made or purchased. Our cheapest and our best calves are ou skim milk calves, with whole milk valued at $2.00 per hundred weight, and oats, bran, corn at the prices ruling some two years ago about 50% lower than they are at the present time. At these prices our whole milk calves were costing at five months of age about $16.00 per hundred pounds to raise. At present prices our whole milk calves at six months would cost in the vicinity of $18.00 to $19.00 per hundred pounds. Then our pail fed whole milk calves and calves that were scrubby were costing about 10% more.

With skim milk valued at 30c per hundred weight, we use a good meal substitute such as two parts farm ground midlings, two parts of corn and two parts of cotton flaxseed. The mixture is prepared and fed as calf meal and added to the skim milk, and later on take out and fed as a dry meal, and gradually oats added to that. Calves reared on that basis cost us only $4.00 per 100 pounds of gain. We have reared a number of calves after they were ten days af age on prepared mixtures such as Royal Purple, Blackwell's, Colwell's, Gold Dollar, and several other calf meals. We consider, generally speaking, the Royal Purple one of the best of these methods, Blackwell's and Colwell's very close competitors. Freedom from mustiness is a great feature in any of these prepared calf meals. However, we have reared some fairly good calves starting them at about a week old, cutting the milk out altogether within two weeks and rearing them on this gruel, but they invariably cost us from $7.00 per hundred weight to $8.50 per hundred pounds, while our skim milk calves valued at about 30c per hundred weight, costs us around $5.00 to $5.50 per hundred pounds of gain. It is possible to raise good calves with skim milk, and they are invariably the cheapest all round calf that you can rear. Our practise in calf feeding as the result of our experiments has proved about the following,—We feel that the calf must be started properly so we never give the calf less than two weeks of whole milk. We pail food from the day it is born except in the case of heifers have undue inflammation of the udder. The calf is taken away at birth and starved for twelve hours, and by taking it away at birth the cow never misses the calf and the calf never misses its mother. We feed the average calf from ten to fifteen pounds per day, divided into three feeds, if we have the labor. At the end of two weeks if it is an extra good calf we increase the whole milk and give it one or two weeks of whole milk feed, but with our average calf we start at once to switch over to a skim milk and a meal. We use an equal mixture of ground oats, corn, grain and flaxseed and mix it into a kind of gruel, or we try Royal Purple, Blacwell or Gold oDlar. If rolled oats can be obtained more cheaply per pound than these prepared calf meals, use the rolled oats, with just a little oil cake or flaxseed. This will produce just as good calves with skim milk as you can possibly yet. We feed as high as 20 pounds of skim milk per calf per day if the calf is able to handle it, but we make all changes very gradually. At the end of 14 weeks the calf will take the skim milk and a meal substitute. About that time we start feeding them a few whole oats to help to change the rennet to the adult stage and as soon as the calf is handling whole oats we start crushing the oats and feeding as a separate mixture. We never forget the salt and water for our calves as I am sorry to say that 25% of our farmers are forgetting to do. Salt and water are just as necessary in the feed to be given to calves after they are two weeks old as they are in the feed of milch cows. We keep the skim milk up to six months of age, and at the end of six months we have a calf considerably larger than our whole milk calves—not as fat perhaps, but if they are put on pasture they go ahead and do extremely well, while our whole milk calves invariably shrink for two months.

You men who are rearing pure breds know the ill effect of too much milk for your pure bred show bulls. Invariably they will get a crest which is almost impossible to get off. They will get thick in the throat and as early bulls and later on as two year olds they carry a crest which is decidedly objectionable and which will almost surely go against the animal in the show ring.

The skim milk calf is the thrifty calf right up to two years of age.

Just a point as to feeding of two year old heifers. If there is one time in the history of the dairy cow when you can make the udder induce the maximum capacity of the mammary glands and mammary veins and give capacity for future milk, it is with the two year old heifer. I know in Ontario even in the past dairy season the freshening of two year old cattle is done, but if they calf the calves invariably are too small and are invariably thin. The result is that the two year old heifer is scarcely able to properly feed a decent calf.

The two year old heifers on our Experimental farm, that is—calves at from 28 to 30 months of age, or as late as 33 months with our small heifers—are producing an average of 6000 to 8000 pounds of milk depending on the breed. That is almost twice as much as the average dairy cows produces in Canada, or in fact in any of the eastern provinces of Canada. There is no reason why with proper attention at the correct time, with proper feed and especially just before calving, there is no reason why the two year old heifer should not produce at least 80% as much as she is capable of producing as the mature cow. So from three to four months before calving we start graining our heifers and we feel that if we grain these heifers up to 8 or 9 or 10 pounds of fairly strong meal per day that it is profitable. I know it is contrary to the practise of the average dairy man, but the result we find is this,—we give our heifers feed that invariably produces three times as much milk in the udder, the udder is stretched to twice the capacity of the two year old that is not fed. The softer fat that is on the body of that heifer, as the result of the extra feeding, will be invariably returned within the first three months as extra fat in the milk. That in itself, wtih butter fat at present prices will almost pay for the amount of milk that you have used. I always figure that the production of the heifer, or for that matter of a cow, is about in this proportion,—If you start a toboggan with an elevation of about 40 feet and an angle of 45 degrees, when it strikes the level is will probably run 50 feet. If you start it on an elevation of 100 feet with an angle of 45 degrees, before it strikes the level is will have gained more and more in speed and it will probably run an extra 150 feet. And if you start a dairy cow with a flow of milk and carry her along you will go twice as far and you will produce twice as much milk, and the low producer will follow the same normal decline.

Now just a few words as to rations and I am going to stop. Our rations are all cheap farm grown roughage. Cheap farm grown roughage must be reached and must have the necessary elements or characteristics following,

1. Palatability.
2. Easy Digestibility.
3. Suitability.
4. Succulence.

These in my estimation are the main essentials in growing farm roughage. In valuing feed or in buying feed I find it is well to test it by a little figuring. This is the way I usually purchase all our feed, in the shape of concentration of value when buying good farm grown roughage. Mangles and turnips, for example, contain in total digestible nutriants—that is, starch, fats, carbo hydrates—per ton only 148 tons of digestible nutriant. If you can raise roots at $40.00 per ton (which, with the exception of very abnormal labor conditions, is quite easy in ths Provnce) it means that your gross cost of digestible nutriants per 100 pounds is $2.70. Just in comparison with that, oats at $60.00 a ton—that would be $1.00 a bushel—cost $4.25 per 100 lbs. of digestible nutri ants. In other words, the mangles at $4.00 per ton are almost half or just a little over half as expensive.

In either buying or valuing food stuffs you do it from one of two angles if you actually study those food intelligently. A farmer who has a lot of rich, well cured clover hay has just aout as cheap a source of protein as he can possibly get. Of course clover hay at $15.00 per ton costs you in digestible proteins per 100 pounds, $8.40, as compared for example with any of the grain which you are buying; cotton seed meal for example—almost invariably the cheapest protein,—at $65.00 a ton or $7.00 per 100 pounds just a little cheaper. Barley at $60.00 per ton $30.00 per 100 lbs. of total digestible nutriants,—nearly three times as much digestible protein in your clover hay. Wheat bran at $35.00 per ton costs you in digestible protein $11.37 per 100 lbs.

If a farmer has good clover seed he does not want to buy proteins, particularly for his milch cows. If he owns anything in the shape of meal or grain, what he needs is something that balances about the same. If he has a little more corn than clover hay what he wants in digestible proteins is starch and fats. On that basis he selects his feed for total digestible nutriants. If on the other hand he has a lot of rough hay, middle hay or quite thin hay that is quite woody with a large amount of vetch and consequently rather poor as compared with fine clover, on that basis he wants to buy digestible proteins.

As I see the question of selecting meal for dairy cattle it is a question of either digestible proteins or total digestible nutriants, altogether depending on the grain and quantity of roughage which he has at his disposal. The cheap farm grown feeds, like clover hay, pea and oat ensilage, or oat ensilage, mangles or turnips give the cheapest total digestible nutriants by far, give almost invariably the cheapest digestible proteins, and so in actual practise and as you would actually figure it out, there is no question whatever that the dairy farmer who is basing all his rations on good farm grown roughage is the man who will invariably produce the cheapest milk and make the greatest net profits on his operations.

As to selection of other feed, everything depends on the market. As feeds were some months ago, this is the order in which proteins could be purchased most cheaply,—First, Cotton Seed Meal, second, Linseed oil meal (Linseed oil meal was the cheapest source of protein that was available in quite large quantities. The next cheapest source was wheat bran at $37.50 per ton Montreal freight; that is, either coming from the east or going back west along the branch lines. That would be equivalent to about $43.00 I suppose parallel lots f. o. b. Fredericton or St. John.

Wheat shorts at $5.00 per ton more was the next in order.

Gluten, which is purchased by the starch manufacturers (I presume there is comparatively little of this reaches your market) was the next.

Green leaf screening, which you use in quite large quantities for your hogs, and which is also suitable to replace bran or shorts or oats in the dairy cow rations, was next.

Then oats and barley. However, during the last three months oats have become so considerably cheaper that we find oats and bran vieing for third place. Barley is still far down on the list, it being more expensive per pound of protein.

Corn which is distinctly starchy stood about at the bottom of the list. Dry beet pulp was a little lower than the corn. Now, however, from a view point of total digestible nutriants we find corn pretty well up towards the top of the list on account of the very large amount of cheap starch and cheap fat.

However, wheat bran was on top, wheat shorts next, leaf screening next, then distillers grain for which there is no demand. Cotton seed oil, corn, barley, gluten, wheat and oats, (oats however being considerably cheaper now stand in just below wheat shorts).

It seems to be a comparatively simple process of selecting whatever grains are required for dairy cows if one would just sit down and figure on the total digestible percentage in each of these foods above. You can work out a table in a very few minutes with a very little figuring, and you can with your local market prices tell very accurately just what is the cheapest meal or the cheapest combination of meals in order to balance the roughage which you have on hand.

Some of our best rations for food for our dairy cows during the past few eyars have unfortunately been knocked out by reason of the fact that many of our best feeds are not available at the present time.

The rations which we feed to milch cows weighing about 1000 pounds are about as follows,—

Mixed hay, 15 lbs. per day.

Mangles, if available; if not, turnips, 35 to 40 lbs.

and meal feed at the rate of 1 lb. for every 3½ to 4 lbs. of milk produced, for freshened cows, and considerably less meal for cows as they advance. Another good mixture is bran 4 parts, oats 2 parts, barley or grain 2 parts, oil cake, 2, and cotton seed meal 1 part.

Another good mixture which we use is clover hay 9 lbs., mangles 25 lbs., ensilage of corn or peas and oats 35 lbs., oat seed 4 or 5 lbs.

Another mixture is composed of bran 5 parts, oats 3 parts, barley 2 parts, and oil cake 2 parts.

These are just characteristic rations depending on the amount of succulent food we have and the character and quantity of the dry roughage which we have on hand.

There is one point that I want to mention and that is the question of feeding grain on pasture. With the spring freshened cow going there shortly after freshening on but a soft lush grass, we invariably find that 1½ pounds of cotton seed meal with an equal quantity of bran is one of the very best things to keep her from souring. So the very soft grass of the latter part of May or early June we balance with equal parts of bran or grain oats and cotton seed meal and we feed that 4 or 4½ ponds per cow per day.

After the marked change from winter to grass feed has passed we very often drop the meal altogether after the pasture is good and reasonably firm. However, a little meal, even if it is just ¼ to ½ pound per day is worth a good many hours of work in getting the cows in from the pasture.

However, generally speaking we gather in all the heavy grass for four weeks and when the first pasture begins to get scant we invariably start our summer meal mixture and we feed it to our cows, even on fairly good grass, during July and August. We feed it as high as one pound of meal to five pounds of milk produced and we actually find in some cases it increases the cost of our milk, but generally our milk is so much increased in quantity that the difference will more than pay for the meal given. We use a mixture under these circumstances of oats and bran equal parts and then we add to that equal parts of cotton seed and oil cake, making a mixture of two parts of bran, two parts of oats and about ½ to ¾ each of oil cake and cotton seed. This is a very well bal-

anced mixture for fair practise and is well worth while.

In case of shortage of pasture we in Quebec and Ontario have something which you in New Brunswick do not universally use, and that is the summer silo. The best silo is the silo used for corn which is the cheapest source of supply that you can get as it is already prepared and not as much bother as some, for instance,—peas, oats and vetch cut and bailed to the silo are very much more expensive and more bother. A man would invariably have to leave other necessary work of cultivation or harvesting to haul in that jag to the cows.

Farther West, and I believe a practise which will be adopted here in the East—is one of the summer fallow pasture to take the place of a shortage in your permanent pasture—pasture seeded at the rate of a bushel each of barley, wheat, oats and a little spring rye if you have it. Seed a bushel each of these on three acres (with a little clover seed when it is a little cheaper as seed). It is being used in Western Canada to advantage and we are trying it in Ottawa, and it is really very, very cheap. No preparation is required for food and an acre is able to carry 2 cows 1½ to 3 months if properly handled.

However, the question of pasture as I know is not a pressing one in the majority of districts in this Province as you have a bountiful supply of good pasture for your dairy cows and it is just a question of balancing the grain and the grass with a limited amount of meal, so that there may be no radical change in the feed of the cows, and you may get the feed of the cows that you may get the maximum production at the lowest cost, and that brings me to just this last point:—If we as dairy farmers are not big enough business men to realize that big business—the same as in manufacturing—means our greatest profit and that the small business, even though our margin of profit may be greater, means small profit. If we cannot realize that, then we have something to learn from our American friends. The man who is making his cows produce their maximum under reasonabel commercial conditions will make the greatest net profit on his milk during the year, and will almost nvariably do the best calf raising. The man who is rearing the best two year olds is the man who is producing the best commercial cow, either for the building up of his future trade or for actual sale. The man who is a good feeder is the man who is the liberal feeder and he will make more milk, as I said before, and will make milk more cheaply per hundred pounds month after month than the man who is a meagre feeder and who expects the cow under all conditions to obtain a maintenance ration and sufficient to produce milk either on poor pasture or on poor roughage. The food feeder is the successful dairy man of the present and he is bound to be the most successful dairy man during the next few years.

I believe that the outlook for dairying was never so promising as it is at the present time. Our markets for high quality cheese, butter and for dairy products were never so unlimited as at present. We have excellent home markets. We have any export market which we care to deal with, and it simply means that the dairy men of all Canada, particularly of Eastern Canada must through bigger business and above all through co-operative marketing and increasing the excellence of the manufactured product, continue to top the world's markets with a quantity of high quality stuff.

You farmers of the Province of New Brunswick who have comparatively small quantities of export dairy products at the present time have, I believe, one of the very best fields for export to the United States in the great markets of Massachusetts and farther West and South, and you can, I believe, comand these markets, and especially the building up of export market to England if you will only get after the dairy cow and by giving feed get the quantity of milk and the quality of milk which the cow is capable of producing, if you will only give her a chance. Nothing is produced from air or laziness. The cow cannot do it, and if you give the average dairy cow a fair chance I will guarantee that you won't have to complain so much about the scrub cow or even about the scrub sire. oGod feed will do more towards establishing your industry in a big way than any other successful feature that I could mention.

I really owe you an apology for this rather lengthy, disjointed and probably none too lucid talk of mine. I really have this subject at heart. We on our Experimental Farm at Ottawa have at present about five hundred dairy cows milking and we use our records of feed, lengths of time of feeding, milk production, quantity of milk—that is as to fats and solids as to the different products or the grades of different products—we use this information to the best of our ability to show deductions, so that it may be worth turning over to you and I feel very keenly on this question of better feeding, bigger feeding of this big, capacious, roomy, big-producing cow that we could have all over Canada.

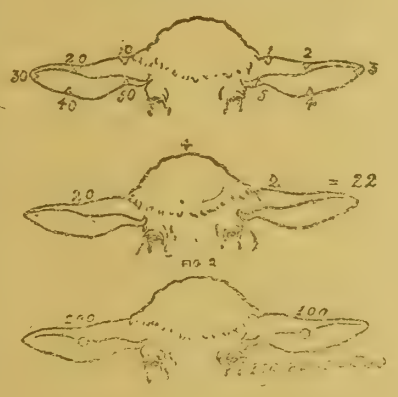
Keeping Records of All Class of Farm Stock by Means of Marking System

The adoption of a system of marking farm live stock is advisable rfom several standpoints. Frequently doubts will arise as to the lawful ownership of certain stock. In such cases only those animals which have been given a distinctive mark can be positively identified and their ownership established beyond dispute. Aside from this aspect of live stock farming, a system of marking affords a means of keeping a record of the age, relationship, performance and financial returns of breeding animals. Breeders of pure-bred stock must pay particular attention to the keeping of such records if they would obtain the greatest measure of success from their business; and it is only by giving each animal in a herd a distinctive mark that reliable records can be kept.

The branding of cattle is perhaps the most familiar system of identification as a meeans of making ownership indisputable. Sheep and swine are generall marked by means of ear-labels or by notching the ears. Sheep are sometimes makred with black paint, a piece of sheet iron on which the owner's initials and a number are inscribed being used to impress the brand on the wool on one side of each animal where it will remain very distinctly until the sheep is sheared. After shearing, of course, the marking has tao be done over again.

When sheep are given ear markings labels are more commonly used than are notches in the ears. But in marking swine, a system of notches is generally preferred. Hogs cannot be prevented from rooting in the ground, or from frequenting mud wallows, and since the metal tage upon which numbers and initials are stamped are quite small, when a tag gets dirty the animal has to be caught and the tag cleaned before the number can be read . Hogs are also prone to fight and snap at each other's ears, and thus the tags are torn from the ears. But sheep and swine are totally different in their habits and the tags which hogs so quicklly render useless may be used on sheep with entire satisfaction to the flocks' owner. Since the sheep must be caught at shearing time anyway, the ear tags may be reead or renewed at that time and it is seldom necessary to catch the animal for that purpose alone.

Ear-labels for sheep are made of metal and each contains a number on one side and the breeders' initials on the other. The label is small and neat and does not disfigure sheep in any way nor cause pain at any time. When properly put in the ear by means of a near punch, such as can be bought from various dealers, the label very seldom becomes lost, but remains with the sheep throughout its life. Sometimes, however, the tags wil lbecome caught in the meshes of



a woven fence or on the barbs of a barbed wire fence, and be torn out. This also applies to hogs which are tagged; these animals are always attempting to break out of their enclosure and frequently become entangled in the fences, with the result that many of the tags are soon torn out. In tagging sheep, each tag should be placed on the lower side of an ear, fairly close to the head; there is then very little likelihood of its becoming lost. Labels can be inserted in the ears of old sheep as well as young.

Marking Hogs

Different breeders have different systems of marking hogs by means of a series of notches in the eears that represent numbers. The system described below is now used in many parts of the country. The lower part onyl of the ears is used in numbering the pigs up to 99. The part next to the head is called the base, and the outer part is called the tip. Then, one nick at the base of the lower part of the right ear stands for the number 1 and two nicks for 2. One nick at the tip of the lower part of the right ear represents 3; one at the tip and one at the base, 4; one at the tip and two at the base, 5; and two at the tip, 6. Two nicks at the tip and one at the base in the lower part of the right ear stand for 7, and two at the tip and two at the base for 8, while one nick in the centre of the lower part of the ear stands for 9. Thus units are represented in the lower part of the right ear. Tens are represented in the lower part of the left ear in the same manner as units are represented in the lower part of the right ear. By this means a breeding herd of 99 brood sows can be marked with absolute accuracy.

As these sows farrow their pigs, the pigs are marked the same immediately after farrowing as the sows. If then, at weaning time or some time later, some of these gilts are to be put into the breeding herd, they are given an additional nick, so as to change their number from that of their dam. Special punches for making these nicks can be obtained from dealers. When the pig is small, or immediately after farrowing a punch with a die that has a rather sharp point shoull be used, while for the larger hogs the punch should have a die with a rounded or oval point.

If a larger number of hogs than 100 are to be marked, the upper part of the left ear can be used for hundreds and upeer part of the right ear for thousands. Such a system is very easily memorized, and the numbers can be easily and accurately read as the hog is in view. About the only way that such markings may be destroyed is when the hogs engage in fights and either tear off part of the ear or bite in new nicks, and even in such a case the tear in the ear is not rounded at the inner point as is the nick made by a punch.

Lambs, Pigs and Poultry

It is very essential that pure-bred lambs and pigs be marked when young so that a correct record can be kept of sire, dam and date of birth of the young animals, which is necessary for their registration.

It is often advisable to mark poultry, as well as the larger farm stock. Leg-bands or the toe-marking method may be employed. Leg-bands are made of aluminum, and are very easily adjusted to a fowl's leg. They can be had in different sizes for different breeds and can be procured at almost any poultry-supply house. Numbers which can be recorded in a book are stamped on the bands.

The toe-marking method is very simple. A small punch which punches holes in the webs of the feet is used. This does not disfigure the birds, and causes practically no pain at the time of marking or afterwards. The little round marks will be less likely to grow together if the chicks are toe-marked when about a week old. A system of marking similar to that given for ear-marking hogs may be devised for the chickens. Keep a record in a book of the way the chicks are marked, so that when they are grown up it will be possible to tell by the aid of the book almost anything it is desired to know about each chick.—W. F. P.

A CHEAP FLY SPRAY

Flies cause considerable annoyance to dairy cows during the summer and not only does the irritation caused by the flies tend to lower milk production but the restlessness of the cows is a frequent cause of inefficient milking.

A good fly spray can be made from: 4½ quarts coal tar dip; 4½ quarts fish oil; 3 quarts coil oil; 3 quarts whale oil, and 1½ quarts oil of tar.

Dissolve 3 lbs. laundry soap in water, add the ingredients of the spray and bring the whole up to 30 gallons with lukewarm soft water. This spray wil keep off the flies and prevent the coats of the animals becoming harsh.

The cows should be sprayed twice a day—in the morning after milking and in the afternoon when in the barn for silage or green feed. With a portable cart, made from a half barrel by attaching wheels and a spray pump and nozzle, two men can spray 40 cows in five minutes.

The watering of early plants should be done with a fine spray nozzle, and not dashed on ini such a way that the seeds will be uncovered.

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DATES OF ISSUE

June 10-24

MAY 27, 1919

MAKE FARMHOUSE CHEERFUL

Apart from the esthetic value to be derived from it beautifying the farm dwelling, modernizing its equipment, is good busness. It is an investment that brings profitable returns. The farmer and his family need wholesome relaxation just as much as any persons constantly employed. The home should be the place in which to obtain it.

An attractive dwelling with an inviting approach acts as a magnet on the tired toiler. The sight of flowers and a well-kept lawn is a relief from the drab clods of the plowed field, the brightness of the blossoms a change from the sameness in the color of growing crops. A cheery interior at once dispels care and bright rooms induce rest.

Every dollar judiciously spent for labor-saving devices and for sanitary conveniences is an investment and labor-saving contrivanves a necessity in these days of enlightenment. They save wear and tear of the human machine and prolong life.

TO REDUCE MILK-PRODUCTION COSTS

Following a study of practical means to prevent the cost of milk production from rising to a point where dairying ceases to be profitable, the Dairy Division of the United States Department of Agriculture has found that four important factors have a direct bearing on the problem. By attention to these factors, all of which are within the control of producers, it has been found that the cost of production can be reduced considerably. The factors are raising the average production per cow, reducing the quantity of concentrated feed given low-producing cows, substituting legume roughage for a part of the concentrates, and more careful handling of the manure. The importance of handling manure properly is secondary in importance only to feed from the standpoint of net profits.

SEND OUT NOTHING BUT THE BEST

"Money cannot buy an inferior breeding hog from ——— Farm. What is not good enough for us is not good enough for you."

This statement was taken from a circular that one of our breeders sends out to his customers and prospective purchasers. It comes from a breeding establishment that has a policy, a policy which if followed consistently would build a good profitable business for any breeder.

This man breeds and sells good hogs this year, and he expects to do the same thing next year and the years to follow. Therefore, he wants satisfied customers, who are necessary to make his business permanently profitable.

It is regrettable that a few men have sent inferior animals into outlying districts where purebreds are not so well established. Just why this has been done we can only surmise. It has been thought he would "get away with it" because the buyer was so far away. The seller does not stop to think that a majority of the buyers of this far away territory know good hogs when they see them. Scrub stuff can't be pawned off on these men just because they are located in outlying sections of the country.

The worst thing about this unscrupulously dealing is that the seller is not the only one injured. It injures every honest man who sells purebred hogs by mail order. It may happen that the buyers in outlying sections get in touch first with a man who ships out animals not up to standard. If he places an order and secures a mediocre animal he might take it for granted that this particular breeder is representative of the breeders who sell purebreds in the hog section. But this is not the case.

Swine breeders have found that to build a good trade in pure-breds a man "must do as he wishes to be done by." They now understand that they must sell the kind of hogs that they themselves would buy if they were in the market for something in this particular line.

A business bult upon this principle will grow and prove profitable.

FARMERS' OWN PROBLEMS

It is a very bad policy for farmers to contract the habit of looking toward the Government for a solution of every problem that confronts them in carrying on their industry. The Department of Agriculture is doing a great deal in disseminating truths regarding agriculture, and farmers should ever be ready to use the material which will apply to their conditions, at the same time never forgetting that their welfare lives very largly in how well they can direct their own affairs. For instance in the marketing of farm products, no Department of Agriculture can solve that problem for farmers.

On both sides of the Atlantic this opinion is held in connection with many of the rural problems.

Sir Horace Plunkett, who is the best British authority on agricultural economics, has this to say on the subject: "We think that in working out our own problems what we can do for ourselves is worth ten times what the Government can do or does for us."

Mr. J. D. Miller, vice-president of the Dairymen's League in America, in substance says:—"We must work out our own salvation as to many of our farm problems. I have profound faith in the ability of farm organizations of this country to solve the problem, if, and only if, they learn team work."

These men have given much time and consideration to farm organizations, co-operative effort, and what may be expected of a Government to assist in solving farm problems. There are those who feel that the period through which we are passing is critical, and that it is going to requre great statesmen to think out ways and means for handling agricultural problems. Too many, in looking towards the Government for help, forget that the Government is of the people, and is not something separate and apart from them.

TO DETERMINE FARM PROFITS

There is much more to consider about the operations of the farm than the amount of money received for the products sold. It is not always the sum of sales that determine the profits of the farm. One must consider the outlay for seeds, tools, hired labor, as well as the farmer's own time. When these amounts are deducted from sales, then the man has some idea of what he is making in profits on his labors. It is up to the farmer to buy to good advantage, hire labor that is efficient as well as reasonable in price, and then sell on the best market. It is only when farming is conducted at a profit that the man will retain his love and interest in the profession.

NAME THE FARM

One of the improvements that some farmers might make in their business this year is to name their farms, then have some attractive letterheads printed. These letterheads should contain the name of the farm and its owner and any other fact that it is desired to advertise, such as the kind of live stock, poultry, seed or grains raised. There should not be too much put on as it will not look well, but it is a decided advantage to have one's letters go out in a business-like fashion. The kind of letters and the appearance of the stationery tell much about the writer, often some things that he does not wish to be known.

SAVE MANURE!

There has never been a time when the making, saving, and utilizing of all sorts of farm manure was so essential. All fertilizing material is high in price, and some kinds can not be had in sufficient quantities at all. Farm manure may be used for a number of purposes to a much greater advantage than commercial fertilizers. The total quantity of manure can be greatly increased by keeping livestock sheds and stables well bedded with straw, leaves, and other refuse about the farm.

* * *

A nation composed of avaricious, selfish people is a nation of selfishness and greed. A nation whose citizens are men and women of honor, industry and truth is an honorable nation that will lead in the affairs of the world.

"Righteousness exalteth a nation." The character of a nation is made from the character of the people. The common people may never hold office or directly conduct national affairs, but the manner in which they meet their obligations in every-day life and the men they select as officials determine what the ideals of the country shall be and what principles should be emphasized.

The responsibility for honesty and equal rights is as binding upon individuals as officials. The farmer who is concerned about his farm and his livestock should give some thought to his country and to the men commissioned to serve him and his neighbors in a public capacity. For farmers are a part of the nation and a very important part. As producers and citizens farmers are indispensable.

* * *

Most dairymen realize, notwithstanding all that may be said to the contrary, that cows having water available all the time will yield more milk than where the supply is restricted.

BUILDING UP LIGHT SOILS FOR BIGGER CROPS

Every farmer knows the importance of an abundant supply of organic matter or humus in the soil. He knows that the sandy soils do not contain as much of this material as do the loam soils, and he knows that if the fertility of the sandy soils is to be increased, they must be made more like the loams as to their content of organic matter.

Myriads of Living Things in Soil

The soil teems with tiny forms of life that feed on the plant and animal matter that is added to it. In the light, open soils conditions are so favorable for the different kinds of life that the plant and animal matter is completely destroyed, while in the heavier soils conditions are not so favorable and a residue of partly decomposed organic mater or humus remains to serve as a sort of food for the crop.

Organic Matter in Light Soils Must Be Increased

It is clear that the farmer cannot buy organic matter and add it to the soil. He must make the land redeem itself by turning under the crop or by returning that portion of it contained in the barnyard amnure to the soil, and by so handling the land that the plant food will not be leached out.

Draw Plant Food from the Air

In an experiment made more than 300 years ago, it was found that a willow tree weighing 164 lbs. had taken only two ounces of mineral matter from the soil, the rest of its food came from water and air. Thus if a crop is plowed under, the soil is improved because the organic matter in the crop was biult of materials that came largely from the air and water.

The greatest amount of organic matter is added to the soil when the entire crop is turned under. Under usual conditions this is not a profitable plan and a modification of it must be used. As for example, the harvesting of the crop, feeding it to stock, and returning the manure to the land This will be a slower way of building up the soil, but it is the more practical way.

Getting Nitrogen from the Air

The grains and grasses must obtain the phosphorus, potassium, sulphur, and nitrogen from the soil. If such a crop is returned to the soil the organic matter therein will be increased but its content in the substances mentioned will not be changed. The only way to increase the amount of phosphorus, potash, or sulphur in the soil is to buy these materials. Nitrogen is one of the elments mose likely to be needed in the light soils, and it is fortunate that nature provided the farmer with a way by which he can draw upon the unlimited store in the air and add it to his soil, and thereby make it much betteer for the growth of grains and grasses. The legumes, clover, alfalft, sweet clover, soy beans, and peas, when grown together with the bacteria that can enter the roots and produce nodules or tubercles thereon, can in some unknown way make use of the nitrogen in the air. Therefore, if a leguminous crop, on the roots of which tubercules are abundant, is plowed under, the organic matter in the soil will be increased, just as when the crop of a grain is turned under, but the nitrogen content of the soil will also be increased, something that could not take place when a grain is grown. It is possible by the plowing under of well inoculated legume crops to build up a soil quite rapidly if no attention is paid to expense. The farmer can, however, by growing well inoculated legumes, harvesting and feeding them, and returning the manure to the land, slowly build up his soil at the minimum of expense.

Must Supply Bacterial Seed

It should be recognized that the legume alone aannot draw nitrogen from the air, but it can do so only when grown in company with the proper bacteria. The bacterial seed must be supplied as well as that of the legume.

In the lighter soils, and especially in those that are acid, it is probable tha tthe bacteria do not live long in the soil in the absence of legume. If a legume has not been grown on the land for two or three years, as might be the case if a rotation of crops is practiced, the bacteria may have disappeared or may have been so reduced in numbers that inoculation is necessary. If the legume in question is not one previously grown, inoculation is essential. Examples of this condition in Wisconsin are found in the introduction of alfale and soy beans.

Proper Kind of Bacteria Must Be Present

The bacterial seed can be obtained by taking soil from a field on which the legume to be sown has been grown very recently. It is not enough to know that the crop on the field from which the soil is to be taken was a successful one, but the farmer must assure himself that plenty of nodules were present, otherwise the soil will not contain enough bacteria so that it can be used successfully for seeding the new field. In a general way, it may be said that each legume requires a special kind of bacteria. The same kind is effective on the common clovers, red, white, alsike and crimson, but is of no value for sweet clover or alfalfa, or are the bacteria which enable the altter to draw nitrogen from the air of any help to peas or beans.

The inoculating material may also consist of a culture of the proper bacteria grown in a laboratory. These organisms can be mixed with water with which the seed may be moistened. An abundance of nodules can usually be secured the first season by this method.

A Schedule for Improving Light Soils

Let us suppose that the main idea in your mind is to get organic matter into the soil as quickly as possible. What is the plan to follow? Sow a profuse-growing legume like soy beans. See that plenty of the proper kind of bacteria are in the soil or are added. Plow under the crop and sow the field to rye. In the spring plow this under and sow again to soy beans. Two years of this treatment will have its effect. This is not a feasible plan under farm conditions, but it is the one which we should approximate as closely as possible.

Keep Fertility on the Farm

To build up a light soil, sell butterfat and milk and hogs rather than beef or grain or hay because it means you will keep more of the potassium phosporusc, and nitrogen you now own on your farm. Grow legumes as much as possible and see that the roots are always thickly studded with nodules. If they are not, inoculate the seed, or if the legume has not been grown on the field for some time, seeding with bacteria may be essential. By growing legumes, properly inoculated, you may be taking dollars' worth of nitrogen from the air and putting it in your soil. This may double or treble your yield, and it is almost certain to increase its feeding value. It offers the best chance of getting something for next to nothing you are likely to meet.

Bare land possesses plant food and washes easily. Keep a crop on your light land constantly and turn under as many of the crops as possible.

Consider the future of your most valuable possession, the soil, as well as the present.—Wisconsin Bankers' Farm Bulletin 69.

MAINTAINING EARTH ROADS

This is a question of interest to farmers in every section of the country, for the mileage of earth roads is still infinitely greater than that af all other roads. An interesting discussion of the methods followeed and the results achieeved where the earth roads predominate, is supplied to the Wisconsin Good Roads Association by Mr. F. M. Sargeant, a division engineed of the Wisconsin Highway Commission. Mr. Sergeant writes as follows:

After a season's experience with the patrol system of maintenance in division No. 7, where we have practically all earth roads, I am more than ever convinced that this type of road can be fairly well maintained by this system, even where subject to considerable heavy motor traffic.

A patrol section should not be more than six or seven miles in length and should be taken care of by one man with team. This man should be held responsible for the condition of his section at all times and should be required to devote all of his time to the work.

The patrolman must have a good team, and the wagon box equipped with a dump bottom. The county should furnish a light two-horse blade grader, road plane, plow, scraper, and necessary small tools, such as shovel, pick, bar, brush scythe, rake, etc.

Use Grader and Planer

In spite of all the claims made for the road drag as a maintenance tool, we find the light blade grader or the road plane far superior to it, and advocate the use of these tools entirely for road maintenance. We find that a road drag having no bearing except on the blade, has a tendency to gouge out the material in soft spots making them still deeper, and giving the road a bad, wavy surface, while the blade grader or the road plane, having a long wheeel base or bearing surface, cuts only on the high spots and distributes the material in low places, building them up, and giving the road a nice, smooth, driving surface. A blade grader should be so constructed that one man can drive the team and make all adjustments necessary while the machine is moving, as only one man is required on this work.

An earth road with low crown and badly sodded shoulders cannot be properly maintained by the patrolman, but should be first trimmed up with a heavier outfit, cutting off and removing heavy sods, properly shaping up the crown, filling low places and opening up drainage.

The blade grader should not be used on earth roads when they are sloppy, but should be used as soon as the material is dry enough to roll nicely on the blade, and pack into the ruts and depressions. And no great amount of material should be moved at one time; a quarter or a half inch cut is sufficient for the best results, furnishing all the material that the blade can distribute evenly. And for a perfectly shaped road neither end of the blade should be allowed to touch the ground heavily enough to leave a cut or furrow in the road bed, the object being to merely shift a small amount of material from the high places to the ruts and depressions.

Use of the Grader

A well maintained road dries more quickly on the center than on the sides, and the first trip with the grader after a rain should always be made on the center, with the blade set to carry the loose mterial out, or into and across the rut and toward the shoulder of the road. A complete round trip should be made in this manner by which time the material out near the shoulder will be dry enough to work nicely nad a round trip or two should be made working the loose material from the shoulder in toward the center. This will leave sufficient material in the center so that the first cut after the next rain may always be made from the center out. Under ordinary weather conditions the material is in fair condition to work with the grader for about three days after a rain, giving ample time for three efull rounds of the section, which should leave even a badly rutted road in fairly good condition. Be sure to always make the first round trip on the center of the road.

The crown of an earth road that is properly maintained may be much flatter than the same type of road that has not had proper care. Six inches of crown on a twenty-four-foot driving surface is sufficient. Care should be taken that the road bed is nicely rounded, and not dragged to a peak in the center or a large ridge of loose earth left there.

Shoulders and Ditches

Shoulders and ditches of a road dry out considerably slower than the the material on the crown is too dry to handle to advantage. By trimming shoulders and ditches at this time the irass and weeds are easily kept down and the ditches kept in perfect condition. Heavy sods and rubbish from the road bed should never be graded off into the ditch and left, but ditches kept in perfect condition. Heavy sods and rubbish from the road bed should never be graded off into the ditch and left, but ditches should always be kept open and clean so that the grader may be crowded to the outside of the ditch at any time, to get fresh material for trimming the road bed.

All stones two inches or larger should be removed from the surface as soon as they appear. A large stone imbeded in the wheel track, aside from being disagreeable to drive over, will soon cause a bad rut in th eopposite track, while a loose, round stone is apt to criple a horse or cause an accident to a fast moving automobile.

Sand and Clay

Very good results have been obtained by hauling and spreading from one to three inches of sandy gravel or coarse sand on slippery, heavy, clay sections, allowing the traffic and use of the grader or planer to mix the clay and sand. The use of a few inches of clay on sand spots also gives very good results, but in this case the clay must be well mixed, into sand, preferably with a disk harrow, and the road bed properly reshaped with grader, bringing a thin layer of sand up over the clay to take the wear, and keep the clay from picking up on the wheels when wet.

Brush and weeds should be kept down on the right of way. Bad turns should be brushed out, so as to give a safe line of vision even if considerable work has to be done off the right of way.

Drain ditches and culverts should be looked after often, to see that they are not filled up. In fact a good, live patrolman can always find something to do to better the condition of his section, and if the work is properly done, an earth road can be really built up into a higher type of road by a good patrol maintenance system.—Hoard's Dairyman.

FIELD CROP COMPETITIONS

The N. S. Field Crops Competition Prize Lists are now on the press. Those who desire copies should write to Mr. F. L. Fuller, Truro, N. S. A new departure included this year is that in addition to the prizes for seed wheat and oats a series of prizes is being offered for seed clover. Production of this commodity should be stimulated by present high prices. There is also a special prize list for competition in turnip growing, for which the Halifax Board of Trade has generously donated the sum of $200.

It should be carefully noted that in order to qualify for entry in the Field Crops Competitions for 1920 in wheat and oats it wil be necessary to use registered seed on the field to be entered. The first steps toward fulfilling this condition should be taken now.

STRAINING MILK

Earnest Kelly and James A. Gamble, Dairy Division U. S. Dept of Agriculture

Milk, as it leaves the udder of a healthy cow, is clean and pure. It contains relatively few bacteria and no appreciable quantity of visible dirt. When cow hairs, praticles of manure, bedidng, or dust are found in milk they are evidence that the product has not been protected properly during milking or subsequent handling. On the other hand, the absence of visible sediment does not prove that the milk is clean, for it may have been carefully straineed after careless production.

The entrance of dirt into milk is objectionable from two standpoints—sanitary and economic. The contamination of milk by manure may add organisms which are injurious to health. Schroeder states: "The real danger from tuberculous cattle lies in the manne in which tubercule bacilli are disseminated with their fences."

He found that tuberculous cows cough up and swallow tubercule bacilli which pass through the digestive system and are excreted in the droppings. If particles of this matter get into the milk they carry with them bacteria which are capabye of producing tuberculosis in human beings or in other animals that consume the milk. Economically also the presence of dirt in milk is a disadvantage. Dirty milk is not so readily marketed as clean milk. Consumers are becoming more critical as to the appearance of the milk they buy. Milk contaminated with dirt contains greater numbers of bacteria, hence it is liable to sour more quickly.

Keep dirt out.

Strain through cotton or filter cloth.

Use only clean, sterile strainer cloths.

Source of Sediment

By far the greater part of dirt in milk comes from the body of the cow. Other sources are the air, the hands and clothing of the milker, and unclean strainers, pails, cans and other utensils. A very great proportion of hairs, manure, straw, hay, etc., which drop into the milk from the body of the cow during milking. Hay, chaff, and dust may also fall or be carried by the wind into milk either during milking or afterward, if it is left exposed. If the milker's hands are dirty or his hat or clothing dusty, some sediment may be carried into the milk from these sources. Unprotected pails, cans, bottles, or other utensils may accumulate dust. When milk comes into contact with them the dirt is washed og.

SUGGESTIONS

1. The milking barn should be clean, and well ighted and ventilated. The stalls should be built with regard to the size of the cows. Droppings should fall in the manure gutter and the cows should have a clean, dry, well bedded place on which to lie.
2. Keep the cows groomed to remove loose hair and/manure.
3. Before milking wash the cow's udders and flanks and wipe with a damp cloth.
4. Milk with clean, dry hands into a clean, sterilized, small-top pail.
5. Remove the milk immediately to the milk house, where it should be strained and cooled at once.
6. Keep milk tightly covered at all times.
7. Protect clean utensils from flies and dust.

What Straining Does

Straining, if properly performed, removes a large part of the visible dirt which may have fallen into the milk. For this reason it is useful commercially in improving the appearance of the milk. It must be borne in mind, however, that straining removes neither the bacteria nor disagreeable flavors that dirt carries int othe milk. nI other words, bacteria can not be strained out of moilk, nor does the process improve the healthfulness of the product to any appreciable degree. The reason for this fact is that bacteria are much smaller then the meshes of the finest strainer. Thus they slip through easily while the larger particles of dirt are caught and removed from the milk. Though the cow hairs and coarses dirt are held by the fire or cheesecloth strainers, many small particles pass through. This can be demonstrated readily by straining a pint of dirty milk through such a strainer into a glass par or pitcher. After standing for a short time much sediment will be found in the bottom of the receptacle.

Taylor determined that 85 per cent. of fresh manure disoslves in milk, 83 per cent, being moisture adn 2 per cent. solid material. He also found that 91 per cent. of the unuissolved manure was visible as sediment at the bottom of the bottle, while 9 per cent. was held in suspension in the milk.

Keeping Dirt Out of the Milk

In view of the facts presented it is evident that the wisest course is, so far as possible, to prevent the introduction of dirt and bacteria into the milk, and to use the most efficient straining method to take out all the sediment that can be removed.

Since the body of the cow is the chief and most dangerous source of milk sediment, preventive measures must begin there. Cows should be groomed frequently to remove loose hairs, bits of manure or bedding. In addition to the flanks, udder and adjacent belly should be cleaneed with a moist cloth just before emilking. If these parts are kept clipped they will be much easier to clean.

Most of the dirt which gets into the pail from the body of the cows falls vertcially during milking. A large part of it and its contamination may be kept out of the-milk by the use of a hooded or small-top milking pail. It can be made from an ordinary milk pail by the addition of the hood, which can be soldered on by any tinsmith at small expense. Many types of small-top pails are on the market, combining satisfactorily the desired points, which are cheapness, ease of use, durability, smallness of opening, and ease of cleaning.

The Dairy Division has examined and scored several thousand milk samples, produced on more than a thousand farms. Ayers, Cook and Clemmer publish photographs which emphasize the relative quanties of sediment found in these samples, classified according to the type of milking pail used, and state further: "The original cost of a small-top pail is little more than that of an open pail; it is no more expensive to care for and is of distinct value in preventing the entrance of manure and dirt into milk; consequently it should always be used."

Dust in the stable air is liable to get into the milk. For this reason every precaution should be taken to have the air pure during milking. Handling dry feeds, especially hay, should not be done just before or during milking. Sweeping the stable during these periods is equally objectionable. If the stable is built with tight ceilings and smooth walls, it will be easy to clean, and dust will not readily colleect in sufficieent quantities to contaminate the air heavily.

The milker's hands should be washed thoroughly and kept clean during milking. If they are allowed to become dirty they are liable to be a source of dirt in the milk, especially if "wet-hand" milking is practiced. The clothing of the milker should be free from dust which may fall into the milk pail.

Care is necessary to protect the milk from dust and dirt after it is drawn. Except when the milk is actually being poured into the strainer, it should be kept covered at all times to prevent the entrance of dust and insects. Much fine sediment is often blown on to the strainer if the latter is left uncovered during the intervals between straining.

Milk should be kept in tightly covered receptacles at all times. Many farmers remove the covers from the cans during cooling to allow the "animal heat" to pass off. This practice is unnecessary and gives opportunity for considerable contamination.

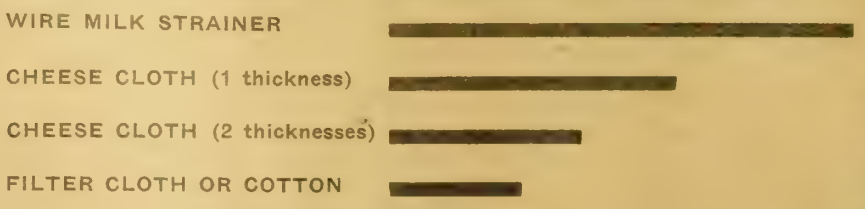
Pails and cans after they are washed and sterilized should be inverted fo drain and dry in a clean place, preferably the inside of the milk house. Strainer cloths may be hung in a similar place. If the se utensils are placed where dust can be blown into them they will colelct dirt which will subsequently appear as sediment in the milk.

Milk Strainers

Even in dairies where great care is used, a certain quantity of dirt gets into the milk, while on many dairy farms, where milk productio is not so highly specialized and other farm activities require the bulk of the available labor, less time is given to cleaning the cows and caring for the milk. Under these conditions it is not surprising to find considerable sediment in many samples of market milk. For this reason it is desirable to strain carefully al lmilk to remove, so far as possible, the sediment which it may contain.

Efficiency of Various Kinds

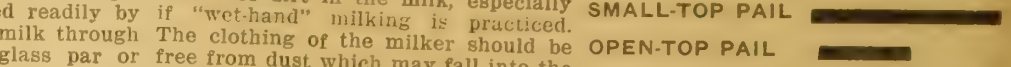
Milk strainers are made of various materials the most common being wire gauze, cheesecloth, cotton cloth, canton flannel, filter cloth, and absorbent cotton. Reports recently received show the kinds of strainers used on about 40,000 farms in all parts of the United States. The following table, arranged in the order of efficiency of material from poorest to best, summarizes the information given:



Quantity of sediment in milk after straining through various materials.

	Per cent. of farms
Wire	35
One thicknes of cheescloth	16
Cotton cloth or more than one thickness of cheescloth	27
Filter cloth	1
Absorbent cotton	21
	100

Keeping in mind the figures shown above, let us consider whether the present systems of straining generally used are as efficient as they should be. The following figure give sa graphic representation of the quantities of sediment in milk after straining through various materials. This illustration is the compilation of figures obtained in scoring several thousand milk samples in competitive contests, where information concerning methods used in production was available. It will be noticed that the milk strained through absorbent cotton or filler cloth contained the smallest quantity of sediment, while wire strainers were least effective in removing dirtt.



Relative quantities of sediment in milk drawn into open-top pails.

To demonstrate further relative efficiency of various straining materials, a series of tests was made in which a measured quantity of manure was placed in each of several bottles of milk. The milk was then strained, a different type of strainer being used for each bottle, after which it was allowed to stand for some time before the bottoms of the bottles were photographed to show the sediment that pased through the strainers. A wire strainer removed hairs, straws, and some of the coarser particles of manure, but did not take out a very appreciable part of the fine sediment. That a single thickness of cheesecloth permits a large quantity of sediment to remain in the milk was shown. Cheesecloth folded so that the milk has to pass through several thicknesses did not remove all the sediment.

Filter cloth was used in one trial. This filter cloth is made of cotton in much the same manner as a carpet; that is, it is smooth on one side while the other side has a "fuzzy" appearance due to the cotton fibres. This fuzzy side is exposed in the strainer so that the milk is poured directly on to it. From the illustration it is evident that this special cloth is quite effective in removing all but a small percentage of the sediment. But most effective of all is absorbent cotton placed between two thicknesses of cheesecolth. This method removes practicaly all the sediment. even in very dirty milk.

Filter cloth can be bought from the leading dairy supply houses, and is comparatively inexpensive. At each milking new squarese may be used or, if properly washed and sterilized, they may be used again until the long fibres become worn. One roll of filter cloth, if porperly used, should last from 3 to 6 months in taking care of the milk from a herd of 20 cows.

Absorbent cotton ca nbe purchased at any drug store. Before using it should be split into one-third or one-fourth of its original thickness, and fresh cotton must be used each time. A 1-pound package should last about a month for a herd of 20 cows.

Cleanliness Essential

Ayers, Cook and Clemmer determined that the greatest original source of bacteria during milk production was unsterilizeed utensils. In a series of 50 experiments they found that when the utensils were sterilized the average bacterial count was 31.040 per cubic centimeter, but that with unsterilized utensils the count averaged 666,-

520 per cubic centimeter. The strainer cloths must receive particular attention, for if they are not carefully washed and sterilized they will harbor millions of bacteria that will contaminate milk at subsequent milkings. It is not uncommon to find straining cloth yellow with old milk and having a strong, cheesy odor. Milk strained through such cloths can have neither a low bacterial count nor an appetizing flavor.

Strainer cloths containing 35,000,000 bacteria per square inch have been found in use on dairy farms. The are of the strainer cloth which is in contact with the milk may be 36 square inches or more e,which means that the milk passing through is liable to be inoculated with more than 1,000-000 bacteria. Furthermore, if the cloth is folded the chances for innoculation are increased in proportion to the number of thicknesses used.

Strainers and strainer cloths, as soon as used, should be thoroughly washed with warm water and washing powder. They should then be rinsed in clean water and sterilized by boiling for 5 minutes, or with steam for the same length of time. After sterilization, strainer cloths should be hung up to dry in a clean place where they will be protected from flies and dust. —Farmer's Bulletin 1019.

BACTERIA OF THE MANURE PILE

The action of various species of bacteria in manure is necessary to prepare it for plant assimilation. The changes that take place in manure from its fresh to its well-rooted condition are due almost altogether to the action of bacteria aided to some extent by molds.

When fresh manure is added directly to the soil, the plant food which it contains is not so readily available to growing plants as in the case with well-rotted manures. The bacteria contained in the fresh manure, aided by those present in the soil, have to break down the complex organic compounds of the manure into simpler forms, or as previously described, digest them before the growing crop can use them.

In the case of well-rotted manure, however, most of this digestive process has been completed by the bacteria, and the plant food present is largely in the right condition to be readily used by the growing crop. The rotting or ripening of the manure is mainly the digestive action of the bacteria contained in the manure.

The kinds of bacteria which bring about this action in the manure pile are the same as those which bring about the digestive processes in the soil. But the conditions which prevail in the manure pile are different from those which prevail in the soil, and as a result we are just as liable to have injurious action, resulting in loss, indeed bacterial action in the manure pile has to be controlled if we are to get best results.

Production of Ammonia and Nitrates

There are large numbers of bacteria in manure when it is produced. These numbers rapidly increase and are added to from the stable floor, the air and surroundings generally, and a rapil fermentation of the manure results. Everyone is familiar with the sharp, pungent, ammoniacal odor which is given off from an occupied horse stall if it has not been cleaned out for a day. This odor is due to the free ammonia which is given off from the manure, liquid and solid, throwing the rapid action of th eammonifying bacteria. When the ammonia is gven off into the atmosphere it is lost, and so this action should be prevented as far as possible.

If the fresh manure is thrown into a pile and the pile is kept well packed and moist the production of ammonia wil lnot be so rapid as to be readily thrown off into the atmosphere. Most of it, as it is produced, will be seized upon by nutritious bacteria and changed into nitrites and these nitrites will be changed by the nitric bacteria into nitric acid and finally result in nitrates. It is the presence of these nitrates in well-rotted manure giving quicker returns than fresh manure when added to the soil.

Everyone who has had anything to do with horse manure will be familiar with the condition known as fire fianging. This fire fianging means loss, as it destroys the plant food in the manure by a slow burning. The condition of fire fianging is due to rapid oxidation in fresh manure induced primarily by the digesting bacteria. In order for this to occur, there must be abundant oxygen within the fresh manure pile. This condition exists when the fresh manure is lossely packed and strawy. In such manure the bacteria will induce rapid oxidation which causes a rise in temperature. The temperature will continue to rise until eventually the bacteria which have started it are destroyed by the heat and much of the manure rendered worthless. Therefore to prevent fire fianging the manure pile should be kept wel packed and moist for the purpose of excluding excessive quantities of air.

There is not the danger from fire anging in cow manure or pig manure or pig manure that there is in horse manure, as these manures are naturally wet and compact. Mixture of these with horse manure, providing the whole is well packed, will thus reduce loss by firefianging.—Prof. D. H. Jones.

PROPER TIME TO OVERHAUL MACHINERY

The proper time for overhauling farming machines is during their period of inactivity and before the rush of spring work. If put off until needed, delay incident to getting repair parts promptly, press of other work, nd the havy recollection of the past season's difficulties may hinder the efficient prosecution of this work.

At the end of the season's work it is a plan well worth while to make out schedule of nedded repairs and adjustments for a particular machine and file it in a convenient place, so when opportunity arises, the work may be taken up and prosecuted expeditiously. The machine itself represents capital invested. It should be housed properly and not left in a fence corner or other out-of-the-way place for wooden parts to rot and metal parts to rust, which, even for short periods, may cause more deterioration than the season's use.

CONSTRUCTION OF A WOODEN STAVE SILO

(Taken from bulletin prepared by S. G. Carlyle, B.S.A.)

Stave silos with concrete foundation are more common than any other kind. If good material is used and they are well constructed they will last for a number of years.

Pine, hemlock or spruce can be used, provided the timber is sound and free from knots. The staves should be 2x6 inches and if tongued, grooved and bevelled will make a strong, tight structure. They are sometimes built without the lumber being tongued and grooved.

The staves should be of two lengths and the joints should be broken alternately. This will add strength to the silo. For instance, a silo twenty-five feet high could have the lumber in twelve and fifteen feet lengths.

The Foundation

In building a silo a good foundation is necessary. It should be laid one to two feet in depth, depending on the nature of the soil, and should be a foot above the general level of the ground. The footing should be one and a half or two feet wide at the bottom, and may be tapered to eight inches wide at the top. Some farmers prefer the silo to extend four or five feet below the surface of the ground, but this means a mnch more expensive foundation, greater difficulty in securing drainage and greater labor in getting the ensilage from the silo. Care should be taken that the top of the foundation on which the staves are to be placed is a perfect circle. When building the wall, five or six pieces of flat iron should be put n the cement at equal distances and should extend above the wall three or four inches to act as anchors.. In these projecting ends small holes should be drilled, and the irons bolted to the staves. This will prevent the wind from shifting the silo off the foundations.

Setting Up

In setting up the staves it will be found convenient to use lath or ordinary flour barrel staves, tacked both on the inside and the outside, to hold the staves in place until the iron hoops are put on. When the points are reacher where the doors are to be located, one stave should be sawed nearly through in the right place for the top and bottom of each door, cutting with the saw a bevel of about 45 degrees. When the wall is finished the saw may be inserted at these points, and the other staves sawed to secure a door of the desired width. The pieces sawed out of the staves should be used in making the doors. A circular plate made of 2x6 material should be nailed around the inside of the staves, level with the top, to carry the ends of the rafters and roof boards.

Band iron or round iron may be used for hoops, round iron being preferred on account of offering less friction in tightening or adjusting. Hoops of five-eighths inch round iron are recommended, and they should be in two lengths to facilitate tightening. The best way to secure the hoop is by means of patented cast-iron lugs, which can usually be secured through hardware merchants or implement dealers. The hoops should be long enough so that they can be lengthened when the silo is being filled, and should be threaded far enough back so that they can be tightened when the silo is empty.

Care should be taken to have the silo air-tight. Great care is necessary at the doors, and where the staves rest on the foundation wall the angle should be plastered inside with a light coat of cement. The staves should be set as close to the inner edge of the foundation wall as possible, so as not to leave a shoulder, as in the setting process an air space would be made which would cause the ensilage to spoil.

Roof and Floor

A cheap and suitable roof may be constructed by taking boards the desired length and cutting them diagonally, putting the base of the board on the plate and the point at the centre, having a turned post about eight or ten inches in diameter for the points of these boards to be nailed to or to form the hub as it were. An opening should be built in the roof similar to a pediment window for the filling of the silo. In parts of the Province where strong winds are prevalent it may be necessary to have rafters to give strength to the roof. These need not be close together. For a silo 15 feet in diameter, 8 rafters will be sufficient. The pitch should be the same as that of the barn.

A satisfactory floor for the silo in this Province is clay well tramped. Concrete may be used but it increases the cost. It is necessary to provide drainage for the silo. This is sometimes provided for by making a saucer-shaped floor, from the centre of which a tile drain is laid. Surplus moisture may also escape at the foundation where the staves rest on the concrete foundation. If there is a lot of moisture being carried away, the ensilage has probably been put in too green; if there is no moisture, it is too dry.

Location.

The location of the silo is important. It may be built close to the barn with only the feed chute of the silo between, or it may be built at a distance of ten or twelve feet so as to leave space for a feed room between the silo and the cattle barn. The silo should be fastened to the barn by guy wires.

Capacity of Different Sized Silos

The following table gives the capacity in tons of corn ensilage of silos of different dimensons, and also gives the number of cows that may be fed from the contents of each silo for a period of 180 days, and at the rate of forty pounds per day for each animal. From this table it will be easy to estimate the area required for the growing of ensilage crops, by putting the yield per acre at from six to ten tons for corn and four to six tons for green oats. A cubic foot of corn ensilage weighs about forty pounds, and of green oats about thirty-three pounds. To get capacity, silos should be built high rather than of large circumference, as the deeper the silo the greater the pressure. This pressure excludes the air.

Dimensions	Capacity in tons.	Cows it will keep for 180 days 40 lbs. per day
12x24	49	13
12x28	60	15
14x22	61	17
14x24	67	19
14x28	83	22
14x30	93	23
16x24	87	24
16x26	97	26
16x30	119	30

MARITIME DAIRY SCHOOL

At the annual meeting of the Dairymens' Association of Nova Scotia, the Prince Edward Island Dairymen's Association and the New Brunswick Dairymen United sanctioned by the annual meeting of the New Brunswick Farmers and Dairymen's Association, held during the winter months, resolutions were passed favouring the centreing of the educational work in Dairying to a greater extent by the building, equiping and operating of one central up-to-date Dairy School to be jointly owned and controlled by the three Provinces, and a committee was appointed at each convention to confer with the committees from the other Provinces to draft up the necessary steps to have the same organized and carried into effect.

This committee was called together and met in the offices of the New Brnswick Department of Agriculture at Moncton on the 1st day of May. The following were present from New Brunswick:—James Stultz, Steeves Settlement; H. F. Hughes, Petitcodiac; H. W. Coleman, Dairy Superintendent, Sussex and E. P. Bradt, Sec'y. for Agriculture, Fredericton. From Nova Scotia, J. D. McKenzie, Bridgewater; W. A. MacKay, Dairy Superintendent and M. Cumming, Sec'y. for Agriculture, Truro.

Regrets were expressed that the deleagtes from Prince Edward Island, Wesley Keefe, Little River; Rev. Dr. Gauthier, Palmer Road and F. T. Morrow, Dairy Inspector, Charlottetown—or a Representative of the Government, were not present.

The Committee. however, got organized and made the preliminary steps to get the idea of the School consummated. The resolutions and conventions naming the committees favoured the centreing of the School at Truro as it could then be affiliated with the Agricultural College and thus be the greatest benefit.

Mr. Coleman acted as Chairman and Mr. MacKay as Secretary. A plan was presented for the organization and operation of the School calling for a School of sufficient size to give a three months annual course in the different branches of Factory Dairying and a concurrent three months course in Farm Dairying which would treat with the production as well as the manufacturing end of the Dairy Work. The question was fully discussed, especially from the new principles that it would involve that of the oft discussed problem of Maritime Union, and Principal Cumming stated that the question of a Maritime Agricultural College had been a live issue just

(Continued on page 886)

HORTICULTURE.

SPRAYING TO KILL WILD MUSTARD

Wild mustard is a well known pest and a great source of loss and annoyance to the farmers of New Brunswick. There are hundreds of acres of fertile land in this province which are so badly infested that hand-picking is impossible. Where the ordinary culture methods fail in the control of this weed it can be killed any time before the flowering period in grain fields without lasting injury to grains or new seeding of grasses and clover by spraying with a water solution of Bluestone (Copper Sulphate.)

The method is effective where the ground is sown to oats, barley or wheat without harm to the crop, and it is possible to exterminate the pest without missing a season's crop. The increase in the yield of grain which results from the plant food made available by the mustard plants being killed will cover the cost of the chemical.

Spraying to kill weeds was first experimented with twenty years ago. Since then it has been demonstrated that sprays of common salt and iron sulphate can be used to kill weeds in pastures in which live-stock is running without offering any risks. Dandelon, Canada Thstle, Yarrow, Red Sorrel, Poison Ivy, Cockle Burr, Mustard species and many other weeds have been killed by such sprays as solutions of: Common Salt, Iron Sulphate, Copper Sulphate, Sodium arsenite and Calcium Chlorid.

The solutions used as sprays to kill weeds are applied by means of spray nozzles which deposit the solution as a fine mist upon the surface of the leaves of the plant. Special forms of spray machinery carrying a long rod or "boom" 18 feet in length with nozzles placed 18" apart have been developed as weed destroyers. But almost any good spray pump which will give good pressure and direct the spray nozzles to spray the whole area at the rear of the machine instead of in rows only will do satisfactory work.

The grain fields should be sprayed when the mustard plants are in the fourth leaf, or before the plants are in blossom. The bluestone solution is used at the strength of 10 lbs. in 40 gals. water. The spray blackens the tops of the blades of grain but no detrimental effects are apparent after two weeks.

Most of our weeds are broad-leaved. Grasses and grains are narrow leaved. Upon the reactions of these two classes of plants to the chemical sprays we depend for results—for injury to the weeds without harm to the crop. One thorough spray will kill a large share of the weeds and if continued each time the ground is re plowed the mustard can be eradicated.

The Provincial Department of Agriculture will demonstrate the control of wild mustard species growing in grain fields in different counties on infested farms the owners of which have a spray machine to offer for the work. Powdered bluestone and a special spraying boom have been procured for the purpose and the experiments will be conducted by the Soils & Crops Division.

If you are interested in the matter of Weed-control by chemical spraying write the Division.

O. C. HICKS,

SMUT SPORES IN SEED DRILL

What is the use of treating grain for smut and then running it through a drill which may have millions of smut spores lining the box and other inside surfaces?

The drill should first be cleaned out with a small broom or brush. It is then best to plug up the drill tubes, sprinkle the inside thoroughly with formaldehyde solution, close up the box and allow it to stand so that the fumes may come in contact with spores that may be adhering to the inside of the drill. Every precaution should be taken that the drill is entirely free of all the smut spores.

WHAT SOIL BACTERIA NEED

Soil bacteria are friends and not foes of the farmer. They are not only useful, but are absolutely essential, and the more there are of them in the soil and the more actively they are working, the better will be the crop returns. We are then faced with the problem of how to encourage their development and activities. To solve this problem we must know the conditions favorable to their development.

First, the beneficial soil bacteria need oxygen, as many of the changes which they bring about are oxidation processes. There is an unlimited supply of oxygen in the air and if the soil is well drained there will be plenty present in between the soil particles to a depth of two feet for the use of the bacteria. If, however, the soil is caked or waterlogged, the necessarly oxygen is not available for the bacteria, therefore, their development and activity is checked and their elaboration of plant food is prevented. To supply the soil bacteria with their necessary oxygen we must therefore keep the soil wel drained and the surface loosened up and pulverized by cultivation.

The second requirement of the soil bacteria is moisture. This does not mean saturation or free water such as would induce a water-logged condition in the soil. So long as the soil is just moist there will be plenty of moisture for the bacteria. Two-thirds saturation is as much moisture as should be present. This moisture should exist as a thin film of water around the individual soil particles, and it is in this film of water that the bacteria live and do their work. There should, however, be no free water between the soil particles as this would keep out the oxygen. Hence, to have right moisture conditions for the bacteria in the soil it should be well drained to carry off all exces moisture in wet periods and in dry periods it should be shaded or cultivated where practicable so as to keep a soil mulch on the surface to prevent excessive operation.

A third requisite for the soil bacteria is a neutral or slightly alkaline reaction in the soil. That means that there should be no free acid in the soil, in other words, the soil should not be "sour." The beneficial soil bacteria will not develop where acid is present. The work of some of the soil bacteria includes the production of acid and if this acid is allowed to accumulate it interferes with further bacterial activities. This aciid as it is produced must be neutralized and if sufficient lime or potash is present in the soil, the acid is neutralized as fast as it is produced. If the acid in question is nitric acid and it is neutralized by potash we get as a result potassium nitrate, which is one of the most valuable nitrate fertilizers, and readily assimilated by the growing plants. If lime is not present in the soil in sufficient quantities to neutralize the acid, then it should be added.

A fourth requisite of the soil bacteria is organic food substances. These are supplied by the sod, stubble, manures, straw, etc., that are plowed in, and these should be present in fair quantities to feed the bacteria. It is this process of the bacteria feeding that breaks them down or digests them, making them suitable for the growing crop t ouse them. This action of the bacteria in digesting the crude organic material added to the soil results in the production of humus, which it is so essential should be present in cultivated soils. —Prof. D. H. Jones.

It is more important that the ground be well prepared and in good condition than that the crop be planted early.

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DICKINSON'S

PINE TREE TIMOTHY

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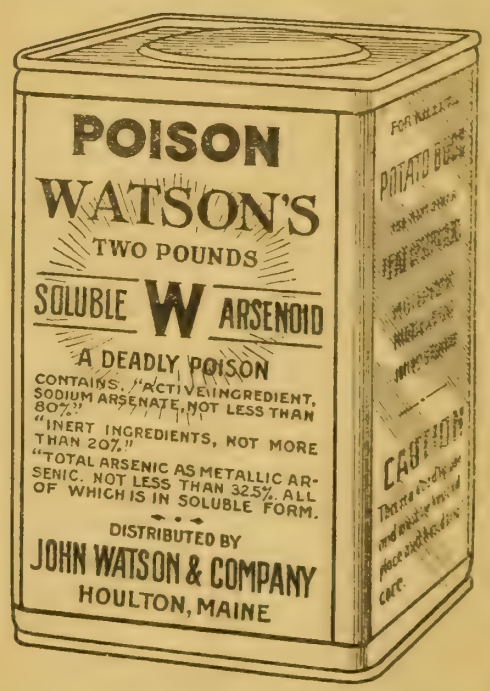
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WATSON'S
TWO POUNDS
SOLUBLE W ARSENOID
A DEADLY POISON
CONTAINS. "ACTIVE" INGREDIENT, SODIUM ARSENATE, NOT LESS THAN 80%"
"INERT INGREDIENTS, NOT MORE THAN 20%"
"TOTAL ARSENIC AS METALLIC ARSENIC. NOT LESS THAN 32.5%. ALL OF WHICH IS IN SOLUBLE FORM.
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On July 22, 1918, the Canadian Customs at Ottawa issued an order removing the duty on WATSON'S SOLUBLE ARSENOID except the war tax, and this order applies only to WATSON'S SOLUBLE ARSENOID, manufactured by John Watson and Company, Houlton, Maine. This endorsement speaks for itself.

WATSON'S SOLUBLE ARSENOID has been on the market for a number of years and is used almost exclusively in Aroostook County. If your dealer cannot supply you, write us direct, and give us the name of your dealer.

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Do you know that one Farmer in New Brunswick sold nearly $5000 worth of berries from five Acres? That another Farmer sold over $8000 worth from a little over ten acres? These results are not exceptional, any good farmer can do as well who will give his attention to the most profitable crop that can be grown in the Maritime Provinces. We can supply Plants for the professional Strawberry Grower, for the man who grows an acre or two as a side line to general farming or for the family garden. Good strong well rooted plants are more than half the battle in successful strawberry culture. Start right. Don't take plants from an old bed or from the side of the rows as a gift. All Farmers know that poor seed means a poor crop. Dunlaps, Warfields and Beder Woods, $4.00 a thousand; Sample, Glen Mary and Dr. Burrell, five dollars a thousand.

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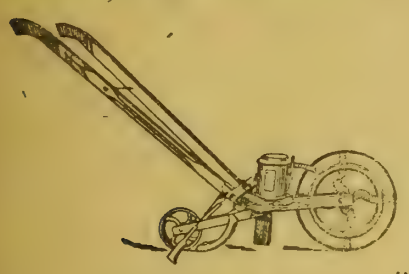

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We Manufacture Strawberry Boxes and Crates for same, 6 qt Baskets, Apple Boxes, Box Shooks, Apple Graders, Wheelbarrows. Now is the time to lay in a supply of Fruit Packages for the coming season. We have a good stock on hand, order early and ensure prompt shipment. Price on application to

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THE NEW BRUNSWICK FRUIT GROWERS' ASSOCIATION

Fredericton, N B.
April 5th, 1919.

Spraying Materials for 1919

Dear Sir: —

If your Society decides to secure mtaerials from us, it can do so by becoming a member of this Association for the present year by payment of membership fee of $1.00. This will entitle your Society to order all the materials it may need. We would advise you to send in a club order for the total requirements of your members, so that this total order may be shipped to one man designated by the Society, the members to secure their individual orders from him. This would save considerable in freight charges and secure more prompt delivery. If the Society does not order goods for the Society, we will supply individual members for a purchase fee of twenty-five cents.

Prices f.o.b. Fredericton

Bluestone (in crystals) per cask of 450 to 500 lbs., 11½c; fifty lbs. or more 12c per lb.; less than 50 lbs., 13 cents; less than 25 lbs., 14 cents.

Ground Bluestone (will go into solution in two minutes with good agitation)—100 lbs. or more, 12 cents; twenty-five to fifty pounds, 13 cents; less than 25 lbs. 14 cents.

Dry Powdered Arsenate of Lead.—25 lbs. or more, 45 cents per lb.; less than 25 lbs., 46 cents.

Arsenate of Lime.—200 lbs., 24 cents; 50 to 100 lbs. 25c.; 25 to 50 lbs. 26 cents; less than 25 lbs., 28 cents.

Soluble Sulphur.—To take the place of liquid lime sulphur, 11 to 13 cents per lb., according to quantity.

NOTE.—Lilquid lime sulphur in full 40 gallon barrels would be delivered at Fredericton for about $12.00 per barrel or about 30 cents per gallon; therefore as a dormant spray using 1 gallon to 8 of water would cost over $1.50 for 40 galolns of dormant spray, or a little more than soluble sulphur at 12½ lbs. to 40 gallons of water at 11 cents per lb. Forty gallons liquid lime sulphur summer strength costs about 25 cents for 4/5 gallon lime sulphur—as compared to 12 cents for 1 lb. of soluble sulphur to 40 gallons of water.

In estimating the quantities of materials needed we figure on from 1½ to 2 galons of spray solution for each application for one well-grown 15 year old tree; and for potatoes, 80 gallons for each aplication to one acre. If you are not sure of the amount of materials needed we will be able to judge for you if you will state about how many trees you have, what age they are and their distance apart; also acreage of potatoes to be palnted.

We shall be glad to send copies of the enclosed spray calendars to any of your members on receipt of their names and addresses.

Terms of payment are cash on delivery of the goods. Order early and thus be sure of delivery of reliable materials in good time and at a considerable saving compared to ordinary sources of supply.

Yours very truly,
A. G. TURNEY,
Secretary-Treasurer.

TO GET A GOOD CROP OF RHUBARB

Rhubarb requires a loose, rich soil to do best. While the average garden is made up of soil answering this description, it is often the custom to put the rhubarb in some odd corner where it will be out of the way and where it it allowed to shift for itself.

That ,no doubt, is one of the reasons why many people do not have better success in the rhubarb patch. If the ground becomes hard and is not cultivated deep the rhubarb, unless it has already gotten firmly established, will not amount to much.

One year when we plowed the garden we had a fair exambple of what cultivation, and deep cultivation at that ,means to rhubarb. For two or three years we had hardly gotten season. The stalks grew waist high enough stalks off our five clumps to before the end of the summer and supmake half a dozen pies through the plied ourselves and neighbors with all season. We had used the hoe, as that we could use.

many people do, thinking that it was The reason why the rhubarb had sufficient cultivation. not amounted to anything before was

But last spring, in plowing the gar- that we had not given it the cultivaden, we forgot about the rhubarb and tion that it demanded. We have since plowed through the bed where it was that time given the roots deep cultiand did not notice the mistake until vation, using a spade to loosen up the we turned up one clump of roots. ground around the root clumps for There was nothing to do then, so we some distance and then during the forgot all about the matter. summer we hoe deep around the grow-

The plow, however, had not struck ing stalks. the other clumps and in a little while Deep cultivation with ordinary barnthey commenced to grow as they yard manure will get results and keep never had before. That summer we you in rhubarb throughout the sea- had more rhubarb from our plants son. The commercial growers who than we had in all the other years put force rhubarb in caves and under roof, together. It did not stop growing all use practically all manure with a thin

Haying Waits For No Man

TO GUARD against possible loss be prepared to mow, rake, ted and load your crop from hayfield or meadow at the proper moment.

For years you have been cheerfully complying with Government request to save materials by repairing your old machines rather than making replacements. Now that the need for this has passed, would it not be real economy to buy new machines and be assured of uninterrupted service at a time when a break-down would mean serious embarrassment and loss.

Deering and McCormick Mowers, Rakes and Tedders and International Side Delivery Rakes and Loaders

are doing satisfactory work on thousands of farms. The combined side-delivery rake and tedder is a winner. International loaders lift hay 10 feet without injury to blossoms and leaves. Sweep rakes, stackers and combined sweep rakes and stackers clean up big fields in a hurry, making **haying** time **paying** time.

And hand in hand with every haying tool goes service. The local agent is always in close touch with one of our 16 branch houses, whose resources and facilities are at your service.

International Harvester Company of Canada, Limited

BRANCH HOUSES

WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

To All Onion Growers

We say get a pound each of ordinary "Red Wethersfield" and McDONALD'S SPECIAL STRAIN. Grow them apart and at harvest-time, see the proof of pedigreed seeds.

The big crop of better onions you get from McDonald's Red Wethersfield "Special Strain" will demonstrate the value of expert breeding and selection of seeds, and show you that Quality is more important than price.

McDonalds' "Special Strain"

10c. pkt., 35c. oz., $1 ¼lb., $3.75 lb. Postpaid.

Write for our new Seed Book. — Mailed free.

KENNETH McDONALD & SONS, LIMITED
5 Market Square, Ottawa

6

Top Dress with Nitrate of Soda

It does not Sour the Soil

Nitrate of Soda leaves no mineral acid residue behind to injure your soil. It makes bigger crops—and keeps the land sweet.

Nitrate of Soda

Top dress 100 lbs. per acre for seeded crops; 200 lbs. cultivated in thoroughly for cultivated crops. These light dressings, evenly spread over an acre, will work for your profit.

WM. S. MYERS
Chilean Nitrate Committee
25 Madison Ave. New York

LT.-COL. W. J. OSBORNE

after four years of war service in England, Belgium, France and Canada, has again taken over the management of the

Fredericton Business College

FREDERICTON, N. B.

The college will be kept open all through the summer.

FALL TERM BEGINS SEPTEMBER 2nd

Write for full particulars.

Think for a Moment

of the advantage it would be to you right now to have a business training, then write us. Our School is accredited by the National Association of Accredited Schools of Canada and the United States.

SUCCESS BUSINESS COLLEGE, Ltd.
The School for Better Results
Moncton, N. B. Truro, N. S.

No Summer Vacation

this year, as some of our students cannot afford to lose time.

Our classes have been considerably crowded, but, vacancies now occuring give a chance for new students who can enter at any time.

Tuition Rates, mailed to any address.

S. Kerr, Principal.

Advertise in the Farmer

application of garden soil, so you can see that it is practically impossible to provide too much fertilizer.

It is best, however, not to be too liberal with it as it induces a rank growth and unless the stalks can be used when young and tender, there is no cause for unnecessarily forcing the roots. It may have a disastrous effect upon their vitality and when not necessary it should not be practiced.

The same amount of fertilizer each year as is used on the rest of the garden wil lbe sufficient for all ordinary needs, but do not cut down on the cultivation. There cannot be too much of that and it must be deep.

SPRAYING POTATOES, 1919

(By G. E. Sanders, Dominion Entomo-Horticulturist, Fredericton, N. B.)

logical Laboratory, Annapolis Royal, N. S., and A. G. Turney, Provincial

Bordeaux made according to the 4-4-40 formula is, of course, the standard fungicide for the potato. Many modifications of this formula are used some calling for more lime and others for more Bluestone. Before using Bordeaux on foilage, particularly where an excess of bluestone is used, one should always test the mixture. The most convenient safe test is with litmus paper which can be obtained from any druggist for a trifling cost. Add lime until this mixture turns the paper blue; it is then safe.

The time to begin spraying varies to a certain extent with locality and season. In general one should apply the first spray in ..ew Brunswick when plants are from 6 to 8 inches high, repeating the application every two weeks for five or six applications.

In spraying Bordeaux on potato plants one should spray so as to wet the under as well as the upper sides of the leaves, covering every portion of the plant surface.

Poisons to Use with Bordeaux

By combining the poison with Bordeaux a less costly type of poison can be used with safety and the grower can control the fungus diseases as well as kill the insects with the same application. Practically all poisons can be used with Bordeaux with a high degree of safety. One should always remember that a small or young "potato bug" is more easily killed than a large one. Therefore, either spray while the "bug" is small or use a larger quantity of arsenic.

In general potato spraying about six tenths of one pound of arsenic oxide is used. To get this quantity of poison approximately the following quantities of the various poisons are required to 40 gallons of Bordeaux.

	Amt. required in pounds	Cost according to 1919 prices
Dry arsenate of lead (standard(	2	.80- .90
Paris Green	1.2	.70- .80
Arsenate of lime	1.5	.36- .40
Arsentae of zinc	1.25	.50-
Arsenate of soda (Arsenoid)	1.2	.36- .40
Paste arsenate of lead (standard)	4	$ .80-$1.00

NOTE.—Costs vary according to the quantity in which the materials are bought.

On account of the element sodium in arsenate of soda, (arsenoid) the arsenic present is more efficient when used with Bordeaux than most other poisons. Arsenic in the form of arsenate of lead is least attractive, although it is the most adhesive of all common poisons. Arsenate of soda should not be used except with Bordeaux.

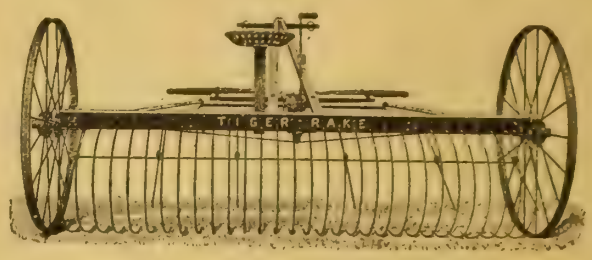
It can be seen from the above that arsenate of lime and arsenate of soda are the cheapest poisons for the New Brunswick potato grower during the season of 1919. Arsenate of lime when used at the rate of 1½ lbs. to 40 galoins of Bordeaux or water is perfectly safe and a satisfactory poison.

Frost & Wood Mower

It's a sure crop-getter because it has 80 years' Canadian experience behind it

The Frost & Wood Mower harvests any Hay Crop—tangled or straight, light or heavy. Doesn't need a nice standing crop to show up well, like other Mowers. It is simple and easily managed, yet it's a marvel of efficiency. Very light in draft because of the high-grade steel roller bearings and other highest grade materials we use.

The knives will work even when cutter bar is raised to clear obstructions, saving time and crop. Our "internal drive gear" alone is enough to sell you this famous Mower. High Carbon Steel Cutter Bar can be set at any angle. Anyone who can drive can "run" it.



THE FROST & WOOD RAKE

Built on a strong, heavy, angle-steeel frame. Parts are riveted, not bolted, so they cannot shake off. Teeth are special high grade spring steel, every one hardened and tested. Years of good, solid, repair-free service go with this popular Frost & Wood rake.

Free folder on Frost & Wood Hay Making Machinery gladly sent, or get a copy from our nearest dealer.

The Frost & Wood Co., Limited

Truro, N. S. ST. JOHN, N. B. Charlottetown, P.E.I.

FARMERS

MAKE your banker your financial adviser. Let him help you to shape your affairs so that he will be warranted in giving you ample credit to operate your farm efficiently. Our aim is to assist you in every way possible.

THE CANADIAN BANK OF COMMERCE

2A

Growers are strongly urged to apply the poisons with Bordeaux as at the time when the poison is reuiqred the plants sohuld also receive a protective covering of fungicide for control of the blight or rust. By combining the two sprays, the conrtol of the potato beetle and protection against blight or rust is secured with the same expenditure of labor as if the poison was aplied alone with water.

Warning

REMEMBER.—Arsenite of lime is a different substance from arsenate of lime—and not as safe.

BROOD DISEASES AMONG THE BEES

There are three brood diseases that are of importance to the beekeeper, and two of them are responsible for very heavy losses every year.

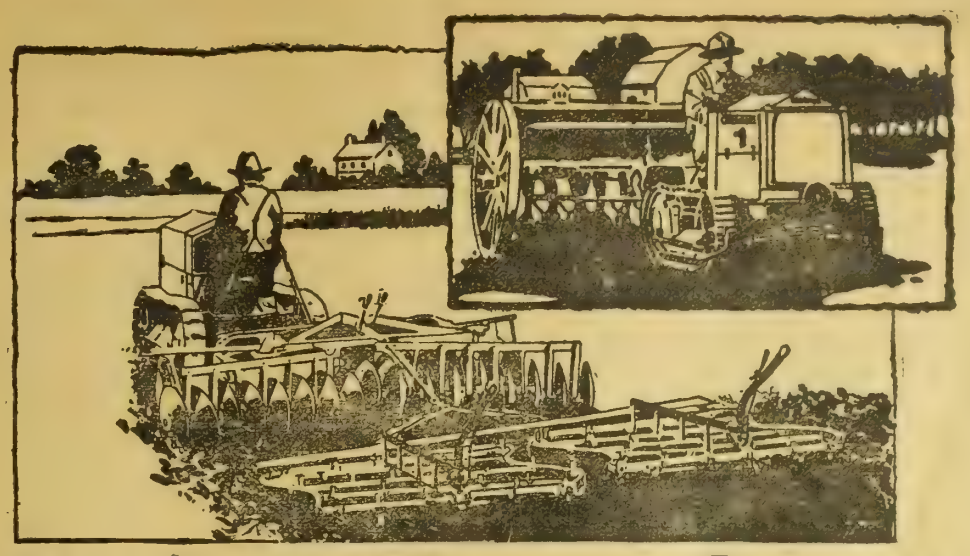
Sacbrood is an infectious disease but transient in character. It may be serious enough at times to weaken a colony considerably, but seldom destroys it completely. It appears in the apiary mostly during the spring and early part of the summer, but cases may be found at any time during the spring and early part of the summer, but cases may be found at any time during the season. The symptoms are irregular brood and punctured cappings; the affected larvae are usually dark gray to almost black in color, and are found lying stretched out on the lower wall of the cell with the head turned up pointing to the upper wall of the cell at the entrance. The body wall of the diseased larvae becomes toughened while the contents of the body are somewhat watery and granular; the whole can be lifted from the cell intact. There is no definite treatment for this disease, but the beekeeper who keeps his colonies at the maximum strength and uses only young vigorous queens need not fear it.

European Foul-Brood

European foul-brood is a highly infectious disease and spreads very rapidly through an apiary, causing very losses especially among black bees and hybirds. The larva usually die before being capped over, while still curled in the cell. The color of the affected arvae changes from a glistening white to a light yellowish or greyish tint, later turning darker and the larva settles to the base of the cell in a shapless mass, finally drying to a dark, detachable scale, which is removed by the bees. This disease may appear at any time during the season but is mostly prevalent during the spring and early summer. European-foul-brood is essentially a "weak colony" disease and the beekeeper who uses only young vigorous Italian queens and keeps his colonies strong need not fear it.

Americana Foul-brood

American foul-brood does not spread through an apiary as quickly as does European foul-brood, but it is harder to combat. The larvae usually die after being capped over and the first sign the beekeeper usually has of its presence is a number of dark, sunken cappings among the healthy brood. Sometimes these cappings may be perforated. If the capping is removed, a dark chocolate-colored mass will be found lying on the lower side of the cell. If a wooden toothpick or something similar is inserted into the diseased larvae and given one or two turns and then withdrawn, the mass will be found to "rope out" to one or more inches before breaking, This is the chief characteristic of this disease. The only treatment advocated for American foul-brood is to shake the bees on to starters in a clean hive and three days later to remove the starters and give full sheets of foundation. The old hives should be disinfected, the combs rendered to wax for foundation and the frames destroyed. The honey is safe for human consumption but must not be placed where bees have access to it. This treatment should be given during a honey flow, if not the bees will need daily feeding.



Cletrac Tank Type Tractor Owners
Do Twice the work with half the Help

A Tractor is farm power.

Buy a tractor which will work the most days in the year.

If your tractor is to pay you it should supplant several horses and men on your farm. It should enable one man to do twice as much work. It should enable you to put more land under cultivation because of faster work at the right time.

What you need is a tractor which will disc, harrow, seed, summer fallow, harvest, thresh, cut ensilage, haul loads, run machinery. A real worker.

The Cletrac tank-type tractor offers you this service 100%.

We say 100% because the Cletrac will disc, harrow and seed over plowed ground *without packing the soil*. Rides *on top* of the soil. Won't even crack an egg buried one inch deep.

So it works faster—works better—works on less fuel.

And the fuel is kerosene (coal oil). Scientific design makes the Cletrac operate *efficiently* on kerosene.

Let the Cletrac tank-type Tractor dealer show you how a Cletrac pays for itself. Write us for booklet "Our Owners Say," telling the Cletrac story in the users' words.

The Cleveland Tractor Co. of Canada
Windsor, Ontario Limited

St. Marys, Ont.

Dear Sir,—I have these tractors working in plowing and preparing land for flax and other crops.

They are as much superior to the high-wheeled tractor, which I used before, as a twenty-horse power steam engine is over the old horse power.

We have plowed with three 12-inch bottoms eight inches deep with the ground frozen to a depth of three inches, at the rate of one acre an hour.

We have found it delivered on the belt over thirty horse power and is actually quicker to set and easier to lighten on the belt than any other rig we know of.

I have sold four teams of horses, which we used for this last year for about one quarter the acreage I will be running this Spring with two tractors.

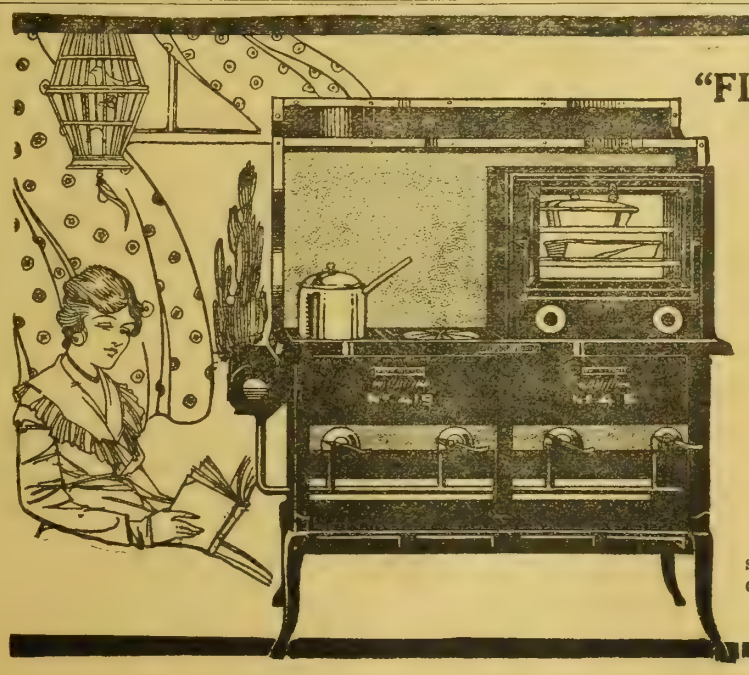
Yours very truly,
(Signed) A. L. McCredie

Cletrac
TANK-TYPE TRACTOR

STORING PUMPKINS

Pumpkins can be kept in storage nearly all winter if a few rules are observed. The garden specialists of Purdue advise selecting well-ripened mature, disease-free pumpkins before they are injured by freezing, being careful to handle them so as not to bruise or injure them, which causes early rotting. Place them in a warm dry room or basement and arrange for good air circulatoin. A few feet around the chimney in the attic or a hanging shelf in the furnace room will answer the purpose. The same direction wil lapply to squashes that are to be stored.

It is not often that a farmer would have good sound apple tree logs of any size, but sometimes it is thought necessary to cut down an old orchard in which there is some good timber. The usual method of disposing of this wood is to burn it, but some income might be secured from it by selling it to some of the saw manufacturers. Apple wood makes good saw handles.



"FLORENCE AUTOMATIC" OIL COOK STOVES

HAVE a cool kitchen this summer—save yourself the labor of attending to a coal or wood fire—use the cheapest of fuels—kerosene.

And don't bother with wicks or slow heating burners.

Let us show you this fine cook stove in actual operation.

Full information about the Florence oil stoves will be sent free to any address upon request to our nearest branch office.

McClary's

Windsor Cheese Salt
Made in Canada
THE CANADIAN SALT CO. LIMITED.
279

DAIRYING.

SOME PECULIARITIES OF COWS THAT RULE THEIR MILK AND FAT PRODUCTION

[The following article, written by Dr. M. H. Reynolds, gives a lucid description of how the quantity and quality of milk depends upon the hereditary peculiarities of the cow, upon the feed she gets, her ability to digest and assimilate it, and the size of the blood vessels and how they are controlled by the nervous system.]

It may be helpful to a correct understanding of the milk glands to know that they are closely related to skin structures and that the milk producing glands are similar in part to the skin sweat glands, and in part to the skin oil prodocing glands. The milk secreting structure of the cow's udder is to be regarded as a process of evolution from simple surface skin.

It may not be quite pleasant to know that many things are excreted through the udder. Science knows no likes or dislikes, and has no quavers of feeling. Everyone knows that some medicines given to a cow or to a human mother are readily excreted in the milkJin fact, we occasionally give medicines to the nursing calf or baby in this way.

The cow's udder consists of gland tissues proper: i. e., the milk secreting tissues and a connective framework, together with blood vessels, lymph vessels, and nerves. The cow's undder is divided into lateral halves, the partition extending lengthwise of the body. Each lateral half of the udder is encased in a tough, fibrous sack—a sort of capsule, and each side half has two glands; the front and back quarters are not separated by prtitions like the two side halves.

Structure of Udder

The internal structure of each quarter shows that it is divided into distinct masses of gland tissue, and these distinct masses, which we call lobes, are again divided into smaller lobes or lobules. There is one outlet milk duct, or tube, for each lobule. It is through these small milk ducts that the milk from each quarter passes on its way to the milk cistern at the base of the teat.

The mammary glands are undeveloped and rudimentary until maturity and become active, as a rule, in the manufacture of milk towards the close of the first progeny.

From the strong capsule, the fibrous sack, which surrounds each side half of udder, layers of this same tissue branch off and extend into and all through each quarter constituting the coarser framework of that quarter. The relative amount of this connective tissue, i. e., framework tissue, varies greatly in different udders, and varies at different periods of life in the same udder. The farmer who understands this general structure will easily understand why some cows with large udders produce little milk, and other cows with small udders produce much milk. The framework tissue produces no milk. That will be borught out more clearly later.

The Blood Vessels

Most of you are probably familiar with the fact that we have within every animal body two sets of vessels or tubes, through which fluids circulate. We have the blood vessels and the lymph vessels. The blood vessels act as general distrubitors, or wholesalers, of food material as well as wholesale collectors of refuse matters. The lymph vessels serve as retailers and small collectors and are imemdiately concerned in delivery to the manufacturing cells of food materials, i. e., raw materials for manufacturing processes. The lymph vessels also collect the waste—the refuse which is passed on to the blood for excretion.

We have two sets of blood vessels, or tubes, in the cow's udder, as in practically all other structures of the body, i. e., arteries through which flows into the udder pure bood; and we have the veins in which flows back to heart and lungs, the impure blood. There are two sets of lymph vessels; first, the superficial lypmh vessels distributed to the capsule or sheath around the udder and to the skin; and another set of lymph vessels which, all through the udder, supply the little bottle shaped groups of milk producing cells which we will name the alevoli.

The blood vessels split up into finer and finer branches until they are finally microscopic in size. We see these invisible blood vessels, capillaries, the word referring to their hair-like shape. These tiny blood vessels, the capillaries, form networks around the little milk tubes and bottle-shaped groups of milk secreting cells.

The lypmph vessels form tangled meshes or minute lymph vessels, or tubes, in and between the gland lobules and small masses of gland cells. From t hese lymph vessels, smaller, very minute lymph vessels extend to lymph spaces surrounding the little groups of milk cells. These groups of milk cells are arranged in hollow masses not unlike a round water bottle with a long neck. These bottle shaped masses of milk cells will be hereafter referred to as alevoli, meaning small cavities.

The nerve fibres are distributed in part directly to the blood vessels controlling the amount of blood passing

The Farmer's Financial Friend

We have large resources and the vast experience of 87 years to draw upon to serve you; but we have something even more important — we have the earnest desire to do so.

We cash your produce and personal cheques, collect your drafts—all by mail if required—and gladly give you impartial advice on any financial or business matter.

Paid-up Capital $ 6,500,000
Reserve Fund - 12,000,000
Resources - - 150,000,000

THE BANK OF NOVA SCOTIA

We invite your account. Special facilities for banking by mail Thirty-three branches in New Brunswick. Head Office, Halifax, N.S.

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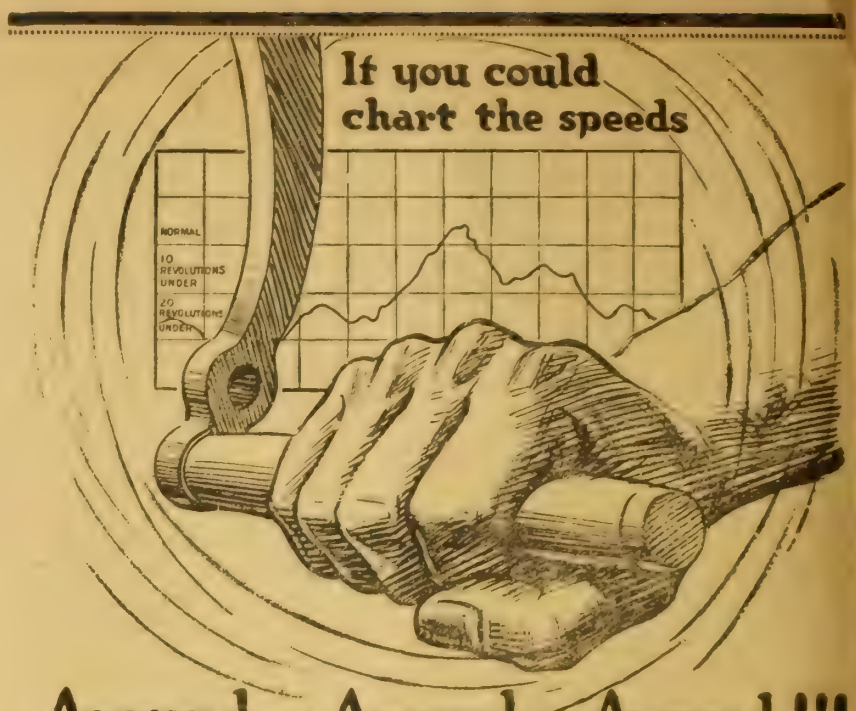


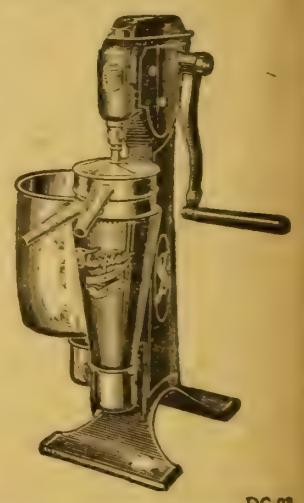
Around and Around and Around !!!
No human hand can keep up a fixed normal speed

If every owner of a fixed feed separator—especially those who *think* they are skimming clean—could see a chart of the great *variation* in speed during one week's separation, they would be amazed. The chart would show that practically all the time the separator was being turned *below* speed and wasting butterfat. Actual tests prove that 95% of all separators are turned below speed most of the time and all separators are turned below speed some of the time. No matter how careful you are, it is humanly *impossible* to turn at a fixed speed, day in and day out. Speedometers, bells and other contraptions only show the wastefulness of fixed feed separators.

SHARPLES SUCTION-FEED CREAM SEPARATOR

SKIMS CLEAN AT ANY SPEED

Before you buy a separator, ask if it will *skim clean at any speed*—as otherwise you are going to lose money. Ask if it is a North American invention, North American owned. Meanwhile write for Sharples catalog and Sharples Book of Old Songs to nearest office, addressing Dept. 79



"There are no substitutes for dairy foods"

THE SHARPLES SEPARATOR CO.
TORONTO, ONT. REGINA, SASK.

THE LOUNSBURY CO., NEWCASTLE, N. B.
J. CLARK & SON, FREDERICTON, N. B.
Distributors through all their Branches.

DC-93

All Cows Are Alike to the EMPIRE

HARD milkers or easy milkers—nervous or calm cows—large or small teats—even or uneven udders—they are all alike to the Empire. It milks them all. And Empire teat cups stay on without surcingles or harness.

EMPIRE MILKING MACHINES

are now equipped with our new Super-Simple Pistonless Pulsator. No wearing pistons to leak vacuum. It operates teat cups with absolute regularity. Cows like it. It soothes and quiets them. Results in greater milk flow and also increases period of lactation.

Write for 1919 Catalog No. 26 and name of nearest dealer who will demonstrate the Empire for you without obligation.

The Empire Cream Separator Co. of Canada, Limited
146 Craig Street West
MONTREAL
Toronto Winnipeg

J. CLARK & SON, LIMITED and THE LOUNSBURY COMPANY, LIMITED. Distributors for the Province of New Brunswick.

EAGLE MOTOR STYLE

Write to-day for our big FREE CATALOGUE showing our full lines of Bicycles for Men and Women, Boys and Girls.

MOTOR CYCLES
MOTOR ATTACHMENTS

Tires, Coaster Brakes, Wheels, Inner Tubes, Lamps, Bells, Cyclometers, Saddles, Equipment and Parts of Bicycles. You can buy your supplies from us at wholesale prices.

T. W. BOYD & SON,
27 Notre Dame Street West, Montreal.

Butter Parchment at Farmer Office

through the udder, thus controlling the amount of raw material brought to the udder and therefore the quantity of finished product.

Before studying the process of manufacture, let us see what there is in milk to be accounted for in the factory.

Composition of Milk

We may say that milk consists of milk globules, i. e., fat; and milk plasma, that is, water, casein, albumen, milk sugar, and ash. There are certain proteid or nitrogenous bodies in milk. We know these as milk albumen and casein from which we make cheese. The proteid or nitrogenous materials make up about 4 parts in 100. Cow's milk usually has about four and one-half parts per hundred of milk sugar, and from three to four parts per hundred of butterfat, varying greatly according to individuality of the cow. Milk contains also a little ess than one part per hundred of ash or mineral matter; i. e., calcium, soda, potash, etc, and about 87 per cent. water. Colostrum, the first milk drawn after delivery, differs from normal milk in that it contains much nitrogenous matter, especially albumen, which coagulates upon boiling, and little fat, sugar, or mineral matter.

Milk Fat

Milk fat consists of several different kinds of fat combined and put together in little round masses called milk globules. These globules make up a true emulsion with a film of the liquid portion of the milk between globules. It is interesting to note that ash in the bodies of very young animals corresponds very closely with the ash in the mother's milk, but it is very significant to note also that the ash in the mother's milk differs from the ash of the mother's bood, proving manufacturing or at least selective processes in the cow's udder, even for the ash.

Now I am going to try to make plain and simple the process of milk formation.

Process of Manufacture

Where do these come from—this fat and sugar and all this casein and the ash. Well, it is fully demonstrated that they do not exist in the blood. All the blood carries to the udder are the products of digestion, i. e., nutrition materials from digested food, so that back of this manufacturing process in the udder we must have the digestive process in the stomach and intestines.

It would be interesting for any one who is not familiar with this subject and who wishes to follow it farther, to look up the history of the several food groups, the carbohydrates, the proteids, and the fate, from the time they enter the digestive organs until the digestive products are distributed by the blood, and then see what use the body makes of each one of them—especially what use the udder makes of them.

Before pregnancy the milk glands are composed largely of connective tissues; i. e., the framework tissue—and a very considerable amount of fat. The milk secreting cells are arranged in hollow groups called alveoli. Each alevoulus, as previously described, has something of the shape of a long necked water bottle. These are together in clusters with the necks opening into a common outlet tube. The clusters of alveoli are surrounded by masses of fat and framework tissue.

Before pregnancy these little alveoli and their outlet tubes are blocked with masses of cells. As the period of pregnancy develops these cells divide. Some continue attached to the basement membrane which surrounds each alveolus. Others remain free in the cavities of the alveoli, also in their necks and in their outlet tubes. These loose cells undergo a fatty degeneration and pass out in the first milk as colostrum, with which you are all familiar. Colostrum may appear

(Continued on page 888)

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LIVE STOCK.

BLACK LEG CATTLE DISEASE THAT IS CAUSING GREAT LOSS AMONGST FARM LIVE STOCK

It is evident from the many queries regarding cases of animals that have died from blackleg, that the disease is very prevalent in Canada. The following article contains valuable information on causes and prevention of the risease, given by Dr. McGilvary, head of the Veterinary College, Ontario, and at this season the advice proves opportune. The writer says:

Blackleg is an acute, infectious disease of cattle which is manifested in its course by lameness and the presence of hot painful swellings, especially in the region of the hind quarters, the shoulders or the neck.

It is caused by a specific germ, the Bacillus or Blackleg, which, exists in the soil in certain regions, and to some extent appears to be indigenous in cetrain localities, especially where the land is inclined to be scrubby, damp and poorly drained. In some districts the disease is quite common and appears nearly every year, causing considerable losses among young cattle. Cattle are attacked chiefly at from six months to four years of age. Calves being fed on milk and not at pasture are seldom attacked. Cattle over four years of age are less frequently attacked than those under that age. Horses and human beings are virtually immune from Blackleg.

Cause and Transmission of Blackleg

The essential cause of blackleg is a rod shaped germ, termed the Blackleg Basillus, which exists and infects the soil in certain localities. As a result, cattle usually become infected and attacked by disease while at pasture. The germs gain an entrance into the animal's body by infected wounds or abrasions, of the skin, especially in the region of the feet and legs, and in the mucous membrane of the mouth. Infection also results from the consumption of contaminated feed or drinking water. This may take place by allowing the carcasses of cattle dying from Blackleg to remain unburied and thus infect the pasture fields, or the water in ponds and creeks to which cattle have access in feeding and drinking.

Blackleg is not, in the true sense, a contagious disease, as it is not transmitted or spread quickly from animal to animal by contact. The disease is conotracted chiefly from a common source, as infected soils and pastures, which explains the indigenous nature of the disease in certain localities.

It often attacks the young cattle in a herd where they are turned out to pasture in the spring and early summer, and also during the late summer and fall months, after a period of dry weather has caused the small ponds and swampy lands to dry up, thus allowing the cattle to graze over them.

This disease very rarely affects cattle during the winter while they are being kept in the stable.

Symptoms of Blackleg

Once an animal becomes infected with the blackleg germ, the disease develops very quickly, the period of incubation being generally about three days. The course and duration of the disease is also very short and may terminate fatally in from one-half to three days. In cattle, the first symptom manifested is usually sudden lameness ,in which one or other of the legs is dragged stiffly. Soon thereafter a swelling appears in the region of the thighs and quarters, the neck and shoulder or other parts of the body, The swellings in cases of blackleg are very characteristic in that they develop rapidly and are at first very hot and painful, and subsequently become less tender and the skin in the centre of the swelling feels cold and becomes dark colored and dry, like a piece of leather. Another striking peculiarity is that when the swollen parts are pressed or handled, they give a crepitant or crackling sound, due to the presence of gas or air in the affected tissues. The various lymphatic glands are also swollen and may be felt under the skin in different parts of the body, in the form of firm lumps about the size of apples. In addition to the swelling and lameness, symptoms of general disturbances become noticeable, such as high fever, labored breathing and rapid beating of the heart. Sometimes attacks of colic are observed. Finally the animal becomes prostrated and lies on the ground stretched out and soon thereafter dies. While the swellings mentioned are essentially characteristic of blackleg, ther are, however, some cases in which the swellings are either not present or may be too deeply situated in the body to be observed, and the only symptoms noticeable are th egeneral constitutional disturbances.

Post-Mortem Appearances of Blackleg

When any cattle are found to have died suddenly at pasture, it is often advisable to examine the carcass to determine the cause. In cases of blackleg the carcass usually appears to be greatly bloated and a reddish frothy liquid is often seen coming from the mouth, nose and anus. A more or less prominent crepitant, or crackling swelling may also be noticed anywhere upon the body, but more especially upon the rump or other parts of the hind quarters. If the swelilngs are cut into, the tissue appears a dirty brown or dark red color, and when squeezed a dirty, red colored, frothy liquid containing gas bubbles is pressed out, which has a ver yoffensive, sickly odor.

The tissues surrounding the swell- shown an extensive straw colored dropsical appearance. The lymphatic glands near the swellings are much swollen and filled with blood.

When an animal becomes attacked with Blackleg, successful treatment is hardly possible. This is owing to the fact that the disease is so often rapidly fatal and may cause death within a few hours, so that no opportunity is allowed for beneficial treatment. Even in those cases that survive for a period of one or two days, any treatment so far tried has not been found sufficiently successful to warrant much approval. Fortunately, however, cattle can be protected against the disease by means of vaccination with Blackleg Vaccine. Therefore, owners of cattle in districts where the disease is liable to occur should protect their cattle by the use of the vaccine. Two methods of vaccination are in general use; in one the vaccine used is in the form of small silk cords. The method of application in either case is comparatively simple and may be done by any one accustomed to the handling of cattle. In using the vaccine pellet method the vaccine pelet is forced under the skin by means of a sharp pointed injector, which, on being withdrawn, allows the vaccine pellet to remain in the tissues beneath the skin, where it becomes absorbed into the system. In using the vaccine cord method, the vaccine cord is fastened on a suitable sharp pointed needle hook, which is forced under the skin until the vaccine cord is completely concealed. The needle is then withdrawn and leaves the vaccine cord remaining in the tissues beneath the skin to be absorbed into the system.

The most convenient points for introducing either the vaccine pellets or the vaccine cords are behind the shoulder at the root of the tail. In either case, precautions should be taken to have the skin clean, as well also as the instrument used.

As a rule the vaccination protects cattle against disease for a period of six months to one year, but for safety, cattle should be vaccinated at intervals not exceeding that period of time.

In addition to the protection afforded catte by vaccination, it is also advisable, where possible, to keep them

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from grazing in such areas as are known to be infected and give rise to the disease.

In all cases where an animal dies from Blackleg, the carcass should be effectively disposed of. The best method of disposal is to cremate or completely burn up the dead body. Where this may not be possible, it should be covered over with some quicklime and buried in the ground to a depth of at least six feet. The dead body should not be dragged over the ground surface, nor should it be skinned or cut open, but should be buried or burned intact in the hide.

Blackleg vaccine is prepared by certain private laboratories and also by the Department of Agricluture at Ottawa. It can be obtained from the department at a nominal cost of five cents per dose, and the instrument required for its application at a cost of 75 cents. A herd, therefore can be protected against losses from Blackleg at a very small cost, and the best course to follow in affected districts is to regularly vaccinate the herd each spring before turning them out to pasture.

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Shorthorns

COMMON AILMENTS OF SHEEP.—HOW THEY ARE CONTROLLED

It is necessary for sheepmen to understand the common ailments among sheep and treatment for same, for veterinarians as a rule do not diagnose sheep ailments, hence the shepherd should watch carefully for first indication of disease and then treat without delay, while treatment may be effective.

It is the purpose of the writer to mention a few ailments and modes of treatment which have come under my personal observation. At this time of year as we approach weaning time, many ailments should be in good, healthy conditions; not many ewes are too fat. If we expect strong, vigorous lambs, we must keep the ewes strong and heealthy, but often a ewe in good condition is found to have some ailment.

Inversion of the Uterus

One trouble we have occasionally is due to inversion of the uterus, in case of severe labor. The uterus is turned inside out. In such cases I have found the best course is, when no assistance can be had, to raise the ewe's hind quarters by use of ropes tied to the hind feet and throw over something to hold the sheep up. Use warm water with disinfectant, as a wash. If the afterbirth adheres to uterus be careful in removing it. Then very carefully use the hand in replacing the uterus—necessary to be very clean; use disinfectant an hands. A needle with strong white linen thread should then be passed through the skin on each side, and thread tied so as to form a loop, which prevents the uterus from again protruding. Then leave the ewe to rest in quiet.

In case of continued straining causing the skin to tear out, cut heavy srtips form grain-sacks, using same as a bandage, around the ewe, tying in front.

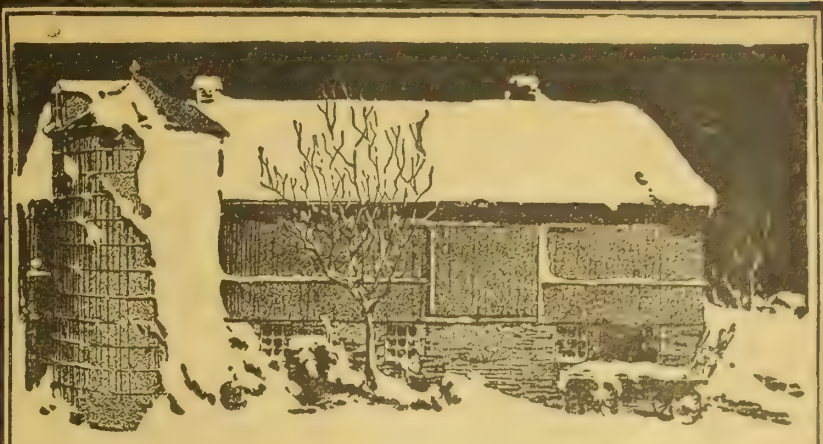
Garget

Garget is a disease consisting of inflammation of the udder. A symptom of garget is stiffness in one hind leg. When garget has occurred the milk must be drained off, the udder massaged, and a purgative given. The dose may consist of four ounces of Epsom salts. I find a hot application —dry heat—used on udder, very beneficial. One can hold a hot brick on the inflamed side, and also keep up the rubbing with one hand. If this does not prove effective, use a bran poultice.

Paralysis in Lambs

Ailments to which young lambs are subject are but few. These disesaes call for special treatment. The most troublesome ailments to which lambs are subject are those of digestive organs, and chief among these is paralysis. This disease is a symptom of chronic indigestion from inaction of stomach, caused by eating more food than can be assimilated. This is a common ailment among heavily fed lambs for early market. The symptoms show that the nervous system of the stomach is affected. The lamb suffers severely as if in great pain. It is unable to rise upon its hind legs, and is convulsed with spasms. One hind quarters appears to be paralyzed —in this case apply a hot iron to warm the muscles. One of the best remedies is hot ginger tea, followed

(Continued on page 892)



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THE HORSE

"HYGIENE OF THE FOOT," A NEGLECTED DEPARTMENT OF HORSE MANAGEMENT

If farm horses are to have their period of usefulness fully realized, more attention must be given to their feet in the stable. There is no department of horse management which is so much capable of being affected as that relating to the "hygiene of the foot."

Of all parts of the economy of the horse, the foot is universally admitted to be the most important. So long as systems of management continue, only to the routine of feeding and grooming, without rigid attention to the feet, so long will there be a lack of economy in keeping horses as a motive power on the farm. Proper attention to the foot cals for more than ordinary intelligence on the part of those under whose management it is placed.

One of the most competent exponents on the management of horses in Britain, has this to say on the stable management of horses' feet.

"Technical education can effect no higher or human purpose than to let light into the stable in the health interest of our horses. It is surprising how little really useful knowledge of the proper management of horses' feet is possessed by the average groom. We have often heard it said of horses lame in the feet, that they have 'done no work,' as if confinement and idleness afforded immunity disease. It is no part of the stable creed that inactivity and lameness stand in relation of cause to effect. but thi sis too often the case. If we desire to keep the feet sound, they must be brought into daily use, and the nutritive activities stimulated and upheld. The long, continued, forced rest, broken only at intervals, by short periods of exercise, which some horses experience, is absolutely injurious. As the result of this kind of treatment the foundation os frequently laid fo rmany of the worst forms of disease."

Preservation of the Foot

Most farm horses lead a comparatively idle life in the winter time. The instructions given by Colleges and Departments—re the winter care of farm horses—is mostly taken up with feeding, but where horses lead an idle life in confinement—there are certain rules of health aplicable to the feet, as well as to the body as a whole which should be observed. If a poung horse is to be laid idle for the winter, and it is desired to set up his vigor, and encourage his growth on durable lines, and also ensure an increase to his value, he should get his shoes taken off so that sole and frog may be brought in contact with the ground, as nature intended they should. For this, a box stall or yard is indispensible, and the material for the floor of box stall should be sawdust or moss litter to the depth of several inches. If the yard in which he has at his disposal for exercise should be hard with frozen mud, his growing hoof should be protected with light-tips in place of the shoes that have been removed.

The natural tenedncy of standing on hard cement or any hard substance all winter with the work shoes unremoved, is to render the hoof hot and dry, and deprive it of its elasticity and power of accommodating itself to the sensitive part within. This is fruitful of much mischief, and is one of the chief causes of hoof contraction. Naturally weak feet are simply ruined by this practice where a little care would have transformed them to a fit and servicable condition.

Not only from a utility point of view, but for human reasons, it is the duty of the horseman to give opportunity for the natural growth of the hoof. The foot of the horse is a most sensitive part of his anatomy, and inattnetion wil not only set up feet disorders, but the pain it causes affects his general health. If the horseman would take the lesson from a similar condition of neglect to his own feet, where boots that pinch and corns and ingrowing nails are left to torture and torment, sympathy with the horse might end in practical energy towards relief. Anticipate that the conditions that cause disease and pain will arise, as certainly they will through winter neglect, and be prepared to prevent them.

Growth of Hoof

The growth of hoof is influenced by many factors. It is more active in warm weather than in cold, and in well-nourished, healthy animals than in diseased and badly nourished ones. Paralles rings, which are sometimes seen round the surface of the hoof indicate that the animal has been better nourished at times than at other times.

The hoof is composed of a hard, resisting and elastic substance, which remains soft, if moisture is present, but becomes hard and brittle and liable to crack if evaporation has taken place. This condition is often seen in diseased feet, or where the perioplе or glazed surface has been rasped off at shoeing.

To improve the quality of the hoof horn, in the case of weak feet that are lof at the heels, thin in the crust, with horn of loose and coarse texture, cold swabs should be applied to the feet for three or four hours a day, and a little weak contharides liiniment rubbed over the coronet twice a week. When systematically carried out and persisted in, the effect of this treatment on the health and strength of the foot is very marked. Too little importance is attached to the preservative influence of water, in the management of the horses' feet, but unless some arrangement is made, whereby the horse could stand in water for an hour or two each day in the warm barn, the water just covering the hoof, swabing by hand takes toom uch time. For diseased, brittle feet, a hoof ointment is very useful, and wil lsave the time, though scarcely of such lasting benefit as the cold water swabs. Liquid tar, beeswax, honey and glycerine of each an ounce, lanoline and vaseline, three ounces each, make good ointments to encourage the growth of the hoof.

The growth of the hoof is also stimulated by repeated mild blistering. Liquid cantharides should be rubbed into each coronet for about three minutes. In order to obtain good results, it is esential to anoint the part daily after the blister has been applied with a non-iritating oil, such as colza. The blister may be repeated

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after a month. All this has reference to the treatment that should be given to the idle horse. The question of stable management of horses' feet is a very important one, and deserves the close atention of those who have charge of the dumb slaves of the farm.

BAD CONFORMATION IN HORSE'S LIMBS SHOW LIABILITY TO DISEASE AND UNSOUNDNESS

Most of the troubles that afflict the legs and feet of horses are due to either of two causes, viz., breeding with the unsound, and harsh and inconsiderate treatment. This latter cause tells more heavily and more permanently on the horse than on any other species of farm animals. It is quite possible to reduce the ills that are at present rampant amongst horses, by strict elimination of these two main causes of poor management in horse rearinfi. One cannot breed with animals that are predisposed to have leg weakness, and expect their progeny to be free from consequent disease. "What a man sows that shall he reap" is a strue in horse breeding as it is with the field grown crop.

Though breeding gives the right start to eliminate and prevent the spread of unsoundness, it is not everything necessary to fulfill that end. The very best breeding is not proof against results from bad usage or ignorance in care and feeding. The one suplements the other; good breeding must be followed by good care and feeding. Good care and feeding will not free the animal, born of unsound parents, from leg and foot troubles, neither will good breeding prove fully effective in checking the results that come through willful inattention and ignorance. Breeding and feeding are inseparable twins in high class horse breeding.

There are certain characteristics in the formation of the legs of a horse that are indicators of the tendency to leg weakness and foot disease. Every defect in conformation is costly, both to the horse and owner, but not so much because the defeat handicaps the horse in his work, as because every defect predisposes to peculiar injuries and troublesome diseases from which normal conformation is comparatively free.

Conformation of Legs that Tend to Disease

There are certain formations of the legs, easily detected at first sight, that require special attention to enable the animal to overcome, to a certain extent, its liability to leg troubles. Horses that show the defect of feet turned outward are liable to interfering, stumbling and sprained ligaments, and treatment is difficult and perhaps impossible when the cause is due to bad conformation. There are many other causes for interfering, and the most common are defective shoeing, rough road, and working hard when exhausted. . Proper shoeing oftenhelps to prevent interfering. The outside heel, and quarter of the foot of the injured leg should be lowered enough to change the position of the fetlock joint, thereby permitting the other foot to pass by without striking.

Crossfooted or intoed horses are also liable to interfering, and shoeing to prevent it is the only method that will meet with any degree of success.

Lameness in a horse is not often easy to detect, and when detected it is as difficult to explain the cause. In the matter of leg troubles with the horse, acquiring skill in detection is of the utmost importance. So difficult does the diagnosis of some cases become that veterinary skill is many times at fault. .

Spotting the Cause of Lameness

No one who has an interest in horses, or is assigned the duty of caring for them, can afford to neglect cultivating this perceptive quality. It becomes the means of relieving the horse of much pain, facilitating the work on busy days, and increasing the value of horse stock on the farm.

Many of the troubles caught at their commencement can be overcome andset right in the early stages, that would become permanent evils if neglected. All who have the true horse instinct are ever on the lookout for these signs of lameness, as they are shown while the horse is standing or at work. Lameness is not a disease in itself; it is only a sign of disease or injury, and locating the cause becomes a medium of education to the interested horsemen. The usefulness of any of the other animals about the farm is not affected by lameness to the same extent as that of the horse. It interferes with his chief asset, the pulling power of the farm horse.

Viewing the Horse While Standing

When a horse is seen standing with one foot pointing forward a little in advance of its companion the lameness comes from the leg and not the foot. When both feet are in line, but one forearm extended further forward than the other, the lameness is caused by some injury or disease to the elbow. When one fore foot is behind the line of the other, and the whole limb relaxed, the trouble is in the shoulder. With the hind feet when one is held off the ground the soreness comes from the foot. When one hind leg is in front of its fellow, then the lameness is due to some trouble below the hock. If the animal places its hind feet well forward and holds its head high it will be found to be lame in both front feet; and if two front legs are placed well back, with head hanging, then the trouble lies in both hind feet. This is done to take the weight from off the limbs in which the seat of suffering lies.

While the Horse is in Motion

When the horse is in motion, the symptoms are different, the nodding head showing lameness in the fore legs and dipping croup a similar condition in the hind legs. Pain in foot or hock is known by the manner in which the foot is lifted quickly and straight up from the ground, and when the foot is swung in a half circle, it is due to something wrong with the shoulder. Side bone and sprain of back tendons causes the horse to set down his foot, toe first, and when the heel is set down first it indicates founder, ring bone and stifle joint lameness.

When lameness increases with exercise, splints, sidebone and knee joint disease is evident, and when lameness diminishes with exercise, rheumatism and corns are present. Horses suffering from stringhalt, strained back and shivering, show

(Continued on page 892)

Horsemen Attention !

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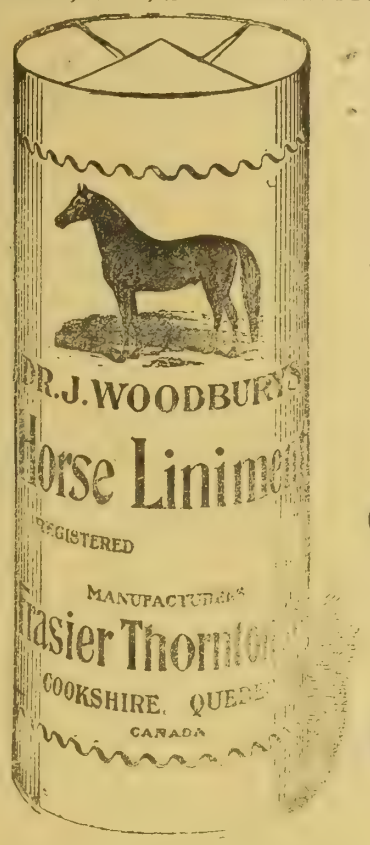

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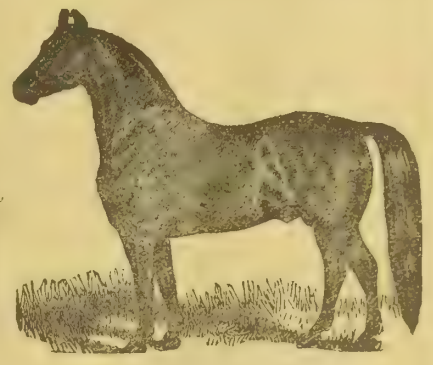

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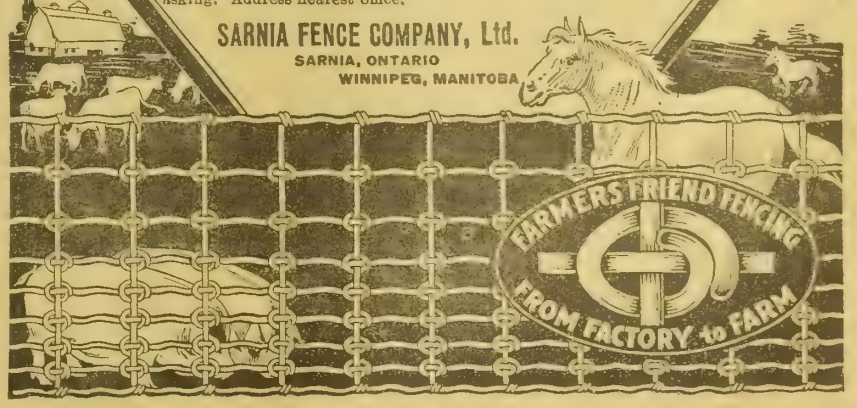

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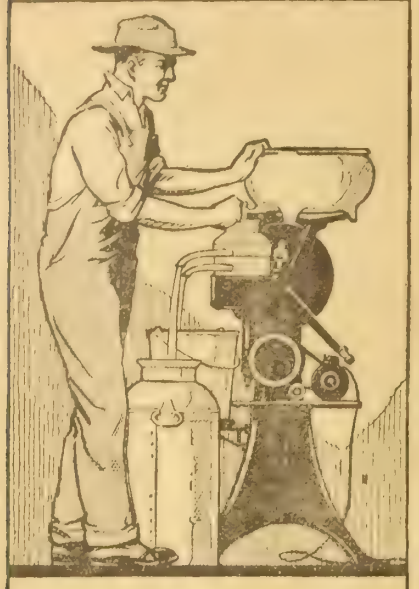

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BRANCHES IN ALL CITIES

POULTRY.

ELIMINATING THE DISEASED STOCK

The prevention of poultry diseases is far more important than the cure. It is safer and cheaper and easier to work. The experienced farm poultryman could go into some farm flocks and reduce neext year's mortality rate to a very low point by simply seelcting the most vigorous birds for breeding purposes. The weak birds must be eliminated and none of their eggs used for hatching. By breeding from the strong stock the progeny seem to have a certain immunity to disease. That is why the oldest and most succesful poultrymen never seem to worry about poultry diseases. They have eliminated them by careful selection of the breeding stock and then they use sanitary measures to keep the disease from returning.

The use of mature hens for breeding purposes helps to insure the vigorous chicks which can fight disease. Many flocks are raised from pullets year after year until the stock is weak and susceptible to colds and every disease that comes along. The advice to kill old hens is all right if certain provisions are made for breeding stock. A few of the best mature hens must always be retained to insure a suply of good hatchoing eggs.

Hens which have had colds should not be used as breeders. Hens which are suffering from any disease must be excluded from any yards immediately and either killed or cured. The doctoring of poultry is both expensive and risky, as the hen which is low in vitality from sickness is apt to suffer from other troubles and be a constant danger to the health of the flock. At one time we kept a colony house which we called a hen hospital. If a hen caught cold she was interned. A hen that showed a lack of interest in her feed was also isolated. When these hens seemed alright they were returned to the flock and forgotten and the next year their eggs were incubated along with the others if they were large and of good type. Now we never return a bird without marking her.

Birds that are overfat are not used for breeders, but killed and marketed or used at home. The hen hospital is seldom used now and the flocks are managed without any worry as the birds do not catch cold except in very rare instances. It must be increased vitality in the flock that is making them immune, as they are growing under about the same conditions as when the colds were more plentiful. This simple matter of breeding from the best birds is one of the most important factors in properly breeding poultry.

The value of vigorous breeding stock is apreciated by every farmer as there is nothing more discouraging than illness among the flocks. This point is one of the reasons that we like to rais all our stock on the home farm. Some breeders do not raise many chicks and then plan on buying pullets in the fall to fill their houses. This may be all right in the city or with the farmer with a small flock but the poultryman must raise his pullets in order to insure a healthy vigorous flock which is not easiy susceptible to disease. The home grown birds from vigorous stock always seem to be the best. Of course this does not refer to the custom of buying pens and trios of fine breeders or single birs for the improvement of the home flock but to the scheme of buying a large number of low-priced birds t ofill up the home flocks even though the exact quality of such stock is unknown.—E. L. M.

GOOD NESTS FOR HENS ARE ESSENTIAL

When hens steal their own nests in the hay and the fence corners it will be noted that they are rather shallow, possibly just covered enough to make their eggs roll up toward the centre without piling up on each other. When nests are made in the poultry house they should follow out that principle as far as the litter is concerned. Place just enough straw or hay in the nest to make a hollow just as the hen would make in the hay. Hay can be knotted up and twisted into the nests in such a manner that it is not easily scratched out. Frequently the hens wil lscratch most of the loose straw out of a nest in two or three days.

The egg-eating habit is largely prevented by having the nest dark. The hens should enter the nests on a track built at the rear and the eggs removed by lowering a hinged door at the front. Darkened nests containing sufficient litter will usually prevent egg-eating. Some breeders place the nests beneath the droppings boards but this makes them more difficut to clean and increases the danger of lice and mites obtaining a start. Nests placed along the wall should be at sufficient height so that the farmer ca ngather the eggs without unnecessary stooping. It pays to hinge the bottom of the nests so that they can be dropped down to release uncleaned litter. This should be raked up and removed from the house instead of being mixed with the scratching litter on the floor. Nests with hinged bottoms can be cleaned and sprayed in a short time and filled with fresh litter. There are few cracks and crevices to act as breeding places for mites and lice.

It pays to have plenty of nests for the size of the flock as this will prevent some hens from stealing their nests. The amateur may rejoice when finding a large nest full of eggs, but the practical poultryman knows that those egg sshould have been in the poultry house. He knows that they should have been marketed when fresh and the eggs in the stolen nest must be used at home where every one can bear a rigid inspection before use.

Occasionally hens will lay in the litter beneath the dropping boards. At first thought it might appear best to leave these nests in the litter in anticipation of finding some more eggs there the next day. However, we always destroy such nests by raking them full of litter to discourage the hens laying in places where the eggs are difficult to gather. Eggs laid on the floor may be come lost in the straw or they may be broken by the birds and eaten. This will lead to the egg-eating habit. If an egg is accidently broken on the floor and the hens eat it quickly it does not follow that they are egg eaters as a habit. Many hens will eat a broken egg ravenously when they would never think of picking open an egg with a strong shell.

THE BEST CURE FOR ROUP IN POULTRY

The best cure for cold and roup is prevention. I have not had a case of either in five or six years. Plenty of fresh air, winter and summer, prevents colds. I firmly believe it pays to use the axe when roup appears and

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follow this by disinfecting the poultry house. I have it from authority in which I have the fullest confidence that where the poultry house can be shut tightly both colds and roup can be prevented by fumigating with zenoleum, while ethe fowls are on the roost at night. Heat a brick until it is really hot, put it in an old kettle and pour the zenoleum over it, so that it will volatize and fill the room with the fumes. A small quantity is sufficient for the average sified roosting room. eSt it under the perches, so that the fumes fill rise up among the fowls. I have a notion that any coal-tar, sheep or hog dip would be equally effective. Where the cold is slight coal oil squirted from a small oil can into the nostrils and the slit in the roof of the mouth usually cures it. eFeding epsom salts in winter is a good prevention of colds or digestive disorders. Mix into the mash once a week a quarter of a teaspoonful of the salts ofr each full-grown hen.

I am among those who do not believe that gravel is essential to hens, so long as they can get all the oyster shells they will eat; yet I have not quite the courage of my convictions, and I feed a little grit while feeding unlimited oyster shell. Poultry grit prepared for use can usually be bought at any store where oyster shell is kept.

MILLER PURVIS.

ADVENTURES OF A POULTRY JUDGE

(By Miller Purvis in the Breeders' Gazette.)

At a show in a Tenessee city one woman exhibitor followed me right through. She had a pair of Rouen ducks on exhibition, and was as anxious to get a prize as if her life depended on it. She was the wife of a pawnbroker, and of the race that usually keep pawnshops. She was magnificently arrayed in black silk and fairly blazing with gems. Diamonds, rubies, sapphires, pearls, gold chains and silver ornaments decked her hair, hands and person in lavish profusion. If I could have made one grab at her and got away with it I could have bought a farm.

After she got first prize on her ducks she was more faithful in following him and talking about them than before. I was judging bronze turkeys and found what I thought was a defect, but was not certain. I had a morocco covered edition of the "Standar" in my pocket which I took out to consult about the point over which I was in doubt. The begemmed lady and her friend were the only ones near me. I laid my "Standard" down on a coop and turned to the bird I was judging. A half-minute later when I reached for my "Standard" in my pocket which I took of the two women had it, but I had not the nerve to take it away from her and never saw it afterward. I have wondered many times just why that book was so brazenly stolen.

I regret to say that a few exhibitors take occasion to become hilarious during the shows which they attend. At such times some of them have made funny breaks at me. At a show in California one exhibitor was drunk regularly, morning, noon and night. He had a magnificent exhibit of Orpingtons and I gave him about every prize for which he competed. That evening he came around and told me with a very serious manner that he had little use for me as my judgment on the Orpingtons was absolutely wrong. I told him I would gladly reverse my judgment if he asked it, but he wandered away. The next morning he came around just nicely "lit up," but still in full possession of his faculties. He said he had an apology to make for what he had said the day before, as the birds I had given the prizes to belonged to him, a fact of which I had not before been aware.

At a big show in British Columbia a man came weaving down the aisle where I was trying to select the best ten from among thirty-nine White Wyandotte pullets, all of which looked very much alike to me. He watched me a little while and then said: "Shay judge, know what I think of you?" I replied that I did not know, but would be glad to have his opinion. He said: "Some o' them birds ish mine, y' un'erstan', an' I just's leave have you put 'em in a bag an' shake 'em out; judgment'd be jus' 's good." In the circumstances I came very nearly agreeing with him, I told him so and he wandered away happily.

Even though a soiled egg may be perfectly fresh and good, it is very hard work to make the buyer believe it and he is wililng to pay two or three cents more a dozen for clean ones.

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1. Keep better poultry: Standard bred poultry improves the quality and increases production.
2. Select healthy vigorous breeders: To produce strong chicks.
3. Hatch early: To produce fall and winter layers.
4. Preserve eggs when cheap for home use.
5. Produce infertile eggs except for hatching.
6. Cull the flocks: To eliminate unprofitable producers.
7. Keep a small back-yard flock: To supply the family table.
8. Grow as much of your poultry feed as possible.
9. Eat more poultry and eggs: To conserve the meat supply.
10. Market the poultry profitably: By fattening on the farm and carefully observing market conditions.

Most hens do not obtain sufficient exercise in winter, but by feeding them clean ration in litter both night and morning they wil lget all the exerecise they need.

An active hen with the proper rations will want to lay right along, and most hens under two years of age will keep active ewithout exposing themselves to snow and cold.

MOCK DUCK

Chop finely 1 lb. of lean raw beef. Season highly with salt, pepper and onion juice, shape around a roll of stuffing (dressing) and bake 30 min. in a moderate oven.

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N. B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

A THOUGHT FOR TODAY

Not for the eyes of men
May this day's work be done,
But unto Thee, O God.
That, with the setting sun,
My heart may know the matchless prize
Of sure aproval in Thine eyes.
—Exchange.

HANDSOME IS, WHO HANSDOME DOES

(By Gertude Estham Graham, Elmsdale, N. S.)

As Kathryn Bennet walked along the country road her thoughts were scarcely in keeping with the beauty of the spring morning. She was living over agin the scene with her brother, the previous evening, when she announced the breaking of her engagement with Arthur Wilson.

Six months ago when Arthur Wilson had asked her to be his wife, she thought her happines was complete. He was weathy, talented and popular, and to her unwordly mind, he seemed a model of manly vritues.

Kathryn was the daughter of wealthy parents; but delicate health for several years had prevented her from going into society; and although she was twenty-four, she still possessed the charm and unspoiled sweetness of mind of a young girl, and she had small knowledge of life's evils.

Therefore, when rumors of Wilson's affair with the daughter of a country farmer the previous year, reached her, she was horrified. And when, confronting him with the story, he admitted it, but excused himself on the grounds that "he was no worse than the other felolws of his set," and he "had settled several thousand dollars on the girl," her respect and love for him suddenly died, leaving her the dull ache of a heart which has lost its faith.

And then her mother severely condemned her for childishness in making a fuss over such a matter and breaking such a "splendid match."

"Why, Kathryn," she had said, "your idea of a Sir Galahad sort of a man is antiquated. Young men of today must have their fling, but they settle down when they wed. If you expect a saintly man you will look in vain for a husband."

Hardly noticing where she was going Kathryn turned into a road, her mind filled with doubt and despair. Was there no man she could have faith in, one whom she could look up to and respect? An abrupt turn in the path brought in view a forest glade, carpeted with velvety grass and lovely yellow violets. Forgetting her perpexities she sank to her kneees, and began picking the delicate blossoms. Hearing a sound, she rose to her feet and confronted a man. Her first thought was "What an ugly man!" Her nesxt, "what wonderful eyes."

Surely the two presented a strange contrast. She, tall, lovely and graceful, her air bespeaking the aristocrat, He, with twisted misshapen body and homely features and a smile half whimsical, half bitter, redeemed only by fine eyes, and a tender, sensitive mouth.

She was the first to speak and they fell into a conversation, which, beginning with the beauty of the woodland scene, grew until they were talking like old friends. The purity and nobility of his thoughts were a revelation to the girl, and the charm of his manner mad eher forget his deformed body, and when she learned he lived near her father's country estate, she asked him to call. Their acquaintance grew rapidly that summer in spite of her mother's protests.

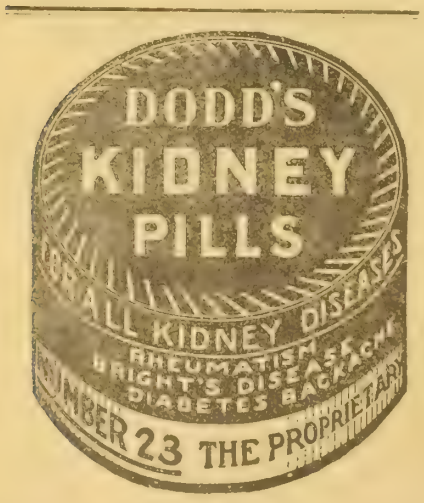
John Leighton was only a poor country doctor, whose life was devoted to his patients, mostly people of the humblier sort. His deformity made him a shy, sensitive man, and if it had not been for his practice, his life would have been a lonely one indeed. As it was his kindness, unfailing sympathy, breadth and charity of mind made him the idol of the village. But his friendship with Kathryn was a new experience in his life, and it brought him many mappy hours until he realized he loved her. The knowledge brought him pleasure and pain, but the bitterness almost drowned the sweetness.

So one evening at the end of his call, as she walked with him to the gate he told her that he must say good-by. The old bitterness crept into his voice, as he said, "I have been a fool in letting myself drift from friendship into love; for it is come to that; I, poor, ugly cripple, have presumed to love you, and so it is best, we shall not meet again."

"Is that all?" asked the girl, calmly, though her heart beat riotously, and her cheeeks flushed; 'are you not to ask my wish? I cannot give up my friend easily."

"Girl," he groaned, "do not make it harder. I cannot see you and not suffer. Friendship is beautiful but love is more, as I cannot have that let me say good-by."

"John," said the girl softly, "listen. You speak of your poor crippled frame but I love it for the great manly soul that dwells in it. Do you know what you are to me? You have taught me faith and trust. The unselfishness of your life, the purity of your manhood, and the depth and earnestness of your soul mean more to me than aught else." Bravely she raised her face to his and said, "John, cannot you read in my eyes that I love you?" As her voice sank to a whisper he thrilled with wonder and joy of it all and gently drew her to him in their first kiss.



WASH DAY MADE EASY

The reason why most women dread wash day is that they have not the proper appliances with which to work. "Oh," they say, "If I only had a few conveniences, or a laundry, I could get along very well."

In almost every case in which this camplaint is heard, there are remedies that can be applied at very little expense, and it is of some of these that I want to tell you in this article.

The things that make washing hard work are: stooping, turning the wringer, lifting heavy pails of water to and from tubs, and carrying baskets full of wet clothing. In the average family all these can be made easier or done away with altogether.

Consider the wash bench, for instance. Generally you will find the same trouble with this as you do with the kitchen sink; it is too low to allow the worker to accomplyish her task without physical discomfort. So the very thing to do in making your laundry work lighter is to raise that bench so that you can rub clothes there without stooping. It may have to be blocked up as much as twelve inches before you can work at it without causing a backache.

A Wash Basket on Wheels

Then get some contrivance to raise your basket to the same height so that there wil be no necessity for stooping over when you have to take any articles from it. The best thing in this line is a little platform of the right height on wheels, provided with a handle like a child's express cart, which can be run about the room in which the washing is being done as well as in the drying-yard. A woman who tries such a cart will wonder how she ever managed to lug a heavy basket about the yard.

Now for the tubs. If you have to buy new ones, get those with faucets fastened into the side. Some of these spigots are suplied with screw-threads and such are to be preferred over the plain ones. You do not need to be discouraged, however, if you cannot afford such tubs. Galvanized or wooden ones can be perofrated and a spigot set in by a tinsmith or a carpenter at very little expense.

Emptying and Filling Tubs

A long piece of garden hose attached to the faucet, when necessary to empty the tub, conducts the water out of doors withou the expenditure of the usual amount of valuable time and energy. This hose can be made to fill the tubs as well as empty them It is a simple matter if you use city water and can screw the hose to the bibb at the sink; and if the spigot there has no screw threads, it can be replaced by one that has. Cistern water can be pumped into a large funnel to the small end of which the hose has been fastened by a wire or cord, and so conddcted to the boiler or tubs at a great saving of time and strength to the worker.

Boilers that Save Labor

The newest boilers are provided with screw hose bibbs so that they. too, can be emptied without the usual labor of lifting heavy pails. One of the very latest receptacles in which to boil clothes has t rotary wheel inside. This is a great convenience in stirring the boiling garments and in removing them to the rinsing water, to say nothing of the assistance it affords in cleansing the clothes. Such a boiler made of copper, if properly cared for, will last a lifetime and will more than pay the buyer for the amount it costs by making the work of wash day less arduous.

The motion required in rubbing the clothes on a washboard is very trying and can be almost entirely avoided by means of a good scrub brush such as is frequently bought for the small boy with which to wash his hands and feet. After a very soiled portion of the garment has been exposed on the

ROYAL YEAST CAKES

Now that the new government standard flour is in general use, the quality of the yeast you use is more important than ever. Use Royal Yeast Cakes. Their quality is absolutely reliable. Bread made with Royal Yeast will keep fresh and moist longer than that made with any other.

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Perfectly packed in bright lead foil, and price marked on every package.

washboard, it can be rubbed with soap, then scrubbed with the brush over the uneven surface. The result is just the same ts that acocmplished by the more fatiguing movement, and the process is far easier on the clothes—and on the temper of the worker.

Better than al lthese things combined, however, is a good washing machine. If you have water or electric power, the operation of such a convenience is a simple and inexpensove matter; but a hand machine is better than none if you canot have other motive power. A water power machine that will do good work for years can be bought for as litle as fifteen dollars; one designed to be run by electricity may cost three or four times as much. But is far more expensive to be without such a labor-saver than it is to have one.

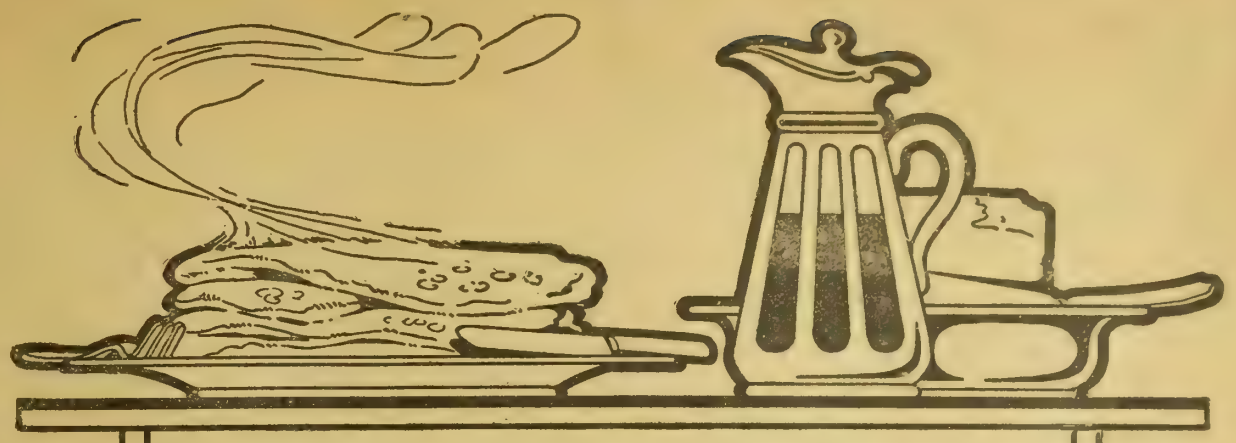
Buy a Good Wringer

It pays to buy a good wringer—and more than one, if you can afford it, because that saves changing from one tub to another. A wringing machine run by water power or electricity should be in every household able to make use of such up-to-date methods. While the initial expense is greater than that of the old-fashioned wringer, such a machine is inexpensive to run and makes it easy for a woman to be sweet-tempered after doing a large washing. There are few housekeepers who would not like an electric drying machine, but just at present the possession of such a convenience is quite out of the question in the average family. On the other hand, there are many who have the means of making a splendid clothes-dryer at almost no expense.

Drying the Clothes

A rack built of wire or slender strips of wood about the hot-water boiler in the kitchen wil prove a boon in cold or stormy weather. A wooden clothes rack built in three or four panels is another great help. Clothes can be hung on this. Then, when you are ready to leave the kitchen, the rack can be adjusted so that it will suround the range on three esides and in a surprisingly sort time the garments will be ready to be sprinkled. On very cold days, too, small and flat pieces can be hung on this rack and the whole contrivance taken out of doors when it is full. This practice saves many a bitter experience of hanging up clothes in a biting, stinging wind.

Still another convenience is a cheesecloth bag in ,which doilies handkerchiefs and other small pieces can be slipped after they have come from the wringer and the whole fastened by a large safety pin to the line out-of-doors.



HOT PANCAKES!

Yes, But-- What are pancakes worth without syrup? It is the syrup that gives the flavour; and there is no other syrup that tastes just as good as

CROWN BRAND CORN SYRUP

For hot pancakes, hot biscuits and muffins, and a dozen other Table and Kitchen uses, housewives with the widest experience use Crown Brand, every time—the golden syrup with the cane flavor.

For Marmalade and other preserves, we recommend our LILY WHITE Corn Syrup.

186

Sold by Grocers everywhere in 2, 5, 10 and 20 pound tins.

The Canada Starch Co. Limited - Montreal

PENSIONS FOR MOTHERS URGED BY THE INSTITUTE

(St. John Telegraph)

There was a large gathering of representative women at the monthly meeting of the Women's Institute held in the basement of the Congregational Church, St. John, recently with the president, Mrs. J. W. V. Lawlor, occupying the chair. Arrangements were made for holding classes in household subjects and much of the evening was spent in discussing the mothers' pensions scheme; the meeting passing a resolution in favor of such pensions.

Mrs. Richard Hooper made a very strong case for mothers' pensions. She spoke of a particular case of a widow of forty with four children and no money saved, saying that to this widow the following courses were open: first, to put the children in an institution and go to daily work; second, to go to daily work and leave the children at home in danger of fire or to roam the streets and eventually appear in the juvenile courrt or, third, to stay at home, wear herself out physically and mentally trying to make ends meeet, or, fouth, to starve—or finally seek help through legislation. Mrs. Hooper went on to tell how France had first established mothers' pensions in 1908 and Switzerland had followed quickly, as that country discountenanced institutions for its children or the aged. She also spoke of the method now used in Chicago, whereby $7.75 is allowed to a widow for each child and the money is raised by taxation . She strongly urged the necessity of legislation in New Brunswick that would give the children home training rather than institutional, saying that although taxes were heavy, there was joy in helping the right way at the right time and that the only real foundation for good citizenship was laid in early home training.

Mrs. Coates said that Manitoba and Saskatchewan had already established mothers' pensions and Alberta and British Columbia were on the verge of passing such legislation. She gave a detailed account of the methods used in Manitoba where the funds are raised by taxation, the province and the mnuicipality each paying half, and a great deal of the work in connection with the pensions is done voluntarily. Each case is investigated and unannounced visits are made by a supervisor to see that good use is made of the pension. Mrs. Coates suggested that if such legislation were passed in New Brunswick the Women's Institutes could look after much of the work. In reply to a question as to whether allowance for a housekeeper would be given to a man left widower with several small children, Mrs. Coates said that she thought such provision could be made. Mrs. Kuhring asked if the idea that his wife and family would be provided for in any case might not make the young head of a household less provident. Mrs. Hooper did not think this would be the case, quoting statistics to prove her statement. She also

TOOK SEVERE COLD

SETTLED ON CHEST.

Bad Cough for Weeks.

The cold starts with a little running of the nose, the head becomes stuffed up, but little attention is paid to it, thinking perhaps it will go away in a day or two.

You neglect it, and then it gets down into the throat and from there to the lungs, and it is a case of cough, cough, morning, noon and night.

However slight a cold you have you should never neglect it. In all possibility, if you do not treat it in time, it will develop into bronchitis, pneumonia, or some other serious throat or lung trouble.

Dr. Wood's Norway Pine Syrup is a universal remedy for those who suffer from any bronchial trouble. It stimulates the weakened bronchial organs, soothes and heals the irritated parts, loosens the phlegm and mucous, and aids nature to clear away the morbid accumulations.

Mrs. Wm. Kaye, Talmage, Sask., writes:—"Last winter I took a severe cold which settled on my chest. I had a bad cough for weeks. I got some medicine from our doctor but it did me no good. At last a friend advised me to try Dr. Wood's Norway Pine Syrup, which I did, and after using one bottle I found that my cold was better. I have recommended it to my neighbors, and they say they would not be without it."

Dr. Wood's Norway Pine Syrup is for sale by all dealers. Price 25c. and 50c. a bottle.

Manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

said that, of 270 pensioned mothers' children, none had appeared in juvenile courts. Miss Alice Fairweather spoke of the method of administrating patriotic funds saying that she thought mothers' pensions could be dealt with similarly.

On the motion of Mrs. Hooper, seconded by Mrs. Coates, a resolution was passed and will be forwarded to the premier of the province and to Hon. Dr. Roberts, minister of public health ,and will also be brought before the convention of Women's Institutes in the fall. The resolution said that the Women's Institute of St. John being convinced of the desirability and need of pensions for widowed mothers of children asked that legislation be passed in New Brunswick authorizing such pensions.

Mrs. Lawlor referred to the fact that the rooms of the Institute in Union Street were open to charitable organizations free, and that she hoped they would be used to assist any movement for the betterment of the lives of women and children. She said that arrangements had been made for free classes in milinery, dressmaking, domestic science, first aid and home nursing.

The entertainment arranged was then given and greatly enjoyed. Miss McInerney sang, "Ring Out Sweet Bells of Peace," and as an encore, "Annie Laurie," and Mrs. Edmund Flewwelling recited a very amusing sketch entitled, "When Hezikiah Closed the Saloon."

Mrs. Lawlor then told of settlement work she had seen in Montreal and the methods of which she thought could be followed in St. John. She spoke also of the wrapping of bread in St. John saying that all should stand together to get some action taken in the matter and not allow themselves to be passed from board to board, getting no satisfactory answer on the subject. Mrs. Flewwelling told of a case where bread was being offered for sale that was not fit for consumption.

Mrs. Hooper described the systems of milk inspection in Montreal and Toronto, having particular praise to bestow on the Toronto authorities in this respect, as they have made pasteurization of milk compulsory and have ninety-two nurses under the board of health. She pointed out the great need for milk inspection in St. John and fo rmore education along hygenic lines.

The serving of refreshments and the enjoyment of a social hour brought the meeting to a close.

Let Nature Clear Your Blood

With pure, rich blood—a healthy stomach—and an active liver—you may laugh at disease, and, you may have all three by taking

Dr. Wilson's HERBINE BITTERS

This splendid blood medicine—made of old fashioned herbs—gives the system a regular "spring housecleaning"—regulates liver and bowels—cleanses the blood of all poisonous matter—tones up the nerves—and gives strength, vigor and a feeling of good cheer to the whole system.

At most stores. 35a. a bottle; Family size, five times as large, $1.

The Brayley Drug Company, Limited
St. John, N.B. 42

SOME RECIPES DEMONSTRATED AT RECENT SHORT COURSES HELD IN SUSSEX

CARROT SOUP

2 c. stock.
2 c. carrots.
4 slices onion.
2 c. milk.
2 tbsp. butter.
4 tbsp. flour.
Salt and pepper.

Cut carrots in small pieces and cook with onions in water 20 minutes or until tender, press through a strainer (there should be 2 c. stock) finish as vegetable sauce and serve hot.

CREAM OF TOMATO SOUP

2 c. Tomatoes.
⅛ tsp. soda.
2 tbsp. butter.
4 tbsp. flour.
Salt and pepper.
2 c. milk.

Stir tomates slowly one-half hour, press through a strainer, add soda while hot and water to make 2 c. stock. Finish as vegetable sauce and serve immediately.

CORN SOUP

1 can corn.
1 pt. water.
1 pt. milk.
1. tbsp. butter.
1 tbsp. chopped onions.
3 tbsp. flour.
Salt and pepper.
Yolks 2 eggs.

Cook corn and onion in water 20 min., press through a strainer (there should be 1 pt. stock and pulp) finish as vegetable sauce, add beaten yolks, cook 1 min., strain and serve immediately; eggs may be omitted.

GREEN PEA SOUP

1 pt. or 1 can peas.
3 c. boiling water.
1 pt. milk.
2 tbsp. butter.
2 tbsp. flour.
Salt and pepper.

Wash the peas and cool them in boiling water until soft, pres through coarse strainer (there should be one pint sock and pulp). Finish as vegetable sauce. If peas are fresh, pods may be cooked with them.

CLEAR SOUP

2 lbs. meat and bone.
1½ qts. cold water.
½ c. onion.
½ c. turnip.
4 cloves.
6 pepper beries.
1 tsp. mixed sweet herbs.
1 bay leaf.
1 sprig parsley.
1 piece celery root.
1 white of egg.

Cut the meat into small pieces and soak with bone in cold water 1 hour. Cook gently 3 hours, add vegetables finely chopped and seasonings. Cook 3 hours longer, strain, cool, remove fat and clear. Several pieces of lemon may be heated with stock if the flavor is desired. If part of the meat and vegetables are browned the color and flavor of stock are improved.

PORK CHOPS WITH FRIED APPLES

Wipe chops, sprinkle with salt and pepper, place in hot frying pan and cook slowly until tender and well browned on each side. Arrange pork chops on a platter and suround with slices of apples, cut ½ inch thick fried in the fat remaining in pan.

Full weight of tea in every package

RED ROSE TEA "is good tea"

Sold only in sealed packages

121

WARNING—

That pain in the back is a danger signal.

Pain in the back is one of the commonest symptoms of kidney trouble. It is Nature's way of telling you that your kidneys are tired, congested and need immediate assistance, or they cannot keep the blood stream purified.

You know the rest. Once the blood stream is poisoned, a chain of diseases follow, and you probably become an invalid. Be warned,—use

Gin Pills FOR THE KIDNEYS

and free yourself from the ravages of all Kidney or Bladder afflictions, Brick Dust Deposits, Painful Urinations, Backache and constant Headaches.

Gin Pills have brought relief to thousands—they will do the same for you. Try them.

50c a box. Sample box free on request.

THE NATIONAL DRUG & CHEMICAL CO.
of Canada, Limited, Toronto, Ont.

U.S. residents should address Na-Dru-Co., Inc., 202 Main St. Buffalo, N.Y.

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POTATO SOUP

1½ c hot riced potatoes.
1 qt. milk.
2 sliced onions.
2 tbsp. butter.
1 tbsp. flour.
1½ tsp. salt.
¼ tsp. celery salt.
⅛ tsp. pepper.
Few grains cayenne.
1 tsp. chopped parsley.

Scald milk with onion and add slowly to potatoes. Make white sauce of mik mixture and remaining ingredients, excepting parsley, strain and just before serving add parsley. Cold mashed potatoes may be used and served with milk.

DRESSSED MEAT

Wipe meat, remove bone and stuff, place on rack in dripping pan and dredge meat and bottom of pan with flour. Place in hot oven to sear. As soon as flour in pan is brown, reduce heat and baste every 10 minutes. It may be necesary to put a little hot water in pan while meat is cooking. When about half done season with salt and pepper. For roasting allow 18 minutes to the pound.

STUFFING

2 c. bread crumbs.
2 tbsp. butter (melted.)
½ tsp. salt.
⅛ tsp. pepper.
½ tbsp. poultry seasonings.
¼ c. boiling water.

BROILING MEAT

Remove extra fat from the meat. Grease the broiler with some of the fat. Place meat in broiler and broil over a clear fire. Sear and then turn every 30 seconds. Chops should be cooked about 8 min. Season and serve on hot platter. In pan brailing keep the pan free from fat.

HAMBURG STEAK

Chop finely 1½ lbs. lean raw beef, add 1 tsp. salt, pepper and if desired, a few drops onion juice. Shape into flat cakes and pan broil.

KIDDEE

1¼ lbs. uncooked tough meat.
1 tbsp. grated onion.
1 tbsp. chopped parsley.
1 tsp. salt and pepper.
1 c. stewed and strained tomatoes.
1 tsp. butter.

Chop meat very fine, add seasonings, form into balls about the size of an egg, place in baking pan. Add tomatoes and butter. Bake in a moderate oven 30 min., basting 3 or 4 times.

NOTIONS FOR JUNE BRIDAL SHOWERS

By Laura V. Hamner

I wish one of my friends would marry soon, for I have deramed out the loveliest shower and I want to try it out while I am brim-full of enthusiasm over it.

I should send out invitations to a "Hit-or-Miss" Shower, telling my guests to send in their gifts early so that I might arrange them according to a certain scheme. I should place the mahogany clock in the kitchen cabinet, the boudoir-cap in the furnace-room, the percolator on the victrola, and the bronze book-racks in the bathtub. Of course they would be duly disguised so that no one should see them until the bride herself should enjoy them and should read the little messages which would probably accompany them.

I have planned to have a seat of honor for the bride. A little maiden all in holiday attire should enter rolling a small wheelbarrow painted white, with a pretty, fluffy bow on it. In the barrow would be a ball of cord of the color of the decorations and this would be rolled to the feet of the bride enthroned on her chair of state. She would then re-wind the ball, finding at intervals a card or slip of paper. This would be my adaptation of the "wonder ball" idea. Each card would tell her where she could find a gift and I feel sure she would sally forth after each discovery to return, bearing a new trophy. I feel sure I could make a charming afternoon party out of this plan because of the elements of originality, mystery, and informality.

If I should decide that the preceding would be insufficient to make a program for a party I should use the "Wishing Well." I would make a well of rocks around a deep vessel filled with punch and a tiny windlass and bucket would complete the preparations. Then I should tell my guests that this was one of those mystic wells where, if one drank, believing in the efficacy of the waters, all their wishes would come true. I would then demand, in Peter Pan style, that they give evidence of their faith by drinking and wishing the bride well. I believe that much amusement would result from the wishes expressed.

May had a kitchen shower for Alma the other day and the manner of presentation was especially pleasing to the guests.

We are not used to negroes in this section; many of us remember them as a part of our childhood, and so it was a real treat to see a fat colored woman come strolling into the reception-room, pulling a child's wagon, loaded with bundles of kitchen utensils. So cleverly was she disguised that it was not easy to believe that "Dinah" was our neighbor, supposed to be too ill to be present. The bride offered Dinah a permanent position as cook and the conditions of service were discussed, to the amusement of all the guests.

At a shower which I attended last Summer, the gifts were all wrapped,

"I Am So Short of Breath"

"IT MUST be your heart, Grand Dad."

"Yes, I suppose it is. I am getting old, you know."

"Oh, you are not so old. You have got run down after the cold you had and will be all right when you get your blood built up again."

"Well, I hope so, dear."

"You remember how weak my heart was, Grand Dad, when I used to be pale and anaemic. It was no joke for me to climb these stairs then."

"You are all right now, aren't you?"

"I never felt better in my life, Grand Dad, and if you will use Dr. Chase's Nerve Food for a while you will get strong and well, too. That is what cured me."

"But do you think that the Nerve Food is any good for old men like me?"

"I am sure it is. I often read letters in the newspapers from old people telling about what a great benefit it has been to them by enriching the blood and increasing their vitality."

As an example of what Dr. Chase's Nerve Food does for people of advanced years, here is a letter from Mr. James Richards, 73 Dundas St., Belleville, Ont., who is 89 years of age. He writes:

"I was suffering from a weakness of the heart, shortness of breath and frequent dizzy spells which used to force me to go and lie down for a time. I secured Dr. Chase's Nerve Food and received such splendid results that I continued its use until I am now feeling fine and am not troubled with these symptoms any more."

Dr. Chase's Nerve Food, 50c a box, 6 for $2.75, all dealers or Edmanson, Bates & Co., Ltd., Toronto. On every box of the genuine you will find the portrait and signature of A. W. Chase, M.D., the famous Receipt Book author.

"ALL IN" AS HE THOUGHT

Could Not Work or Walk Any Distance.

The efforts put forth to keep up to the modern "high pressure" mode of life in this age soon wears out the strongest system, shatters the nerves and weakens the heart. Thestrain of business, the cares of home and social life, cause terrible suffering from heart and nerve troubles.

The strain on the system causes palpitation of the heart, faint and dizzy spells, smothering and sinking spells, shortness of breath, etc.

The reconstructive power of Milburn's Heart and Nerve Pills is simply marvellous, and those whose health standard is below par, will find a course of them will soon recuperate their health and get back their mental and bodily vigor.

Mr. Oscar Tracy, Postmaster, Tracy Station, N.B., writes:—"Two years ago I was 'all in' as I thought; could not do any work, nor walk any distance. I had taken no medicine, but tried your Milburn's Heart and Nerve Pills, and found such benefit from the first box that I continued taking them. I am sixty years of age, am able to work every day, and feel fine now."

Milburn's Heart and Nerve Pills are 50c. a box at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

MINARD'S "KING OF PAIN" LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

numbered and placed on a long table. With numbered cards and pencils in hand the guests went about attempting to divine the contents of the parcels by feeling them. When the bride was allowed to investigate, the guesses were checked off by the holders of the cards, and a prize was given the most successful.

Mrs. Davis invited a few of Elizabeth's most intimate friends to come at three, bringing a gift and and unhemmend tea towel. Bess had promised to come down at three-thirty to help with some committee work and so was not epectxing to find the merry crowd which awaited her.

She was met at the front door by the daughter of the house who gave her a card telling her to look on the library table for further directions. She found a bundle which was discovered to be some lovely table-linen and in the folds was a note telling her to look in the middle drawer of the dresser in "Mother's" room. And so she went from place to place, finding new treasures until the last one told her to go back to the reception-room and "talk it all over." As she revelled in her pretty things and discussed them with her friends who had followed her on her quest, they hemmed towels for her linen-closet.

The spinster of one party, who had long since changed the name of her "hope -box" to "oGodnes-knows-when chest," announced that she had abandoned all home of matrimony. In view of the fact that she had helped cheerfully to deck sweet girl graduates and countless brides and had bought rings and things for many a first baby, and that she had no possible claim upon the generosity and affection of her friends, she demanded a Consolation Shower. She wanted some of the handiwork of her friends to adorn her bachelor quarters. And that seems to me to be a pretty good plan.

MUSIC IN THE FARM HOME

Music is an elemental part of life —as Gladstone has said, "one of the most forcible intsruments for training the mind and spirit of man," and the advantages of this most charming of arts in home life must be obvious to all. Music has made enormous strides in its evolution as an art, and in its eectffs upon emotions and morals of the nation. The family life of a home, which makes music one of its chief recreations, is affected in many ways, a closer bond of union, of affection being found among its members. Happy the child whose lot is cast in a joyous musical atmosphere. There is thus implanted in his inner being a something which will help him to go through many trials with a brave and an unconquerable hope and faith. If mothers would but understand the digesence between music as a performance and music as a life element, they would not hesitate to give the children every possible chance to acquire a taste for this art which more than all the others stirs the vital forces by which one lives. One of the rst steps infi arousing an apreciation of music is to lead a child to listen. How much stress is laid in educational schemes upon teaching a child to observe, to see; how little upon teaching him to hear. The eye is a rule made dominant and much enjoyment is lost which a trained sense of hearing might bring. The greater part of children's time is spent in elaborate impersonation and make-believe, and the entire basis of their education is acquired through this directly assimiliative faculty. This applies most forcibly to music and gives to those who have the care of children an almost unlimited opportunity for developing musical expression. The charm of music is most far-reaching with the child who is either endowed by nature with the ability to respond to musical influence or has been trained in ear and heart to feel its effects, and in the latter case the sound reproducing machines of the modern day are playing an important part. Their value and efficiency within certain limits cannot be denied. WitWhin recent years wonderful improvements have been made in the method of recording and reproducing, and where the best machines procured and reproductions of the best artists provided, they will be found a very valuable aid in training a child's sense of hearing to an ap-

QUEEN'S UNIVERSITY
KINGSTON, ONTARIO

SCIENCE SUMMER SESSION
FOR
Returned Men

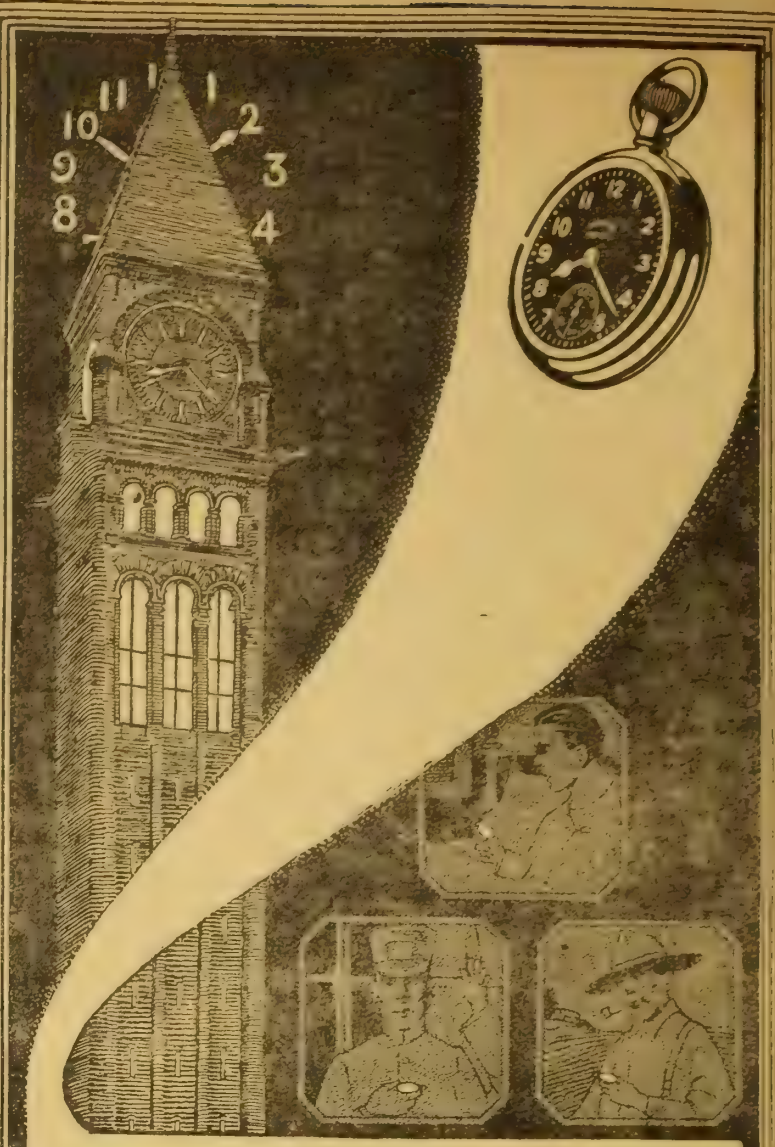
In all four years. Counting as full University Year.

Mining, Chemical, Civil, Mechanical and Electrical Engineering

Preparatory classes for any soldier wishing to study Engineering.

Classes Open April 28th, 1919

For further Information write GEO. Y. CHOWN. 23



Night-Time Time-Pieces

THE movement for the electric clock in the Toronto City Hall was brought over from England 21 years ago. It cost *thousands of dollars*. And it showed time in the dark.

About the same time very wealthy men were carrying in their pockets another kind of a time-in-the-dark time-piece—a watch that sounded the time for them on a tiny gong when they "pressed the button." This striking watch was known as a "repeater" and cost from $150.00 up.

Now you can buy a guaranteed Ingersoll Radiolite, the modern time-in-the-dark time-piece, for as low as $3.00. Instead of the old exasperating striking mechanism to *sound* the time, the Ingersoll Radiolite *glows* the time. Genuine radium in the substance on the figures and hands does it.

It's the watch for up-to-the-minute-men, the leaders, the kind of men who get things before the crowd knows they are a necessity. The retailer has a complete line, including the $3 model pictured above. Now is the time to select. Look for INGERSOLL on the dial.

ROBT. H. INGERSOLL & BRO., 128 Bleury Street, Montreal

Canadian Factory—Canadian Workers

Ingersoll Radiolite
REG. U.S. PAT. OFF.
Tells Time in the Dark

STOVES and Utensils.

FURNACES, for Wood.

FEED-BOILERS, etc.

THE SMITH FOUNDRY COMPANY, Ltd. - Fredericton, N.B.

Kings County, N. B. Representatives, - - - SMITH BROS., Sussex.

preciation of music. The reproductions of the world's best artists are available, and only such should find favor in the home. This phase of the question is deserving of careful consideration, but with cautious discrimination in the selection of machines and records, these forms of music will be found advantageous in training the musical tastes of the young, provided, of course, they are not perimtted to substitute the actual study of music.

SEVERAL PRACTICAL TESTS OF TEXTILES

To protect themselves in purchasing materials women should know a few practical tests to determine the content and value of materials. The following tests may be applied:

1. If water is dropped on cotton and linen goods, the moisture spreads rapidly on linen but will remain unabsorbed on the cotton ror some time. This is not always a sare test as cotton and linen are eoften heavily sizea with dressing, which prevents the water from being absorbed.
2. A much safer test may be made by dropping glycerene on cotton and linen. Linen will become transparent but cotton wil not be affected.
3. Crushing cotton and linen materials in the hands will show the difference in the materials as linen wrinkles more than cotton.
4. Cotton and wool mirtures when moistened, wrinkle more than pure wool materials.
5. Material may be tested by pulling out threads and examining the ends. Cotton fibres are short with fuzzy ends, while linen fibres are long with uneven ends, usually pointed. Wool fibres are short, kinky and stiff; fibres of reeled silk are long, straight and lustrous, while fibres of spun silk are short and easily broken.
6. Sizing may be discovered by rubbing the material between the hands to see if the dressing will come out. Washing will also remove dressing.
7. Each fibre has a characteristic burning test which may be easily distinguished.
   a. Cotton burns quickly with flame.
   b. Linen burns like cotton, but is not as inflammable, as it has less oil in the fibre and less air in the woven cloth.
   c. Wool burns slowly, gives off an odor like burnt feathers and leaves a gummy residue.
   d. Silk burns more slowly and with les odor than wool. It leaves a crisp ash. Silk leaves more ash when it is weighted.

A MOTH MYSTERY

Just why moths should be found in a kitchen pantry shelf, where there seems to be no place for them to harbor, has been a puzzle to me for years. The other day I chanced on what gave a partial solution. Almost every housekeeper has, tucked away in some safe corner of her pantry, a few dry yeast-cakes, which are suposed to keep indefinitely; but on close examination, I found one of them riddled with moth-worms, and several of the moths clinging to the surface. They were so near the color of the yeast cake that a casual glance would never have detected them.

MENDING STOCKINGS

Large holes in the heels and knees of socks and stockings, if mended as follows, will be found to wear longer, look neater, and be more comfortable than if mended in the usual way. Take some strong black net, rub out any stiffness with the hand, cut slightly larger than the hole, and tack neatly on the wrong side; then darn out and into the net on the right side until the hole is well covered. The darning will hardly be seen, and you will be dilghted with the results.

Chocolates- as a Dessert

"PASS the chocolates again, please." They certainly give a finesse to the meal, which is a most decided improvement over the customary heavy puddings or fancy pastries.

Good chocolates are quite the vogue now for the third course and as a tasty, profitable and beneficial dessert, their use is a most sensible custom.

The many occasions on which chocolates can be served with relish and appreciation make them almost a household necessity.

As delicate, delicious desserts—at afternoon tea—as a relish for luncheon—'mid the family circle in quiet hours—or at late suppers—chocolates may be served with excellent taste and good form.

Chocolates are not a luxury. They are energy-producing food and can be eaten in your home with benefit to both old and young.

Canadian-made chocolates have no superiors. Their high standards of quality and wholesomeness are obtained by purity in manufacture and the careful selection of all materials used.

Serve Chocolates as a Dessert.
They are a Splendid Food.

THE CONFECTIONERY AND CHOCOLATE INDUSTRIES OF CANADA

15

HINTS FOR MOTORISTS

by ALBERT L. CLOUGH • *Editor Motor Service Bureau Review of Reviews...*

REALIZING FUEL ECONOMY EXPECTATIONS

Faulty Adjustments Prevent Realization of Claimed Efficiency

Not infrequently it happens that a motorist who purchases a car, fails to obtain from it as high gasoline economy as he has been told in advance that he should secure or so high as other users of cars of the same make and model are known to be achieving. This is always a cause of dissatisfaction and chagrin, for it is natural for every owner to desire to do as well as anyone else in this regard. Some of the chief causes for low fuel economy are comprised among the following: Too rich running adjustment of the carburetor. Means should be provided for temporarily enrichening the mixture, when it is required, but the regular adjustment should be made while the engine is heated and should be a little leaner than that giving maximum pulling power. Lack of tightness of the cylinders, due to ill fitted pistons or rings, imperfectly seating valves and defective gaskets. Mistiming of the valves, including failure to open fully and close promptly and incorrect timing of the spark causing too early or delayed firing. Imperfect vaporization and mixture with air of the fuel supplied, due to faulty manifold construction, lack of heat supplied the intake system or too low cylinder wall temperatures, occasioned by too low cooling water temperature. Internal power waste, due to the negative work incident upon premature ignition, resulting from carbon incrustations of faulty jacketing. Unusual frictional losses, caused by inadequate piston lubrication attributable to oil of improper grade, quality or condition. Abnormal power losses in housings, resulting from lack of lubrication or from the use of unduly viscous lubricants and frictional resistances produced by brake bands which do not fully clear their drums. And by badly aligned road wheels.

It is always possible that the failure of an individual user to obtain from his car a fuel efficiency comparable witth that shown by other identical cars may not be entirely attributable to defects in the particular car and its adjustments, but may be the result of the manner in which the car is maintained and driven. Among operative errors which lead to fuel waste are the following: Driving long distances either at extremely high or at extremely low speeds. Both practices are very wasteful and a gallon of fuel goes a very little way under these conditions, as compared with what it does at 20 or25 miles per hour. Failure to run the spark as much advanced as practicable, resulting in the throwing away of much valuable heat energy. Faiure to change eto a lower gear when the engine has slowed down, under load, to beelow its economical speed, slipping of the clutch, for speed regulating purposes, instead of using the throttle, which results in substantial fuel loss due to engine racing. Racing the engine unnecessarily to warm it up, idling it when it might better be shut down and idling it unnecessarily fast. Failure to take advantage of the car's coasting ability, by throwing the gears into neutral and shutting down the engine on long down grades. Acceelerating with uncalled for rapidity, when starting and when under way and sacrificing expensively attained car momentum, by applying the brakes while still running at high speeed, instead of coasting up to the stopping point. Failure to conserve engine heat by keeping the radiato rshielded, thus increasing the waste of fuel at each start. Failure to always emeploy the leanest fuel mixture upon which the engine can be successfully run, after it is warmed, and carlesseness in leaving the carburetor air supply choked, after starting, longer than it need be. Even with a perfectly conditioned car, operative errors can reduce efuel efficiency pretty low, but combined with a car that is "out of sorts" the result of unskilled driving on fuel efficiency is appalling.

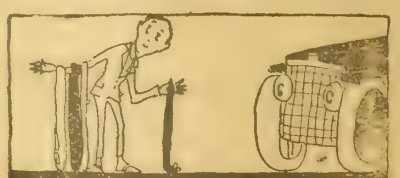
SEE THAT THE IGNITION SWITCH IS "OFF"

One thing about which many motorists are rather careless is the ignition switch. On cars having magneto and upon some cars equipped with the battery system, leaving the ignition switch on, when the engine is stopped, involves no risk except that it renders it easier for an unauthorized person to start the engine, but on all cars fitted with closed curcuit battery ignition and with most systems of open circuit battery ignition, neglect to open the ignition switch whenever the engine stops running, may result in the storage battery being exhausted if the oversight is not soon corrected. In fact, it may result in the injury or destruction of the ignition coil insulation. Automatic devices are used in some ignition systems to open the circuit, in case the switch is left closed, but these sometimes fail to act. In others a peculiar sound gives alarm when this condition exists, but this is not always heard or heeded. On many cars there is no safeguard save the carefulness of the operator. When an engine stalls and is not again started, when a meddlesome person throws the switch from off to on or when the switch is accidentally thrown into an open position, especially when a car is to be left idle for a long time, the battery is likely to bt discharged so that the engine cannot again be started. The only safe rule is always to see that the switch is off and locked in that position, when the engine is not running.

INNER TUBE INQUIRY

S. H. B. writes: I have ea number of very old inner tubes. How can I tell whether or not it pays to keep them?

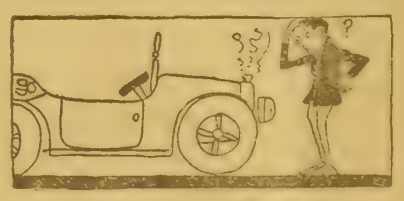
Answer: As long as a tube is capable of holding air and is not stretched so badly as t oform folds and become pinched in service, it may as well be kept and the utmost possible service obtained from it. Very little strength is required in an inner tube and an old or thin one may be practicaly as serviceable as a new one. Air tightness is an inner tube's only important qualification.



EFFECT OF BOILING RADIATOR

E. H. B. writes: Does it harm an engine ein any way when the water boils in the radiator and around the cylinders?

Answer: Boiling of the liquid in the cooling system cannot, in itself, do any harm to an engine, but the boiling may be an indication of something wrong with an engine, which may cause injury to it, such as an insufficient cylinder lubrication or a failing supply of water, which soon may entirely disappear and permit serious overheating to take place. Any unaccustomed tendency to boiling should be at once einvestigated.



REPAIRING A SCORED CYLINDER

W. S. asks: If a cylinder has been scored, so that a piston cannot be fitted tightl yin it, is there any possible remedy except reboring it and the rest of the cylinders?

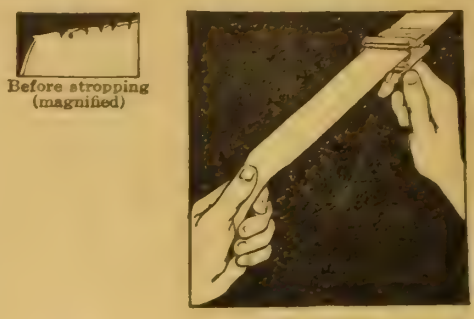
Answer: There are several processes in use for repairing "scorees" without enlarging the cylinder bore, which depend upon replacing the metal, that has been worn away, by means of alloy electrically welded in place or deposited electrolyitically. After this is done, the repaired portion is ground true with the rest of the bore. If acylinder is all right, with the exception of a definite score, such as made by a displaced wrist pin, such a repair as this, if successful, permits the use of the old piston and obviates the necessity of doing anything to the rest of the cylinders.

CHARGING BATTERY FROM FARM LIGHTING PLANT

W. L. writes: A neighbor of mine has one of the gasoline engine driven farm lighting plants and it occured to me that I might charge my auto battery from it and save taking it to town. If this can be done, please explain the method.

Answer: As plants of this kind generate direct current and as direct current is necessary for your purpose, you can readily charge your battery from this source. If this is a 3 volt outfit, each 40 watt lamp passes about 1 1-3 amperes and 5 of these will pass between 6 and 7 amperes. Arrange the

No edge without stropping



As the farmer becomes more of a business man, he finds a good personal appearance counts greatly in his favor in his dealing with other men.

He realizes that to have a first-class razor, and to enjoy head-barber shaves a razor blade must be stropped. Now, satisfactory stropping can't be done in the old way unless a man has acquired the knack. Not everyone can, and that's why men in increasing numbers are turning to the AutoStrop Razor.

Because of its self-stropping feature, a man can easily keep his AutoStrop Razor sharp. He is never at a loss for a keen blade, for he always has one. This and the fact that it is not taken apart for stropping or cleaning has led thousands of shavers everywhere to speak highly of the AutoStrop Razor to their friends.

If you want to see how enthusiastic men can really become about their AutoStrop Razors, just mention the matter the next time you're in town. The result may surprise you. Any dealer will sell you an AutoStrop Razor, strop and 12 blades complete for $5.00, with the understanding that if it doesn't please you, your money will be handed back without argument.

AUTOSTROP SAFETY RAZOR CO., LIMITED
AutoStrop Building, Toronto, Canada

AutoStrop Safety Razor

circuit so that the current that supplies these lamps also flows through your battery, making sure that current is passing in the right direction. The following test can be used: Dip the wires coming from the lamps and that from the other side of the circuit into a tumbler or water, containing a little salt. The wire giving off the more gas bubbles should be connected to the negative or (—) post of the battery. The wiring is simple; from one side of the supply circuit to one side of the bank of lamps, from the other side of the lamp bank to one side of the battery and from the other battery terminal to the other side of the supply circuit. There should be a switch included.

DERANGEMENTS THAT MENACE LIFE AND LIMB

The Front Wheels And Their Connections Bear Great Responsibilities

There are a great many derangements of car mechanism, which may occur at almost any time and leave a car and its passengers stranded upon the highway, inconvenienced, but in no way injured but, on the other hand, there are a few derangements or breakages, the occurrence of which to a car in raipd motion, is more than likely seriously to injure the passengers, to say nothing of wrecking the car. Every motorist should realize what these derangements are in order to be upon his guard against them. They are as follows: (1) Any derangement of the steering mechanism resulting in loss of direction control. (2) The loss of a wheel, causing the car to drop to the road upon one side. (3) The detachment of the forward end of the drive shaft, torque rod or distance rod and its consequent falling and catching the road, tending to overturn the car. Accidents due to all these causes prove serious in much more than direct proportion to the car speed at which they occur. (1) The breakage or disconnection of any part concerned in the steering function, resulting in the car's running wild or the sudden binding or locking of some part of the steering gear so that the car's course cannot be altered by the operator, are the two kinds of derangement. The first is the more common and is most likely to be occasioned by the accidental disengaging of the ends of the drag link (steering gear connecting rod). The greatest care should be taken that the ends of this are kept most securely fastened and indeed all the fastening devices in the steering gear should frequently be inspected. Perhaps the worst feature about a steering gear derangement is that the driver usually continues to try to gain control of car direction by the wheel after this has become impossible and fails to use the brakes in time to avert an accident. (2) The loss of a rear wheel is usually not serious under ordinary conditions, but the coming off of a front wheel is one of the most dangerous happenings conceivable. This may occur from the breakage of a wheel bearing, the loosening of locking devices or the fracture of the spindles that carry the front wheels. Extreme care as to the condition of bearings and the security of locking devices, will do much to minimize these dangers. (3) Some cars have means for catching such parts before they can touch the ground. Bad accidents have happened from this cause, but they are much less common than those due to steering gear and front wheel derangements.

TUNGSTEN BREAKER POINTS

C. J. P. writes: The contact points in the breaker-box of the car that I now own, are always black in appearance, although they operate all right. I have always been told that the points should be bright, in order to give good results. How about this?

Answer: These points, if used in connection with a battery system on a car of rather recent date are doubtless of tungsten. Points of this metal are gray and not white and glaze over with a dark film which however seems not to prevent their successful operation. In fact, many makers of ignition system, employing tungsten points, recommend that nothing be done to the points but that when they give serious trouble or are largely worn away,

that they simply be replaced. Tungsten is cheap enough so that this is not an unreasonable suggestion. One thing is certain, it is not incumbent upon the motorist to keep tungsten breaker points bright as if they were platinum (of which we shall probably see but few in time to come.)

TESTING PLUGS UNDER WORKING CONDITIONS

J. A. M. asks: Is there any way of testing a spark-plug to see how it will operate under working conditions, with compression acting upon it?

Answer: A plug tester can be bought or made, consisting of an air tight chamber made of pipe fittings, with a glass window, in which the plug to be tested is screwed. Air pressure is then pumped up in the chamber with a tire pump and the action of the spark can then be watched under compression. With most plugs a piece of mica can be placed between the points, of such size and so placed that the spark must pass around it to get from

one point to another. In the length of the spark path is made three-eights or seven-sixteenths-inch in free air, its resistance will equal that of the normal spark gap under compression and if the plug sparks throhgh this elongated gap its insulation is probably all right.

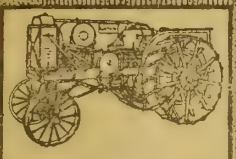
DRYING OUT DRAINED ENGINE

J. A. M. writes: I keep my car in a cold garage and draw off the cooling water every night. When it is brought in hot, is it necessary to run the engine, after lettng out the water, long enough to evaporate whatever liquid may remain in the system?

Answer: We do not consider it necessary or advisable to run the engine until the insides of the jackets are fully dried out. Moisture merely adhering to the inside walls of the cooling system can give no trouble from

freezing, but pockets of water anywhere in the system may do so. Running the engine a while, usually shakes out what little water fails to run out through the drain cocks or brings it into the pump, from which it is expelled. If, however, you wish to run the engine to dry it out pretty thoroughly, you can safely operate it until the cylinder heads become too hot to touch with the hand for any length of time.

A Correct Lubricant for every Farm Machine



For Gasoline Engines, Tractor, Auto or Stationary
POLARINE OIL
STANDARD GAS ENGINE OIL
For Kerosene Engines Tractor or Stationary
POLARINE OIL HEAVY
POLARINE OIL A
IMPERIAL KEROSENE TRACTOR OIL
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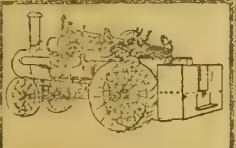
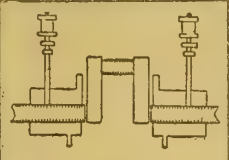
(Recommended by many tractor manufacturers)

For Open Bearings of Farm Machinery
PRAIRIE HARVESTER OIL
—very heavy body, resists cold, won't thin out with moisture
ELDORADO CASTOR OIL
—a thick oil for worn and loose bearings



For Steam Cylinder Lubrication, whether Tractor or Stationary Type
CAPITOL CYLINDER OIL
—the standard product for steam cylinder lubrication



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For Grease Cup Lubrication of Bearings, a clean solidified oil high melting point.

IMPERIAL OIL SERVICE
Talk over your lubrication needs with the *Imperial Oil man*. There is an *Imperial Oil man* near you and he is there for that very thing. You will find him well posted on farm lubrication and glad to be of service to you.

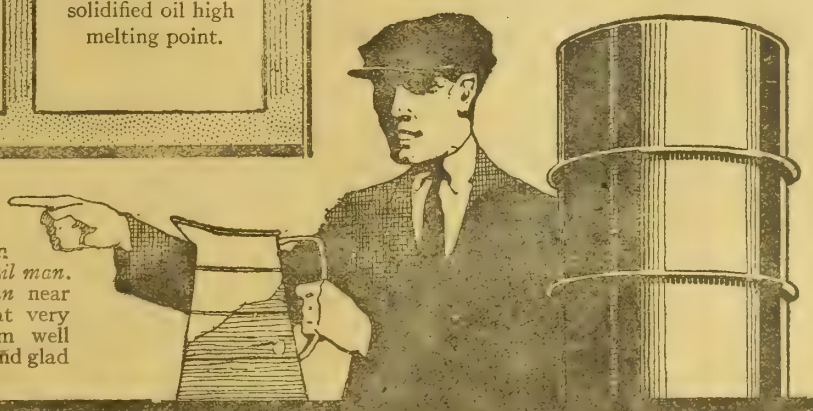
Proper Lubrication Increases Farm Profits.

Correctly lubricated farm machines do last longer. Correctly lubricated engines, trucks, tractors and automobiles not only last longer but they will do more work or go more miles at less fuel expense than those poorly lubricated.

Selecting Imperial Lubricants, the high qualities of which are recognized everywhere, is a step in the right direction. The next thing is to use the proper lubricant for each machine and each purpose.

There is no all-round lubricant. There is an Imperial Lubricant made especially for each need. A few recommendations are mentioned in the panels at the left.

All Imperial Lubricants can be promptly supplied in a size suited to your needs. They come in half gallon, one gallon and and four gallon sealed cans, in half barrels and barrels.



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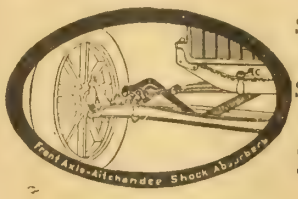
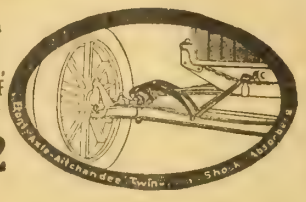
"Make Rough Roads Smooth"

Easy to attach. No holes to bore. Weight, 20 lbs. per set. This is the original cantilever shock absorber, Canadian Patent 172892. No other can have the same efficiency or give the same easy riding and freedom from jolts, jars and side-sway.



Single Arm Style, Set of Four **$10**



Twin Arm Style, Set of Four **$12**

Make your Ford ride like a limousine. Over 200,000 in use to-day. Remit by Money Order or Postal Note. Put a set on and try them for 30 days. Money back if you are not satisfied.

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UNDERCHARGING OR OVER-CHARGING—WHICH?

Look Out for the Former in Winter and the Latter in Summer

So long as the generator keeps the battery fully charged, but still does not subject it to serious overcharging, an ideal condition prevails but, like most other ideal situations, this is seldom realized for any great length of time. Despite all the precautions taken, the average battery is either being undercharged or overcharged a great part of the time that its car is in service, and every motorist ought to know how to tell which of these two evils his battery is laboring under, at any given time, so that he may be able to act inteligently in bringing about more favorable conditions. Here are a few suggestions. A battery is undercharged in proportion as the density of the electrolyte in its cells fall below 1280 and toward 1150 and it is obviously undercharged when the lights suplied by it burn below their normal brilliancy and when the starter motor operates less actively than it should. On the other hand, a battery is being overcharged when it becomes decidedly hot, after a long trip has been made when an unusual amount of water is required to keep the cells filled and when the lamps burn too brightly and fail early. Undercharging is to be avoided for the obvious reason that it results in poor starting and lighting service, but also because it leads finaly to sulphatation of battery plates. Overcharging is to be avoided, because if persistently practiced, it results in the destruction of the battery (statements to contrary notwithstanding), it calls for unnecessary work in suplying water, wastes some fuel, shortens the life of lamps and causes needless wear and tear on ignition aparatus. Assuming there is nothing wrong with the battery or generator equipment, undercharging can be reduced by having the generator output increased by practicing economy in the use of lights; using the starter only after carburation and ignition conditions have been adjusted to insure prompt response from the engine; by running in second, when very low car speed is required, and providing auxiliary charging current from a rectifier or other outside source. Overcharging can be lessened by having the generator's charging rate reduced, but the most effective method is the provision of a switch, by means of which the generator can be stopped from furnishing charging current, when it is not needed—as on long daylight trips. Many manufacturers advise against such charging cut-offs, lest the careless operator leave the generator inactive when charging is necessary. However, the device, if used intelligently, is of great value in regulating the state of the battery.

INADJUSTABLE CARBURETOR

J. L. writes: I have come into possession of a 1911 car. There seems to be nothing wrong about it, but yet has hardly any power, running weakly and spitting back into the carburetor. Someone has suggested that the carburetor needs adjustment, but there is absolutely no means for adjusting the gasoline supply that I or the local garage man can discover. What is to be done in a case like this?

Answer: There have been many

cars built with inadjustable carburetors, the idea of the manufacturers evidently being that such carburetors could not be put into an inoperative condition by careless operators. This construction, however, prevents a carburetor from being conveniently made to handle present-day gasoline, as can one provided with adjustments. Your engine is not getting gasoline enough. Possibly you can obtain a larger jet from the makers of this carburetor, but more likely you will have to drill out the gasoline spraying passage slightly to give it somewhat greater capacity. By doing this carefully, you should obtain good results. Try a drill size very slightly larger than the present passage, and, if this does not prove sufficient, try the next larger size.

CUTTING LOUVRES IN HOOD

C. Writes: I have had a good deal of trouble from water boiling in the radiator of my car. There are no slits in the sides of my car's hood, as there are in so many others and I have wondered if having such slits cut would

result in any improvement in the cooling effect.

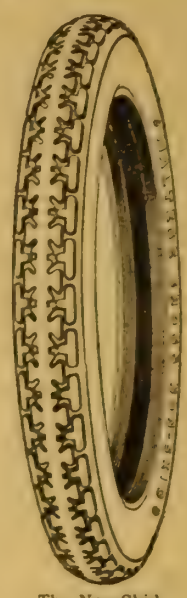
Answer: We hardly think so. These slits or louvres are not depended upon to let out the hot air; the space under the car floor being supposed to be of ample area to give egress to the air current, without serious friction. Louvres are used to improve the looks of the hoods and possibly to reduce the weight sligtly not to furnish added cooling effect. Perhaps you can increase the effect of your fan, make your radiator more active eby cleaning it out thoroughly, or do something that will stop this overheating.

MALTESE CROSS TIRES

MORE Comfort in motoring depends upon good tires than upon any other single item of equipment.

Maltese Cross Tires are an assurance of maximum comfort, satisfaction and mileage.

Sold by Dealers all over the Dominion.



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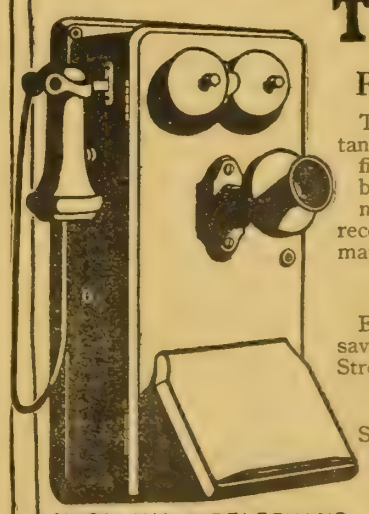
STROMBERG-CARLSON TELEPHONES



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The ideal instruments for local or long distance work. Equipped with the big powerful five bar generators which always ring every bell on the line every time, and the remarkably efficient new transmitters and receivers which carry the voice distinctly no matter what the distance or weather.

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Equipped with lightning arresters, battery savers and many new features that make Stromberg the real telephone of service.

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Shows you how to install and take care of your telephones—tells how to organize a party line among your neighbors and explains just how to get started. Gives valuable information about all Stromberg Telephones and shows how our experience gained in building over 2,500,000 telephones is of great importance to you.

Send for this free book and put your telephone problems up to our engineers—we will plan your system and furnish estimates without cost.

Stocks carried at Toronto, Regina and Seattle

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CAUSE OF RATTLING NOISE

H. C. asks: What is the most likely source of an annoying rattling at the forward end of my car, which occurs

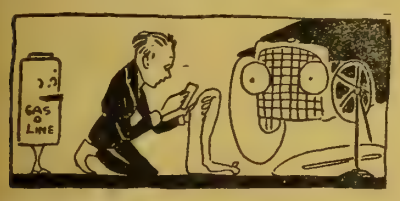
when driving over car tracks or rough places in the road?

Answer: Most likely it is in the steering gear. Looseness at the ends of the tie-rod, which connects the two wheels or at the ends of the rod which connects the steering device with one wheel, lost motion at the steering knuckles or loose bearing adjustment of the front wheels may cause this. Looseness of the hood upon its supports or lack of tightness at the front springs may produce such a noise.

TUBE PATCHING OUTFIT

S. P. T. asks: Everything considered, what is the best outfit for use in mending inner tubes, that can be carried upon a car?

Answer: We presume that the little portable vulcanizers would be called the best. These make use of prepared patches, each of which carries its own fuel, sufficient to furnish the heat required to vulcanize it. A vulcanized



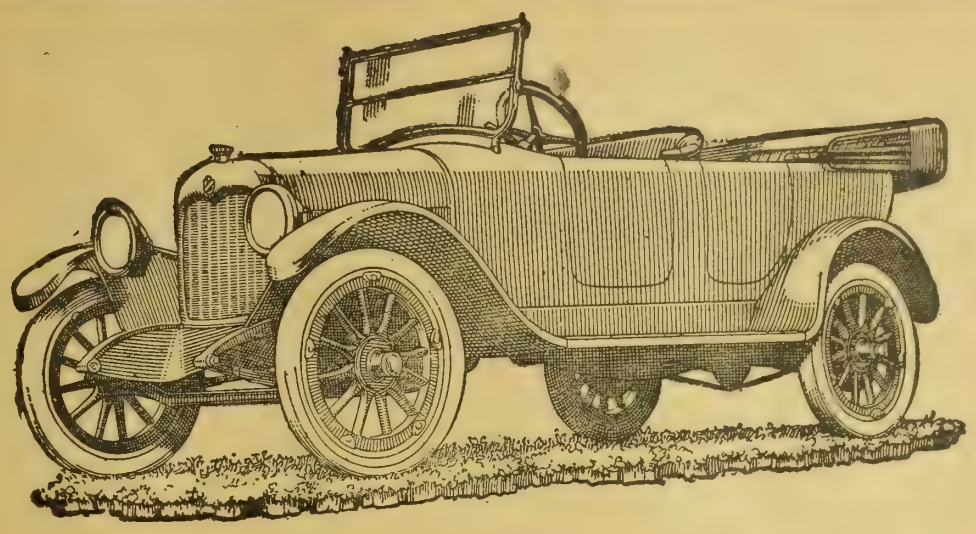
tube repair can be quickly made in this manner. Patches affixed merely by cement and not vulcanized give good results and such a repair is the quickest. These prepared patches, already cemented and requiring only to be moistened with gasoline and applied, are to be had of all supply dealers.

REPLACING SPILLED ELECTROLYTE

P. A. writes: I accidentally left out the filling plug of a cell of my storage battery and later found that so much of the acid had spilled that I could not see the top of the liquid. The lost liquid was replaced with distilled water, as the directions contained a warning neve to put anything else in

the cells. Since doing this, the cell does not test up to strength. How can I make it do so?

Answer: The caution against putting anything but water into cells applies only to cases in which water only and not acid has escaped. In your case, the acid electrolyite had escaped, in part, and putting in pure water diluted the remainder, so that its gravity was necessarily below normal. We suggest that you draw the liquid entirely out of this cell by means of a rubber tube on the end of the battery syringe, make up new electrolyte and fill the cell with it. You better test the gravity of the liquid in each of the other cells, average these readings and bring the new electrolyte to this value before putting it in, being sure ethat temperature differences are taken care of. Use P. C. sulphuric acid and distilled water in making the mixture and pour the former into the latter gradually, to avoid heating effects.



The Maxwell is a sensible buy for farmers—Why?

FARMERS more than any other class buy the Maxwell. They buy it for many reasons. But all these reasons come down to the one fact—the Maxwell fits the farmers' needs better than any other car.

It is a big, roomy, comfortable car. A family car. It is light enough to give the utmost economy in tires and gasoline. It is strong enough to stand country road driving. It is powerful enough for any rough going.

And it is completely equipped. No "extras" to buy.

But, above all, the Maxwell is a dependable car. Five years ago the chassis was designed—for rugged simplicity. Then Maxwell after Maxwell was built on this original plan—over 300,000 of them.

This chassis has been perfected, of course; but not changed. It was *right* five years ago. It is *right* to-day. Over 1000 refinements have been made. To-day's Maxwell is the best car our engineers *could* produce for farm service.

And this dependable chassis has been robed in new beauty. 24 refinements in appearance in this year's model make it a car you'll be proud to own. Beautifully upholstered. Distinctive in style.

Not the least of the sensible reasons for buying the Maxwell, for getting Maxwell value, is Maxwell Service. There's a Maxwell dealer near you—anywhere in Canada.

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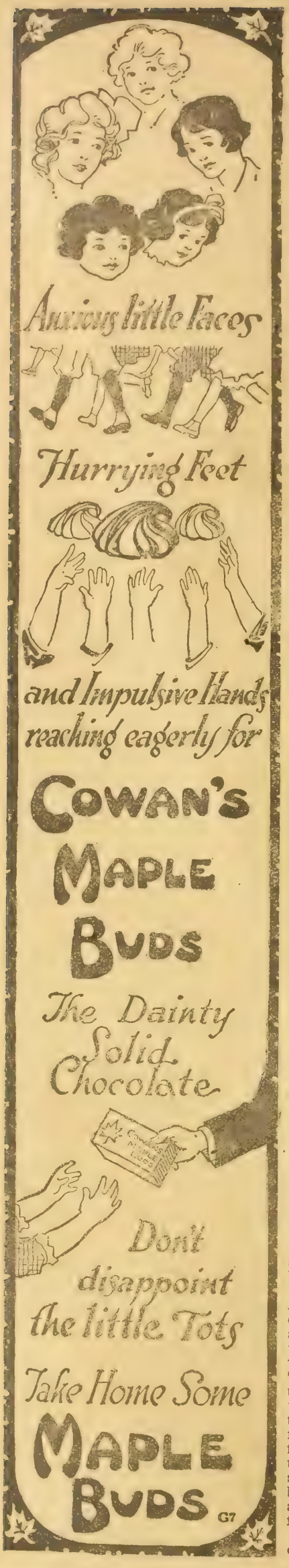
Maxwell

More miles per gallon
More miles on tires

MAXWELL MOTOR CO. OF CANADA, Limited, WINDSOR, Ont.

Don't spare the ax and saw in the old orchard when the trees are dying and blowing over. Very often an orchard with care can be made productive. Save the old orchards, as many of the old reliable varieties are very scarce.

When the top of an apple tree is heavily pruned the greatest increase wil loccur in the growth and vigor of al lother parts of the tree. The cutting away of the growth will send new strength into the weaker parts where most needed.



MARITIME DAIRY SCHOOL

(Continued from page 863

previous to the war and that the late Dr. James, then Dominion Agricultural Commissioner was strong in the presentation of the advantages of the same, and while the idea was favourably discussed by the members of the Governments of each Province it required considerable educational work to present the economic advantages of the same to a large percentage of the people of the different Provinces. He also suggested that at that time Dr. James was favourable to a substantial grant from Ottawa for the same as an interprovincial organization.

The question was discussed at length by all the committees and resolutions were passed and representatives appointed to make the necessary investigations with the authorities at Ottawa for their sanction and support before it would be presented for the consideration and support of the Governments of the three Provinces and a sub-committee was appointed to carry out this part of their work and to call the whole committee together again when a definite report was got from Ottawa.

In the meantime Mr. Coleman acts as permanent Chairman and Mr. MacKay as Secretary.

It is to be hoped that the committee meet with satisfactory prospects in their undertaking as there is no branch of farming that the Maritime Provinces are more favourably adapted to than Dairying, and the business cannot develop much faster without just such an institution to impart and spread the necessary education connected with it and to properly train the men to act as leaders in all the diffrent branches of the work.

MAKING SUGAR FROM SUGAR BEETS.

We publish herewith an article on making sugar from sugar beets and suggest that all interested in making sugar at home, save this copy for future reference, as it may be convenient to have handy directions for making sugar from the beets grown in one's own garden. We were a little credulous at first about making sugar at home, but have the assurance of some of the best chemists of the country that it is entirely feasible.

So far as our information goes this syrup that results from the home process of manufacturing, contains a small suantity of betaine, a chemical found in sugar beets. This chemical is not poisonous but gives a characteristic taste or flavor to the syrup which makes it different from pure sugar syrup. However, this syrup is excellent for cooking which in these days of scarcity of all kinds of sweetening will be a welcome addition to the family stores. Sugar beets may be grown wherever garden beets will thrive. But in buying seed be careful to get the seed of the genuine sugar beet, not seed of the so-called sugar beet grown for stock feeding. The genuine sugar beet only is suitale for sugar making. Seed of it may be obtained from any reliable seed house. Two varieties that have been recommended to us by a Canadian seed house, are Klein Wanzelbener and Vilmorin.

The United States Department of Agriculture issued recently a bulletin describing a method of making sugar at home from ordinary sugar beets that may be grown in any locality where soil and climate are suitable. The following information in the matter is taken from the bulletin in question. Readers desirous of making their own syrup next fall should carefully lay aside these instructions for future reference, as it is claimed by the experts of the department that a satsfactory syrup for home use may be made from beets grown on the farm and with such equipment as may be found in any home.

The first step in making beet syrup consists in topping and cleaning the roots. The crowns should be cut off at the point of the lowest leaf scar. The reason for this is that the crown or upper part of the beet contains a large part of the salts taken from the soil in the process of growth. It is desirable to have the syrup as free as possible from these mineral salts, which, if present in too large quantities, would render the syrup unpalatable.

In cleaning the roots, they may be placed in a tub or other suitable receptacle and covered with cool water, to loosen teh dirt and to make the roots more crisp. After soaking for a few minutes, until the dirt is loosened, they should be thoroughly scrubbed. A coarse brush with stiff bristles or wire is useful in this work. After the roots are thoroughly washed they should be cut into thin slices. A 3-bladed kraut cutter securely fastened on the top of a barrel, has been found very satisfactory. The upper head of the barrel should be removed so that the beet slices will fall directly into the barrel. If a kraut cutter is not at hand, any slicing device, the simplest of which is a butcher knife, will be satisfactory. The slices should be very thin. The thinner the slices the more rapidly the sugar is extracted.

A bushel of beets will make approximately 2 bushels of slices, which should be placed in a barrel and covered at once with hot water. About 10 gallons of water will be required to cover them. An excess of water should be avoided, since it would increase the amount of evaporation required to reduce the solution to the desired consistency. If boiling water is used, the temperature of the slices will reduce the temperature of the water to about the proper degree, from 158 to 176 degrees Fah., for the extraction of the sugar. The barrel should be covered with several thicknesses of canvas to hold the heat. The sliced beets should be permitted to soak for about 60 minutes, and the barrel

Greasy sputterings and drippings!

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Gold Dust takes care of cut glass and silver. But Gold Dust likes humble tasks, too.

You know there is *only one* Gold Dust. So, if you want Gold Dust's "soapy," helpful cleansing, be sure it *is* Gold Dust you buy.

THE N.K. FAIRBANK COMPANY LIMITED MONTREAL

GOLD DUST

The Busy Cleaner

MADE IN CANADA

should be agitated from time to time without uncovering it.

The water should now be drawn off and strained through several thicknesses of cheesecloth. No pressing is required to remove the juice from the beet. If the barrel is provided with a faucet near the bottom for the purpose of drawing off the liquid, it will be found convenient. The soaking does not remove all the sugar from the beet slices, but by far the larger part of it is extracted if the slices are sufficiently thin and the water is of the proper temperature. The resulting liquid is of a light brown color, with a sweetish bitter taste. The refuse beet slices are a valuable feed for chickens, hogs, and other live stock.

The juice may be placed in a kettle or other convenient receptacle, where it should be heated slowly until it has evaporated to the proper consistency. It should be noted that evaporation depends upon the temperature, the surface of the liquid exposed, and the condition of the air above the liquid. In experiments made by the experts of the department a 30-gallon copper kettle was used. Slow boiling is important in making beet syrup, and several hours will be required to complete the evaporating process. This may be done on the kitchen stove, or a kettle may be suspended in the open and fire should be maintained sufficiently hot to keep the liquid boiling until the proper amount of evaporation has taken place to produce the desired consistency of syrup. Some people like a thin syrup, while others prefer a thick product. In boiling the juice care should be taken to avoid burning. A little experience will enable one to accomplish the boiling without scorching the syrup.

While the boiling is progressing, a scum will rise on the surface of the liquid; ths should be removed carefully by means of a skimmer. An old-fashioned milk-skimmer, or a basin with or without small holes in the bottom, will accomplish the desired result. The skimmer should, for convenience, be provided with a suitable handle. A small straight or curved stick of proper length, split at one end and slipped over the edge of the skimmer, will serve the purpose. The object in skimming is to remove the scum as completely as possible without wasting any of the liquid. This operation removes the strong, beet-like flavor and leaves a wholesome and palatable product. The removal of the scum tends also to keep the liquid from boiling over. As soon as the syrup has reached the desired consistency and has been skimmed carefully it may be placed in cans or bottles for future use. It should be canned or pottled while hot and tightly sealed or corked to prevent molding.

The syrup produced from beets is dark in color. This would be objectionable if the product were placed on the market, but for home use it probably would not be regarded as serious, in view of the quality of the product and the simplicity of the process. Any method of bleaching or otherwise removing the dark color would require considerable skill and some outlay of money. The desire being to produce a palatable and nutritious article of food which can be made in almost any home, it is the aim to avoid all technical and expensive methods. The flavor of the syrup is pleasant. It contains the pure juice of the beet root and is a wholesome and nutritious food, which to a certain degree should be helpful in reducing the sugar bill.

Beet syrup may be used for all purposes for which other syrups or molasses would be employed, especially for table use; for example, on buckwheat cakes, in making dark-colored cake, or in preparing certain kinds of home-made candy. If the evaporation is carried far enough and the syrup is allowed to stand, a dark sugar will settle out. This sugar will be found very satisfactory for home use in cases where refined sugar is not necessary, such as in making pies or dark-colored cake.

Minard's Liniment Co., Limited.

Dear Sirs,—Your MINARD'S LINIMENT is our remedy for sore throat, colds and all ordinary ailments.

It never fails to relieve and cure promptly.

CHAS. WHOOTEN.
Port Mulgrave.

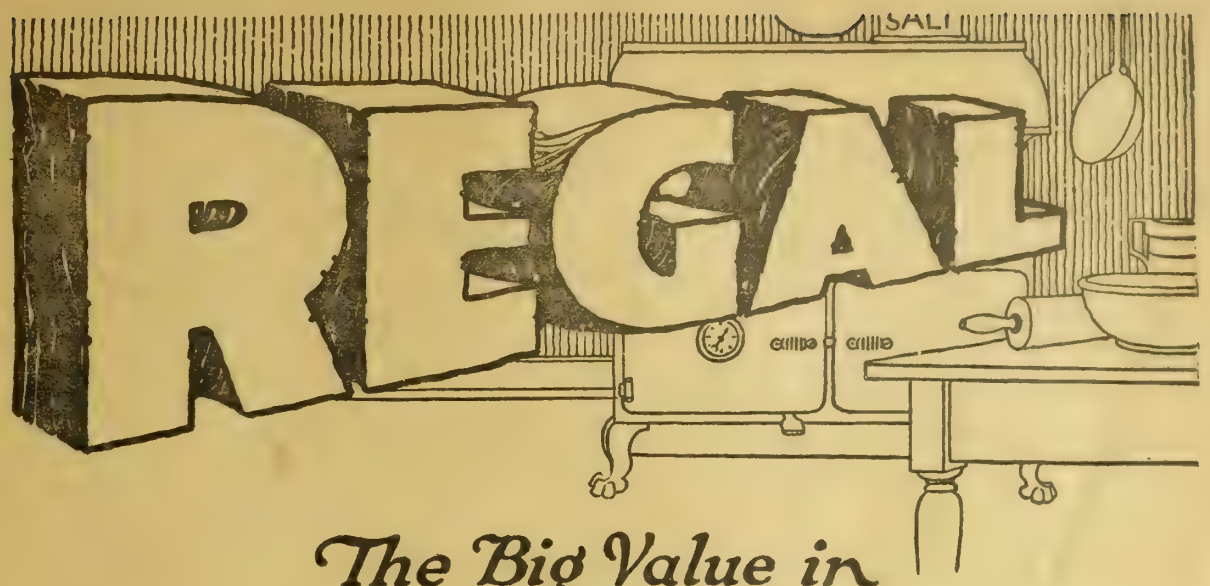
GRAIN TROUBLES

Oftentimes seed treatment is not practiced because of a more or less prevalent notion among some farmers that seed injury is quite likely to result after treatment. In fact, this notion may be exerting more influence in preventing the spread of recommended seed disinfection methods, than the actual work connected with the treatment or the cost of formaldehyde, which amounts to about two (2) cents an acre.

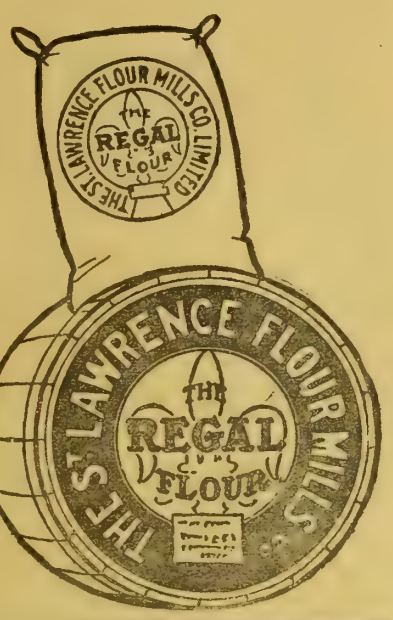
When treating seed, it is well to have in mind the following points: (1) Do not dry too slowly after treating as this may cause injury to germination. (2) In case spring grain is treated during cold weather, best results will be obtained by seeding it promptly, because of the danger of freezing the moist grain. (3) Poor stands, often claimed to be due to seed injury, may in reality be due to the use of insufficient seed, or the use of seed showing a low germination test in the first place. (4) Treated grain is swollen and the rate of seeding should be increased accordingly. (5) Seed disinfection (formaldehyde) increases the yield by eliminating certain other diseases, stripe disease of barley for example. (6) Weather condtions cannot be foreseen, and the only safe course for the farmer to pursue is to treat every year. Smuts found on the following grains may be controlled by seed treatment: wheat, oats, barley, rye, millet, and sorghum. —James Godkin, Colorado Agricultural College, Fort Collins, Colorado.

Insist on the best seed. Buy tested seed only. How otherwise is it possible to be sure of its quality? How otherwise can one be certain of its purity and germination? Don't destroy the effects of your labor in preparing the soil by planting inferior seed. If you insist that your dealer sell you tested seed only, and that they be tagged, he will in turn insist upon better seed from the wholesaler and growers. The demands of the purchaser are readily heeded by the merchant.

"To be progressive and successful every man must be to some extent an experimenter. To inquire; to observe; to measure; to compare; to weigh in the balance and decide; that is a man's job. Each time a man does it he gains in strength of character, and in power of achievement."



The Big Value in
FLOUR



IN THE KITCHEN, the big event is baking day. And the important thing on baking day is to use "REGAL"—the ideal flour for bread. "REGAL" means bread of uniform texture, lasting freshness and wholesome qualities.

THE ST. LAWRENCE FLOUR MILLS CO.
LIMITED
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VOL-PEEK MENDS
Leaks and Holes in Kitchen Utensils, Graniteware, Aluminum, Enamelledware, Tinware, etc., quickly repaired. Easy to use—just like putty. Hardens in two minutes. Each mend only ½c. 15 cts. package. At your dealer or postpaid by
Vol-Peek Mfg. Co., P. O. Box 2024, Montreal, Can.
Agents Wanted.

SOME PECULIARITIES OF COWS

(Continued from page 869)

later in the progress of milking but its formation always indicates a lack of complete and perfect process in manufacture. The cells which remain attached to the basement membrane go into the business of manufacturing fat and other normal constituents of milk.

Production of Casein, Fat and Sugar

The production of the casein, fat, sugar, and other ingredients of cow's milk is an original manufacturing process and not merely filtration from the brood, for there is no milk sugar, no butterfat, and no casein in the cow's blood when it reaches the udder. The milk manufacturing cells simply take certain elements from the blood and put these elements together in such a way as t oform the fat, the casein, the sugar, etc.

There are two processes in milk formation. First: Milk cells, lining the alveoli, or tiny milk cavities, or portions of those cells, undego fatty changes. . The cell manufactures the fat which accumulates in the free end of the cell. The free end of the cell changes into a tiny fat globule and separates from the portion in contact with the basement membrane. The portion thus left we will call the parent cell. This parent cell then lengthens again and develops another fat cell, at the free end, which in turn separates from the parent cell. You will thus see that this butterfat production is a process of moulting, or shedding; just as the hair sacs produce and shed hair, The fat globules escape into tiny cavities within the udder and thence to the milk cistern at the base of the teats.

Influences Affecting Milk Secretion

The production of milk is clearly a manufacturing process. Excess of fat in the diet does not materially increase fat in the milk under normal conditions. Material used in milk formation comes directly from the lymph fluid contained in the little spaces surrounding the clusters of milk cells. The lymph receives raw material from the blood and simply passes it on to the milk forming cells over the fence, i. e., on the other side of the basement membrance.

The quantity and quality of milk depends, first of all, upon hereditary peculiarities of the indivfdual cow. After this it depends upon food. It depends upon how long the cow has been milking, upon how long she has been carrying her calf, upon the condition of her nervous system, and to a very great extent upon the quantity of blood passing through the udder.

After the first pregnancy occurrs the milk glands are stimulated to active growth and the little bottle shaped cavities are developed and lined by milk forming cells. Each cell is a little flattened oval shaped body much too small to be seen with the naked eye. Late in the period of pregnancy there develops a scanty and imperfect secrteion of fluid which later becomes the colostrum, or first milk drawn after delivery.

Nervous System Control

It is very evident to the practical dairyman that there must be some nervous relation between the cow's nervous system and her process of milk secretion. You all know that nervous disturbances of any kind are apt to check the milk flow. A crowd of strangers passing through a stable, where high type and highly organized dairy cows are kept. sudden noises, rough handing, all check the process of milk formation. The only possible connection betweeen the noise outside the animal body and the process of milk manufacture inside her body is by way of the nervous system.

A bond of connection and intimate sympathy between the udder and the womb is also found in the common blood which flows through both organs.

Soon after the foetus is removed from a mother's body, growth and development of the udder stops, and active milk secretion begins. This general statement holds true again in the reverse condition when a second pregnancy occurs and a new foetus is developing within the mother's body. There is a marked tendency to the development of udder structure in preparation for another period of milk production and a tendency to check milk secretion.

One futher interesting point may perhaps be mentioned in this study of condition affecting milk formation. Pressure in the milk ducts and milk cavities within the udder checks the manufacturing process in the individual milk cells. As soon as milk contained in the udder—and therefore pressure started upon the se cells—is removed, then secretion starts again; in other words, the pressure brake is released and the wheels begin to revolve again. The act of emptying the cow's udder and merely relieving pressure upon the milk forming cells therefore amounts to a natural stimulus of milk cell activity.

Summary

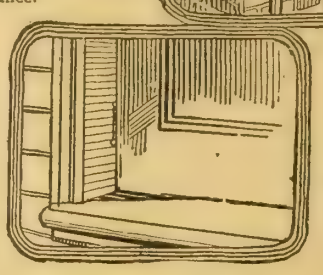
The production of milk is a process of original manufacture, not a mere filtratoin from the blood. There is no butterfat or casein or milk sugar in the blood which comes to the udder.

I have endeavored to show the process of forming the fat globule in the elongation and rupture of the milk forming cells lining the alveoli and by this rupture furnishing the fat globule. The other milk materials are alos formed from the lymph fluid which surrounds the alveoli.

The influences affecting milk secretions are hereditary, food, period of milking, stage of pregnancy, condition of the nervous system and especially the quantity of blood passing through the udder. I have endeavored to explain a very interesting relation between the unborn young and the development and preparation of the udder for the next process of milking, also the checking effect which some chemical substance within the blood of the unborn young animal has upon actual milk formation. When the young animal is born and therefore separated from the mothre's body these relations cease, and development and preparation of the udder ceases. At the same time ethe chemical substance which restrains milk formation is removed, the brake is released and the active secretion of milk is begun. Finally pressure of milk within the udder checks secretion; removal of this pressure stimulates or at least permits secretion.

The amount of milk produced depends upon the amount of blood flowing through the udder. The amount of blood depends upon the size of the blood vessels, and size of blood vessel is controlled by the nervous system. The composition of the milk depends

Expensive repairs can be avoided by taking a little pains to protect the surface of the metal trim on your buildings. Remember how it is exposed. Keep it well protected and rust won't have a chance.



If we ever stopped to count the number of feet that pass up and down the doorsteps of our homes, we would appreciate better what their surface has to stand. Once the wood gets really worn, through lack of protection, it never can be made to look as good as new. A tough coat of protection saves the surface.

THIS ANNOUNCEMENT is issued by the Canadian Save the Surface Campaign Committee, for the purpose of educating the public in the preservative and protective value of Paint, Varnish and Allied Products for the Conservation of Property, and has received the approval of the Canadian Trade Commission in the following words:

"The realization of the above objects will lead to employment during the Reconstruction Period and bears our entire approval.

THE CANADIAN TRADE COMMISSION

CANADA

Commissioner.

Why Some Furniture Never Seems to Grow Old

OLD in its associations, yes. Old in that beautiful intimate sense of affection we sometimes have for even inanimate things—but not old in the sense of shabbiness.

Protection of the *surface* is the secret of the continued good looks of furniture It is the surface of the furniture that bears the burden of constant wear. It is the surface we *see*. As long as the surface is kept protected good furniture stays good and grows more valuable yearly.

And furniture, after all, only illustrates a point.

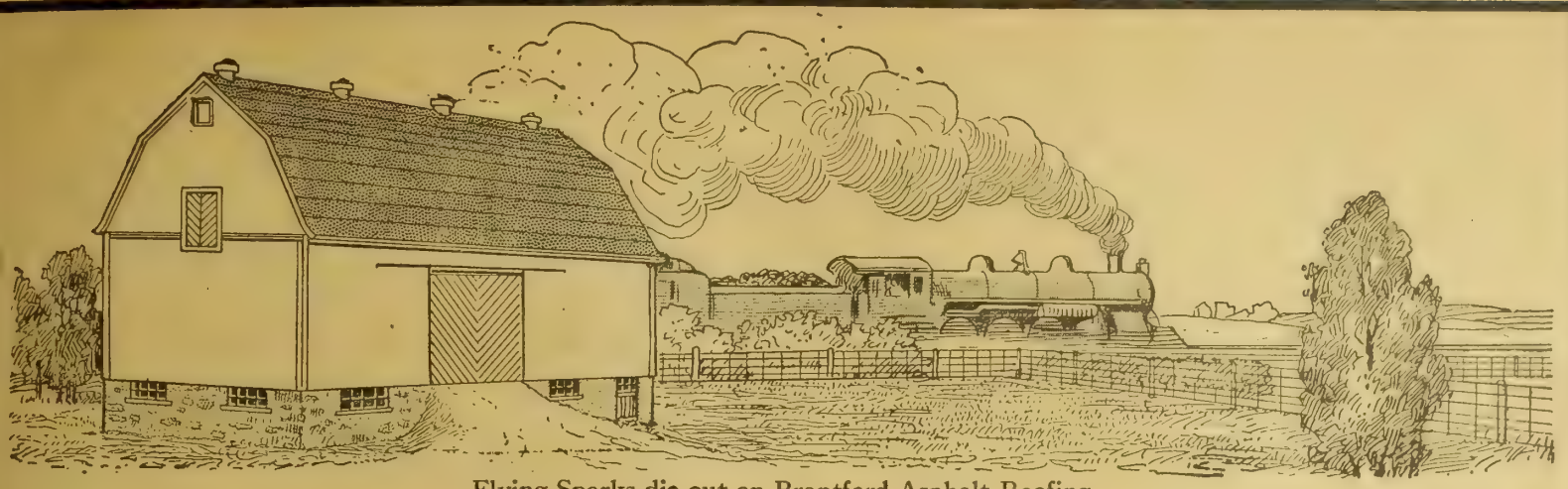
It may be something very different—the metal trim of your buildings or the steps of your house. What use will do to your furniture, rust will do to the metal and scuffling feet to the doorsteps. Again, what these things will do the elements will do to your wooden house, or to stucco, or sometimes even cement.

"SAVE THE SURFACE AND YOU SAVE ALL"

Surface gives the first foothold to wear, rust, decay, and all destruction. The gospel of thrift as applied to the things we own is the gospel of preserving the surface. 10.

"SAVE THE SURFACE AND YOU SAVE ALL" Paint & Varnish

WOOD | PLASTER | CONCRETE | MANUFACTURED PRODUCTS | METAL | BRICK



Flying Sparks die out on Brantford Asphalt Roofing

The best way to economize

The best way to economize is to buy roofing with the quality put into it that will make it last longer than ordinary roofings.

Asphalt is one of the most enduring materials known to science—especially if the hard, brittle asphalts are blended with the soft, pliable kind, which produces an asphalt of remarkable toughness, elasticity and durability. This is what we do to get the very best grade of asphalt for the saturation and coating of

Brantford Asphalt Roofing

The saturation of the felt in Brantford Roofing is done at the high point of more than 350 degrees. This makes the saturation complete, every fibre of the felt being soaked through and through with the asphalt.

Brantford Asphalt Roofing does not evaporate under the heat of the sun. Neither does it absorb moisture, freeze or crack. It is also a wonderful fire-resistant, the insurance companies classifying it as a non-combustible. Farmers need not hesitate to put it on barns or other buildings close by railroad tracks, because flying sparks from locomotives or threshing engines that fall on Brantford Asphalt Roofing are harmless and quickly die out without injuring the roofing.

If the interior of a building should catch fire, a Brantford Asphalt Roof acts as a blanket and helps smother the fire. It never sends embers flying through the air to spread a fire.

Brantford Asphalt Roofing has been on the market for many long years—long enough to have proven its lasting quality beyond question. The first roofs covered with it are still doing yeoman service in resisting rain, snow, hail, frost, heat and wind.

Farmers who have roofed one building with it, choose it for the next building requiring a lasting roof. Unlike most other things, Brantford Asphalt Roofing has had a very small advance in price since the start of the war. By enlarging our output and installing new labor saving machinery we have lowered the cost of production, which helps offset the increased cost of raw materials. You need, therefore, not postpone doing the necessary roofing this spring on account of a price consideration. The outstanding value of Brantford Asphalt Roofing, considering to-day's conditions, makes roofing with it a real economy.

Brantford Asphalt Roofing is made in three thicknesses. No. 1 is 60 lbs. per square. No. 2 is 70 lbs. No. 3 is 80 lbs. Both surfaces are sanded, which adds to the weight and durability of the roofing.

Brantford Rubber Roofing

has the same high quality asphalt saturation and coating as Brantford Asphalt Roofing, but it has a smooth rubbery surface instead of being sanded. It is also in three weights.

No. 1 is 40 lbs. No. 2 is 50 lbs. No. 3 is 60 lbs.

Leatheroid Roofing

Slightly lower quality than Brantford Rubber and used for same purposes. Has a leathery surface. Exceptionally good roofing at a low price. 35 lb., 45 lb., and 55 lb. weights. Samples and prices mailed on request.

Standard Mohawk Roofing

This roofing is made of same materials as Brantford Asphalt but is lighter in weight. It is the best quality of any low price roofing on the market. It is a standard that has been tested for years and given entire satisfaction. Sanded on one side. One weight only—40 lbs.

Climax Sheathing Paper

A tough kraft paper coated with high-grade asphalt. For use between footing and foundation of a building, between foundation and wall, between foundation exterior and the earth, below basement cement floors, underneath floors in houses, on walls before lath and plaster are put on—unequalled for damp-proofing and wind-proofing purposes.

Brantford Roofing Co. Limited

Head Office and Factory: BRANTFORD, CANADA

Branches at Toronto, Montreal, Halifax

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primarily upon the hereditary peculiarities of the cow.

The composition of blood for milk production depends upon the amount and character of food received, thoroughness of digestion, and thoroughness of obsorption from intestines into the blood. It should be understood that when we speak of an efficient producer, either a steer producing beef or a cow producing milk, and say that this animal has large digestive capacity, we should really mean large power of assimilating and using digested food. Actual experience and experiments do not indicate that as a rule there is so much difference in actual digestive ability as there is in ability to assimilate.

The amount of milk produced, assuming an abundance of blood and abundance of nutrition in the blood and a dairy tendency, depends upon the actual number of healthy epithelial or milk secreting cells for an udder of given size depends upon the relative proportion of the gland tissue and connective or frame work tissue is presumably a matter of heredity except as the udder is affected by injury or disease

Finally ability to digest large amount of dry material, the tendency to dairy assimilation, the capacity of large flow of blood through the udder, the tendency of a large number or gland cells within the udder, and the tendency to relatively large proportion of gland tissue as compared with connective tissue are all matters hereditary, fixed by a long line of intelligent breeding.

THE HORSE'S PRAYER

"To thee, my master, I offer my prayer.

"Treat me as a living being, not as a machine.

"Feed me, water and care for me, and when the day's work is done, groom me carefully so that my circulation may act well, for remember: a good grooming is equivalent to half a feed. Clean my feet and legs and keep them in good condition for they are the most important parts of my body.

"Pet me sometimes, be always gentle to me so that I may serve you the more gladly and learn to love you.

"Do not jerk the reins, do not whip me when I am going up-hill. Do not force me out of the regular gait or you will not have my strength when you want it. Never strike, beat or kick me when I do not understand what you mean, but give me a chance to understand you. Watch me and if I fail to do your bidding, see if something is wrong with my harness or feet.

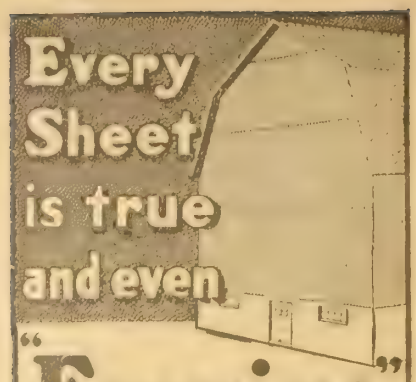
"Don't draw the straps too tight; give me freedom to move my head. Don't make my load too heavy, and oh, I pray thee, have me well shod every month.

"Examine my teeth when I do not eat; I may hava some teeth too long or I may have an ulcerated tooth and that you know is very painful. Do not tie my head in an unnatural position or take away my best defence against flies and mosquitos by cutting off my tail.

"I cannot, alas, tell you when I am thirsty so give me pure, cold water frequently.

"Give me a little more time at the watering trough. Take consideration about the bit that is in my mouth, and that many times I am out of breath when you offer me the chance to drink.

"When I'm wet with sweat, after a hard day's work, cover me with a blanket till I get dry. You have trained me t obe useful for you on the farm, and the only reward I ask to feel happy and contented, faring sumptuously each day with well chosen feeds, and to thee alone will be all the profit, praise and glory."



"Empire" corrugated Iron

"EMPIRE" Corrugated Iron is made with deep corrugations fitting closely and snugly; it makes a splendid, strong, rigid wall that withstands all storms. Remember—building with Metal gives you fire-proof, weather-proof and lightning-proof buildings.

Our "Metallic" building materials—the "Quality First" kind—may cost a little more than other building materials, but they're permanent. "Eastlake" Galvanized Shingles; "Metallic" Ceilings; "Metallic" Rock and Brick-face and Clapboard Siding; Roof-lights and Ventilators, Silo Tops, etc., save you money.

Write for interesting booklet giving complete information, prices, etc.

Metallic Roofing Co. Limited
Toronto - Winnipeg

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MARKETS.

CHARLOTTETOWN

Beef, demand good, 20c to 22c lb. by carcass.
Veal, 16c to 18c.
Hogs, dressed, 22c. Alive, 19c.
Lamb, none.
Mutton, 20c lb.
Beef Hides, 17c lb.
Sheep Skins, $3.00 to $5.00 each.
Calf Skins, 30c lb.
Potatoes, 80c to 85c per bushel in bulk. Demand good.
Carrots, $1.75 to $2.00 per 100 lbs. Scarce.
Turnips, 40c per bushel of 50 lb. Scarce.
Parsnips, none.
Oats, 82c to 85c per bushel. Supply fair. Demand good.
Cornmeal, $4.00 to $4.25 per sack.
Bran, $2.40 per sack. Very scarce.
Oatmeal, $5.50 per sack.
Middlings, $2.50 to $2.75 per sack.
Cotton Seed Meal, none.
Oil Cake, $3.50 to $3.75. Demand good.
Buckwheat, none except seed.
Ontario Flour, $11.85 to $12.00 in wood.
Manitoba Flour, $12.15 to $12.25 in wood.
Chickens, none.
Fowl, none.
Turkeys, none.
Geese, none.
Butter, Creamery, 55c to 58c. Demand good, but price falling.
Butter, Dairy, 48c to 55c, supply increasing.
Cheese, none except imported at 32c per lb.
Eggs, demand good. Supply good. Price 45c to 46c.
Hay, (pressed) $20.00 to $22.00 per ton.
Straw (pressed) $8.00 to $10.00 per ton.

THE PROVISION MARKET

Montreal, May 26.—There was no further change in the live hog situation today, the tone of the market being firm, with a steady demand for what supplies were available on spot, and sales of selected lots were made at $21.50 to $21.75 per 100 lbs. weighed off cars. A fair trade in a wholesale jobbing way continues to be done in dressed hogs, and prices were maintained, with sales of abattoir fresh-killed stock at $30.50 to $31 per 100 lbs.

There were no new developments in the condition of the market for smoked or cured meats, prices being firm under a good steady demand for supplies for local and country account, and this, coupled with the large movement for export, prevents any accumulation of stock on spot. In a wholesale jobbing way sales of 8 to 10-lb. hams were made at 39c to 40c per lb., 12 to 15 lbs. at 37c to 38c, and heavier weights at 35c to 36c. The market for bacon is more active than that of hams owing to the fact that the consumption of the former is larger than the latter, and sales of breakfast bacon were made at 43c to 44c per lb., Windsor selected bacon at 46c to 47c, and Windsor boneless bacon at 48c to 49c. The trade in barrelled pork is quiet, with Canadian short-cut in a jobbing way quoted at $56 to $58 per barrel.

The market for lard remains firm under a good demand for supplies for domestic and country account, and a fairly active trade was done in a jobbing way in Canadian pure leaf grades at 34c per lb. in 20-lb. wood pails, and at 35c per lb. in 1-lb. blocks, while American compound lard sold at 27c per lb. in 20-lb. wood pails.

The receipts of provisions today were 2,570 packages lard, 2,691 boxes hams and bacon, and 5,101 packages tinned meats.

Chicago, May 26.—Provisions rose despite considerable weakness in the hog market. The upward swing of grain gave impetus to the advance. Prices closed with gains of 15c to 25c. Future quotations were:

	Open	High	Low	Close
Mess pork, per bbl.:—				
May		$54.50	$51.15	$54.50
July		$50.10	$49.25	$50.10
Lard, per 100 lbs.:—				
July $31.25		$31.62	$31.20	$31.62
Sept. ...$30.80		$31.32	$30.80	$31.32
Short ribs, per 100 lbs.:—				
May		$29.25	$29.10	$29.25
July $27.25		$27.75	$27.25	$27.75

Cash prices closed:—Pork, nominal. Lard, $34. Ribs, $28 to $28.75.

MILLFEED AND ROLLED OATS

Owing to the more liberal supplies of bran and shorts an easier feeling has developed in the market, and prices have declined $1 to $2 per ton with sales today of car lots of bran at $42 and shorts at $44 per ton, ex-track, while sales of small quantities in mixed car lots were reported at $43 to $44 for bran and at $45 to $46 for shorts. There was no change in other lines of feedstuffs and the market on the whole was fairly active under a steady demand. Sales of feed cornmeal were made at $68, mixed grain moullie at $60 to $62, pure barley meal at $60, mixed moullie at $54 to $56, dairy feed at $48, and oat middlings at $44 per ton, including bags, delivered to the trade. The demand for rolled oats continues quiet and prices are unchanged with broken lots of standard grades quoted at $3.90 to $4 per bag of 90 lbs., and Golden cornmeal sold at $5.15 to $5.30 per bag delivered to the trade.

COUNTRY PRODUCE

Montreal, May 26—The strength which has characterized the egg situation for some weeks past now still continues to be the main feature, and prices in the country this week have scored a further advance of 2c per dozen, and dealers are now paying 49c per dozen f.o.b. shipping points, and it is reported that even higher figures than this have been realized in some instances, and in addition to this purchases of straight car lots were made at 49c per dozen, f.o.b. shipping points in Manitoba, and these eggs with freight added will cost 52c per dozen laid down here. In sympathy with the above the domestic market today was stronger, and dealers in some cases advanced prices 1c per dozen. The demand for home consumption continues good, and an active trade was reported in a jobbing way. The receipts of eggs today were 5,024 cases, as against 7,829 for the same day last week, and 2,677 for the corresponding date a year ago.

We quote wholesale jobbing prices as follows:

Selected eggs.....54c to 55c
Straight gathered.....52c to 53c
No. 2 eggs.....49c to 50c

There was no important change in the condition of the market for maple product. but the feeling remains very firm on account of the somewhat limited supplies available on spot. The demand for maple sugar for shipment to the United States continues good, and it is reported that sales of some round lots have been made at country points. The trade on spot in a jobbing

The First Line of Defence

A plentiful supply of ammunition is the first line of defence against the enemy. When waging war against the Potato Bug army, make sure that your first line of defence is impregnable by using Munro's Pure Paris Green—the only ammunition you'll need. When the first Potato Bug appears, spray the plants with a liquid solution of this old reliable Killer, and the enemy will be destroyed and your potato crop saved.

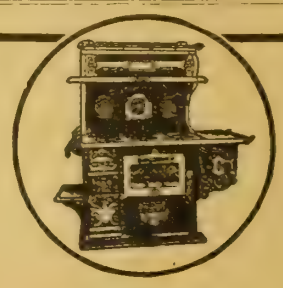
MUNRO'S PURE PARIS GREEN

is a fine fluffy, rich green powder made to Government standard. It has been killing potato bugs for years, and this year will kill more than ever, because more people will use this old standby to make sure of getting a good crop of potatoes. Be sure you get Munro's from your Hardware, Drug, Grocery and General Store.

Manufactured by

McARTHUR, IRWIN, LIMITED MONTREAL

Made in Canada.



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Monarch Range

A STRONG, handsome, durable six-hole range, with every modern convenience, guaranteed perfect in fit, finish and operation. Built to stand the wear and tear of years of daily use. Economical of fuel, and made to burn either coal or wood.

Call on our nearest agent, who will show you the Monarch and its many advantages.

Send us your name and address for free booklet.

Enterprise
FOUNDRY CO. SACKVILLE, N.B.

13

way is fair, with sales at 26c to 27c per lb. as to quality. The demand for maple syrup is steady at $2.15 to $2.25 per tin of 13 lbs., and at $1.75 to $1.85 per tin of 8½ lbs.

There is a steady demand for small lots of beans for domestic account, and a fair trade is passing in a jobbing way at firm prices with sales of Ontario hand-picked at $4.50 to $4.75, and Quebec beans at $3 to $3.50 per bushel, ex-store. The trade in car lots is rather quiet on account of the fact that buyers of such are fairly well supplied for the present, and prices are unchanged, with Ontario hand-picked quoted at $4.25 per bushel ex-track. In sympathy with the other lines of grain peas rule very firm, but the demand is still somewhat limited, with Ontario boiling stock quoted at $3.50 to $3.75, and Quebec peas at $3 to $3.50 per bushel, ex-store.

The condition of the market for potatoes is unchanged, prices being firmly maintained on account of the continued small offerings and the good steady demand for the same for local consumption, and sales of Green Mountains in a jobbing way were made at $2.50, and Quebec white at $2.25 per bag of 90 lbs. ex-store, and car lots of the latter were quoted at $2 to $2.10 per bag of 90 lbs. ex-track.

A good steady business continues to be done in dressed poultry for local consumption and for shipment to outside points, consequently the market is fairly active, with a firm undertone, but there is no change in prices to note.

We quote wholesale prices of cold storage poultry as follows:

Choice turkeys, per lb.	48c to 50c
Milk-fed chickens	45c to 47c
Ordinary chickens	40c to 43c
Fowls, heavy	37c to 38c
Fowls, light	33c to 34c
Ducks, No. 1	48c to 50c
Ducks, No. 2	45c to 46c
Geese	31c to 32c

Chicago, May 26.—Eggs, unsettled. Receipts, 48,541 cases. First, 43c to 45c; ordinary firsts, 41½c to 43c; at mark, cases included, 42c to 43½c; storage packed firsts, 45½ to 46c; extras, 46c to 46½c.

New York, May 26.—Eggs, firm. Receipts, 20,803 cases. Fresh-gathered, extras, 51c; fresh-gathered firsts, northern section, 48c to 49c; southern section, 47c to 48c; State, Pennsylvania and nearby hennery, browns, 52c; do. gathered browns and mixed colors, 47c to 51c.

THE BALED HAY MARKET

The tone of the market for baled hay remains strong under a good demand for all offerings and sales of small lots for local account of good No. 2 timothy were made at $38 to $40, No. 2 timothy at $36 to $37, and No. 3 timothy at $34 to $35 per ton, delivered.

TO FREE STOCK FROM DISEASES DISINFECT STABLES

That regular disinfection of the stables is not a common practice in Canada is sufficient evidence that farmers do not appreciate the importance of the health of their animals. Such diseases as tuberculosis, abortion, scours, blackleg, glanders, hog cholera, etc., take enormous toll from farm revenues. Again parasites such as lice, ticks, etc., each year cause the waste of enormous amounts of expensive fed to say nothing of the losses in production of milk, meat, and young stock.

One of the most important factors in cheap and healthy wintering of animals is clean quarters and no quarters can be kept clean and free from disease and parasites without disinfection at least twice annually.

The basis of disinfection is direct contact. Disease germs under a layer of manure, srtaw or dirt, cannot be killed by average disinfection. Hence the first step is the thorough cleaning out of the barns, scraping (and washing, if possible), all walls and floors, and sweeping dirt, dust and cobwebs from walls and ceilings. Wooden floors should be repaired and earth floors renewed with a layer of clean soil.

What Disinfectants to Use

(1.) Sunlight. This is the cheapest and one of the best. Every stable should have at least six square feet of glass per mature head of horses and cattle, and one-quarter this amount for calves and mature hogs. Sunlight induces cleanliness, health, comfort and greater profits.

(2.) Whitewash: A good whitewash applied hot to ceilings and walls covers and kills germs and parasites. It is advisable to add drug disinfectants, such as carbolic acid, if the barns have housed diseased animals. Apply with spray pump or brush.

(3.) Drug Disinfectants: All floors, gutters, and mangers should receive extra care. Disinfect by soaking thoroughly with one of the coal tar distillates such as Kresa, Zenoleum, Creolin, etc., etc., applied in water solution 3 per cent to six per cent. varying with strength of disinfectant. Apply wtih spray pump or sprinkler and brush in.

Thoroughness in the above disinfection is most important.

The intelligent stockman intent on maintaining healthy stock finds it wise to disinfect mangers and feed passages more frequently. A light spraying monthly will suffice.

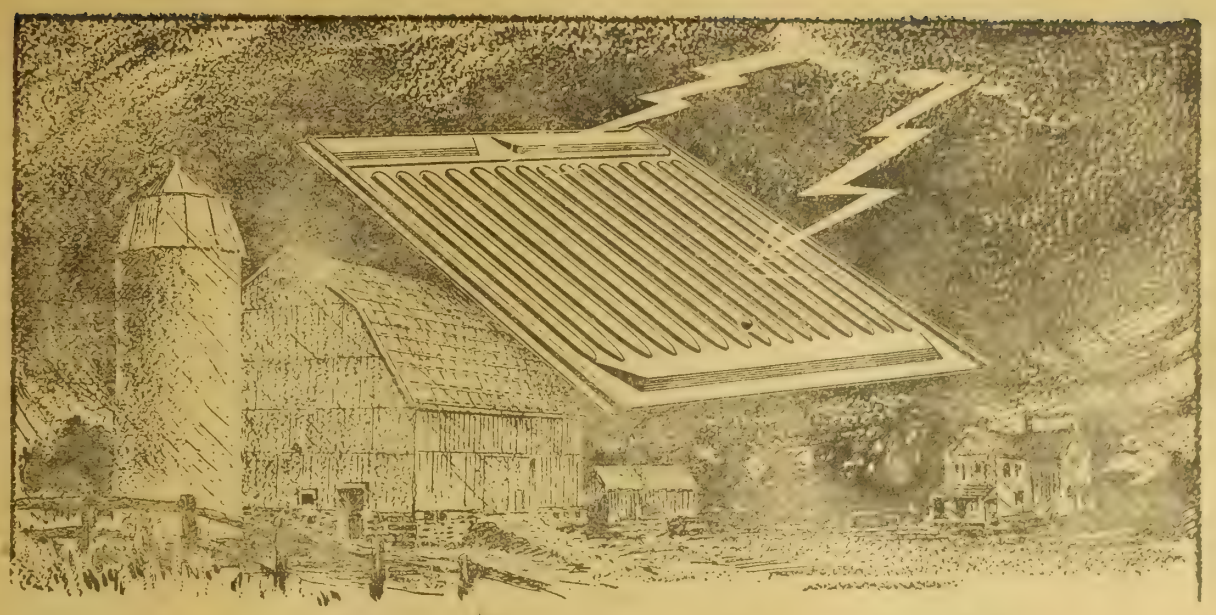
Practice proves that disinfection is cheap insurance and an investment yielding a high rate of interest. If Canadian farmers unitedly will but realize this, animal disease and losses therefrom would decrease 20 per cent. per annum.

BOARDING COWS EXPENSIVE LUXURY

A dairy cow that is not paying for her feed is truly a slacker, and should be eliminated from the herd at once.

Do you have any such cows in your herd? Do you keep a record of the number of pounds of butter fat produced per cow. If you do, doubtedly the slackers have already been eliminated. If you are one of those who do not keep record and tests of each individual animal, how do you know which cows are mere boarders and which cows are paying for their feed? Many times the cow giving the smaller amount of milk will average higher in butter fat than the cow giving the larger amount of milk. At the present high prices for feeding stuffs it is a serious proposition to be keeping cows that are mere boarders.

Keep accurate records of each individual cow; know for yourself which cows are paying and which are not. If a record is on hand when you offer your good stock for sale it will add greatly to the price you will receive.



Sure Protection From The Fiercest Lightning

LIGHTNING is a permanent menace to the farmer whose buildings are inflammable. Whenever the sky blackens with the gathering thunder-clouds and the vivid streaks of destructive lightning cut through the gloom he may expect at any moment to see his barn catch fire.

But not so the farmer whose buildings are Pedlar-roofed.

Pedlar's "George" or "Oshawa" shingles, properly grounded, present a surface of solid steel, which takes the lightning stroke and conducts it harmlessly to the earth, where its force is dissipated and lost.

Every year hundreds of thousands of dollars are lost by farmers in Canada through burned buildings, which also entails an almost incalculable loss of valuable live stock and season's crops. And the majority of fires are due to lightning.

Every year the lesson is learned too late by many farmers who have put off the re-shingling with Pedlar steel that they know is the policy of security.

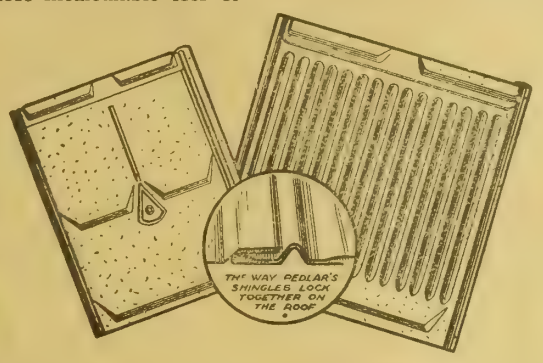
Why take needless risks?

Why aid the elements in destruction?

A Pedlar-shingled roof is not only the safest roof you can have, but in the long run it is also the cheapest, for not only does it repel lightning and resist fire from any other cause, but it cannot rot or decay. It is the roof that endures—fire-proof, storm-proof, time-proof.

And it is easy to put on—big, generous, shingles, with the simplest and most effective lock ever invented.

Look into it! Write us for full details and prices if your local dealer cannot supply.



PEDLAR'S "OSHAWA" SHINGLES

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Take the first step toward the best and cheapest Fire Insurance by writing us for Shingle Booklet M F

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COMMON AILMENTS OF SHEEP

(Continued from page 871)

by castor oil. Death usually results unless lambs are closely watched.

Forage Poisoning

At this time of year we notice many inquiries in farm papers relative to death of sheep from unknown causes. One of these is forage poisoning. For the past 13 years this disease has come under my notice. Forage poisoning is more prevalent where silage is fed, though it occurs with any kind of feed or pasture. The first symptom noticed the sheep holding head a little to one side; one ear dropping and sheep unable to eat or drink; excessive flow of saliva; very nervous; seems inclined to place head against rack or some other object. Death usually results in from two to seven days. I have known some suffering with this malady to live 12 days. As no preventive or cure for this has been found death usually results. Veterinarians recommend Epsom salts, but it isi impossible to successfully administer any treatment owing to paralyzed condition of throat. I have given the salts by inserting a rubber tube into throat. Nux vomica in eight-grain capsules every six hours has proved beneficial. If any reader of this article has found a cure for forage poisoning, kindly give same in these columns.

PRESERVATION OF FENCE POSTS

It is a well established fact that the life of fence posts can be doubled or even trebled by the use of some form of creosote treatment. When applied to the softer woods the length of life is further increased. Creosote may be applied to fence posts in three different ways, all of which have proven very satisfactory.

The brush method is the simplest and also the least effective, the creosote being applied to the post with the ordinary paint brush. This is not a very satisfactory method due to the fact that the preservative does not penetrate to hardly any depth. To have results at all satisfactory by using this method the creosote should be heated nearly boiling hot when applied.

The dipping method.—The posts are just dipped in boiling creosote and immediately removed. This method has advantages over the brush treatment, due to the fact that the cracks and crevices are completely filled with the preservative.

The open tank method of treatment is by far the most successful of the three. When treating by the open tank process the posts are allowed to remain in the preservative for a period of two to six hours, during which time the creosote is kept boiling hot. They are then removed and left to cool in another "cooling tank" or left in the original tank until cool. In this way the wood becomes thoroughly saturated, effecting an efficient preservation of the post. The effect of treatment in the life of a post is shown in the following table:

Life of Fence Posts

	Untreated Years	Treated Years
Ash	6	25
Basswood	4	27
Boxelder	4	27
Bur Oak	12	27
Catalpa	17	27
Cottonwood	3	26
Larch	8	20
Red Cedar	30	37
Red Elm	7	25
Red Oak	7	20
Soft Maple	4	27
White Cedar	14	30
White Elm	4	25
White Oak	17	30
Willow	4	26

FARMER'S LIFE EIGHT YEARS ABOVE AVERAGE

The United States Department of Labor published recently a bulletin on the cause of death by occupation which is an authoritative work on the subject and gives a great deal of interesting information for insurance companies and the public generally. The department gathered data of 94,269 deaths of occupied white males and of 102,467 deaths of white females at 15 years or over. From these it was possible to work out a table showing the average age of death by occupation, the period covered being from 1911 to 1913, and the records studied being the mortality experience of one of the largest insurance companies carrying risks in all parts of the United States. The following table was compiled.

Males

	Average age at death. Years.
Clerks and office assistants	36.5
Enginemen and trainmen	37.4
Plumbers	39.8
Compositors and printers	40.2
Teamsters, drivers, chauffeurs	42.2
Saloon keepers and bar tenders	42.6
Machinists	43.9
Longshoremen and stevedores	47.0
Textile-mill workers	47.6
Iron moulders	48.0
Painters, paperhangers	48.6
Cigar and tobacco workers	49.5
Bakers	50.6
Railway track and yard workers	50.7
Coal miners	51.3
Laborers	52.8
Masons and bricklayers	55.0
Blacksmiths	55.4
Farmers and farm laborers	58.5
All occupations	47.9

Females

Clerks and office assistants	26.1
Store clerks and saleswomen	28.0
Textile-mill workers	33.9
Dressmakers and garment workers	42.0
Domestic servants	49.1
Housewives and housekeepers	53.3
All occupations	51.1

BAD CONFORMATION IN HORSES

(Continued from page 873)

little or no lameness while running straight out, but on turning them sharply round they can be easily detected.

Locating the Cause

When once the examination has discovered the suspected limb, the locating of cause is the next duty. Any spot that shows unnatural heat, tenderness on pressure, or swelling in any part of it, will generally guide in the decision as to the nature of the disease. If the discovery cannot be made by this means, the horse should be put to a sharp trot for half an hour and then left in the stall to cool off for twenty minutes, and then brought out again. This method rarely fails to show up the trouble, and it will overcome quite a number of the tricks that are practised by some horse dealers in reducing or hiding lameness in horses they have to sell.

FARMS LOSING SOIL FERTILITY

How Wasteful Methods are Checked.

While the spring-time work on the farm progresses the soil is the subject of the hour, and its wonderful properties may well move us to admiration. It is the direct source of the entire vegetable, animal, and human world,

A quaint U.E. Loyalist House on Bath Rd., near Kingston, Ontario. Built 1793 by Wm. Fairfield, a pioneer of Ernestown. The house has been occupied for four generations and is in a fine state of preservation.

A 126-Years War

HOW many successive times have the warring elements beaten upon this house, in the 126 years since it was built?

No one can say, but everyone can see the wonderful preservation of this house, through surface protection, despite all it has gone through in well over one hundred years.

If equally well protected, our modern houses should last as well. So will property of almost any kind—from a city garage to a country barn—from an office desk to a library table, or the metal trim of buildings, or your front hall floor.

Some surfaces may need one kind of surface protection, and some another, *but they all need surface protection.*

It is at the surface that trouble begins, rust that attacks iron—decay that attacks wood—wear that attacks surfaces subject to friction. All these allies of destruction hunt for an opening *at the surface.* Surface is the frontier—the point of attack.

It is when we once picture all the agents of property deterioration as an ever-ready enemy waiting to spring at any opening offered, that we appreciate the significance of the expression;

"SAVE THE SURFACE AND YOU SAVE ALL"

THIS ANNOUNCEMENT *is issued by the Canadian Save the Surface Campaign Committee, for the purpose of educating the public in the Preservative and Protective value of Paint, Varnish and Allied Products for the Conservation of Property, and has received the approval of the Canadian Trade Commission in the following words:*

"The realization of the above objects will lead to employment during the Reconstruction Period and bears our entire approval.

THE CANADIAN TRADE COMMISSION

Commissioner"

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and well deserves the title of Mother Earth. In its formation it has undergone changes through countless ages, and these changes are still proceeding under the influences of frost and rain, cultivation and manuring. Man has not studied it long enough to make his statement of its formation from absolute knowledge, but if he will study the geological formation he will see that at one time the rich tracts of land were destitute of vegetation. We can conceive of it as being simply rock in some form, which was gradually decomposed by the action of plant life, growing plants of the lowest form, then higher and still higher, and becoming developed into forest and prairie rich with the stored fertility of uncounted ages, until man came to harvest the crop.

Retaining its Fertility

Only by following nature's way can fertility be maintained and restored, using the same things over and over again. It takes nature a long time to bring it back to fruitfulness after man has robbed it. Under nature's processes there is a slow and gradual increase of fertility, the humus supply increased by decayed vegetation, and the mineral elements—potash, phosphorus, and lime—by the gradual decomposition of the rock. The farmer who adopts a method of farming that will enable him to imitate nature will be on the road to good husbandry. It is quite possible to cause soil exhaustion, the cereal crop growing continuously removes the plant food in soil very rapidly if necessary elements be not augmented artificially. The amount of phosphoric acid and potash abstracted from a soil by 30 bushels of wheat or oats is about 9½ lbs. phosphoric acid, 15 lbs. of potash, and 35 lbs. of nitrogen. But rotation of crops enables the farmer to diversify his farming methods, furnishing a natural supply of manure, which, if intelligently applied to the land, will more than make up the losses in fertility from selling a portion of the grain and live stock. This is the reason for rotation of crops. Nature, too, it will be observed, mixes her grasses, one variety predominating one year and another the next. Bacterial agencies tear the fallen forest leaves, the decaying grasses, the dead roots and limbs to pieces, resolve them into their original elements, which the new crop takes up, and so it goes on time with end. Study the forest and the tracts of land still in nature's keeping and imitate their thrift and your land will not lose its fertility.

The Prodigal at Home

With respect to the conservation of the greatest of our natural resources, the elements of the soil, every citizen is interested, because from the soil comes the food of everyone, but the farmers are interested above all others, for the cultivation of the soil is their occupation, and from it they derive not only their food but all their income. The resources of the soil form the principal part of their capital. In wasting the fertility of the soil or in exhausting it without taking steps to restore the elements they are taking from it in each year's crop, they are acting the part of spendthrifts. If such a course is persisted in there always comes a day of reckoning, when not only in the ledger of the farmer, but also of the nation the balance is found to be on the wrong side.

.oM.c andx t,nu y.ofie etaoin etaoinn May 27, 1919

Agriculture is the foundation of all real and enduring progress in a nation, for it not only produces what is essential in existence, but it breeds the men necessary to build up a nation. The men who by reason of strength of character and intellectual pre-eminence take the lead in public affairs, in professional life, and in scholarship, are, as a rule, removed not more than one generation from ancestors who tilled the soil. A strong prosperous rural population is the surest guarantee of a nation's future, and the possession of such a population depends upon the maintenance of the fertility of the soil.

Desolation's Warning

There are well known facts in history that prove that such fertility will not endure without strenuous and well directed effort. The giant cities of Bashan thickly studded a land once fertile, now a wilderness made desert by wasting methods. That part of Asia from which Xerxes drew those vast armies that he led against Greece was then the homes of a dense population whose mainstay was agriculture. Today these lands are, comparatively speaking, deserts. The granary of the Roman Empire, the once fertile lands by the Red Sea, became barren through successive cropping, and remained so for centuries, but Britain by her administrative ability has reawakened life among their sunken and wretched populations in utilizing the water of the Nile to court again to activity the resources of nature in the soil and grant that land a fresh lease of life. These all point to the vital importance of conserving the resources of the soil —resources whose neglect not only affects the interests of the farmer, but also endangers the welfare of the nation from the King on the throne to the lowliest worker in the national hive.

Save Money and Labor

—and increase the volume of work done on your farm by installing the Fairbanks-Morse Type "Z" Engine.

It does the work of several men and eliminates the worry and expense of ordinary farm labor. No matter what type of farm you have there is a "Z" Engine that suits your requirements.

You are sure of the "Z" because it is the standard engine that was designed to do its work quicker, better and more economically than any other engine.

The "Z" operates on the cheapest of fuels—the 6 and 3 Horse Power on gasoline, coal oil (kerosene) or distillate—the 1½ H.P. on gasoline only. It is simple in construction, compact, easy to move about the farm and efficient because it develops more than rated power.

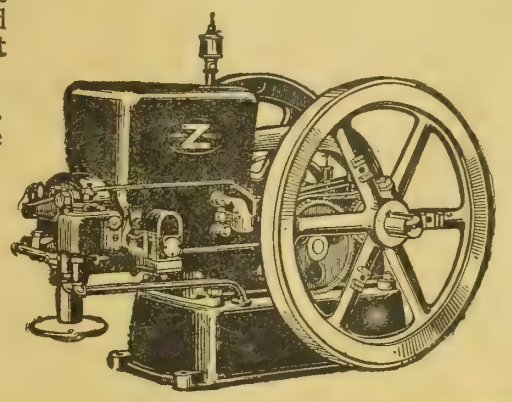
Ask your local dealer about this engine. He stands behind it and gives you a service that insures you satisfaction.

Investigate the "Z" today. Ask for demonstration of the

Fairbanks-Morse

Type "Z" Engine

6, 3 or 1½ H.P.



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The Canadian Fairbanks-Morse CO., LIMITED

St. John Quebec Montreal Ottawa
Toronto Hamilton Windsor

65 CENTS MAY EARN 100 DOLLARS

Smut diseases in wheat, oats and barley exact a toll of 16% of the total pield. In other words, many fields of oats, which should produce 40 bushels to the acre of well matured grain are cut down to 33. The other 7 bushels are lost through smut.

There is a simple and certain remedy—the treatment of the seed with formalin solution. Get one pint of formalin, costing 65c and pour it into 30 gallons of water. Then dip the seed in bags into the solution long neough to saturate it. Leave standing an hour or two, then spread out to dry, avoiding the dusty barn floor.

The 30 galon solution will treat 50 to 75 bushels of grain, enough to sow 25 acres, and the extra yield will probably run up to 150 bushels.

Make Them Worth More

NOW, of all times, you must get more work in return for every bushel of feed.

PRATTS ANIMAL REGULATOR saves needless expense, because your horses will get more nutriment out of less feed and work steadily all season. Cows give more milk—hogs fatten quickly. Use it for all your stock.

Money Back if Not Satisfied.

At your dealer's. Booklet FREE.

Pratt Food Co. of Canada, Limited,
328H Carlaw Ave., Toronto. S-5

Pratts

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

YORKSHIRE PIGS for sale. Registered and not registered. Write HENRY McINTYRE, Box 525, Campbellton, N. B.

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These pigs are backed by two of the best strains of Chester Whites in Canada; nearest breeding as follows:—

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A box 9½ inches long, 9 inches wide, and 6½ inches deep will contain a peck.

A box 9½ inches long, 6½ inches wide and 4½ inches deep will contain a gallon.

A box 4¾ inches long, 4½ inches wide by 3¼ inches deep will contain one quart.

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The Use of Disinfectants to Destroy Disease Germs Essential on Every Farm.

The average stockman and farmer does not realize the importance of thoroughly disinfecting his premises following an outbreak of contagious diseases. There is apparently a widespread lack of information regarding the germicidal power of various substances, commonly termed disinfectants. There is also a lack of knowledge concerning practictl and economical methods, and the reappearance of a contagious disease on premises from which it was believed to have been eradicated may frequently be traced to careless or imperfect work in connection with the cleaning and disinfection of the place.

This article has therefore been prepared with a view to emphasizing the importance of thorough disinfection of contaminated biuldings and to point out some of the most reliable disinfecting agents together with the methods for their application.

The Necessity for Disinfection

It is well known that micro-organisms, or germs, vary in form and other characteristics and that for each disease of an infectious nature there is a specific germ.

If these germs could be confined to the animal body and die with it there would be no such thing as an infectious disease. Unfortunately, however, they are thrown off by the animal through the excretions and lie in the earth, in the litter of stables, upon the floor and walls, and in cracks and crevices. Here they may remain and maintain their virulence for an indefinite period, ready at any time to be gathered up by an animal in its feed or to be blown about in dust and drawn into the lungs.

For example, we have tuberculosis in cattle and glanders in the horse. In the former disease the causative agent is a rod-shaped germ (bacillus tuberculosis) which is about one-thousandth of an inch in length. Cattle affected with tuberculosis pass myriads of these germs with the manure, and it is not difficult to understand how in the average stable they would have little difficulty in finding many lodging places. In glanders the causative agent is another rod-shaped germ (bacillus mellei) about the same length as the tuberculosis germ, but somewhat thicker. A characteristic of this disease is the foundation of ulcers in the nostrils and other portions of the body, from which there is more or less discharge laden with the glanders germ. And here, again, it is not difficult to understand how one diseased animal may contaminate extensive premises.

Some of these minute forms are vegetable organisms, in fact, these vegetable parasites are the cause of some of the most destructive diseases, and some of them are very difficult to destroy, for the reason that they contain spores. A spore may be likened to the seed of a plant, for it bears about the same relation to the bacillus that a garin of wheat does to hte plant proper.

As the plant may be destroyed and the seed remain latent for an indefinite time, so destruction of the bacillus may be easily accomplished while the spores remain unharmed and retain life for weeks or months.

An example of this class of organisms is seen in the agent which causes anthrax (baccillus anthracis.) Ordinary methods for the destruction of the baccillus will not destroy the sopre as well, and thus anthrax becomes a most difficult disease to eradicate. Upon farms where animals have died from anthrax and the carcasses have been buried instead of destroyed, repeated outbreaks of the disease may occur from time to time, possibly extending over a period of several years. This condition is due to the existence of the very resistant spores, which under favorable circumstances are carried to the surface of the earth and become infecting organisms—much as the seed of a noxious weed, after remaining in the soil during the winter, finds the condition favorable in the spring and develops into a plant—except that these minute forms of life multiply with the most wonderful rapidity.

Thus it is that our increased knowledge regarding micro-organisms or bacteria as the cause of many animal diseases has emphasized the importance of disinfection.

The Nature of Disinfection

The work of disinfection is based upon recognition of the presence of disease germs, and disinfection means the act of destroying the cause of the infection. In other words, disinfection is a removal of the cause, and it will be clear to any practical man that in dealing with disease any effort which stops short of a complete removal of the cause is most unwise and unprofitable. To those unaccustomed to the work, disinfection may seem a most complicated process. Any approved method, however, is comparatively simple when carried out care, fully, although like many another procedure it is one in which attention to details counts for much. It is important to bear in mind that the causative agents of many diseases are extremely small and may remain for an indefinite time in dust, cracks, and crevices of buildings, so that efforts aiming at eradication of disease from contaminated premises must be thorough in order to be effective.

Disinfectants

In the work of disinfection, nature has provided man with a most valuable ally—sunlight. It is well known that the direct rays of the sun are destructive to many forms of bactetia, in some cases destroying them and in others lessening their influence. Thus the importance of well-lighted stables is evident. The dark and sunless building will be a favorable breeding place for bacteria, and the structure which admits the greatest amount of sunlight will be the least favorable for their development. Again, heat will destroy the bacteria of disease. By this is not meant the ordinary heat of the sun but heat as developed in boiling water or in flame. It is upon this principle that the surgeon before operating renders his instruments free from the possible presence of bacteria by boiling, and it is heat which renders a jet of live steam destructive to bacteria, while the application of heat in the form of steam or flame is seldom possible. The result is that in the practical work of disinfection we are dependent upon certain drugs, which have power to destroy the organisms of disease.

Such drugs are known as disinfectants, and, fortunately, we have a number that possess the power of destroying bacteria. It is not the purpose to consider further the relative values of these drugs, neither will it be necessary to discuss the exact manner in which they act. It is sufficient to know that they possess the power of destroying bacterial life with the same certainty that poisonous drugs destroy animal life. They have only to be brought in contact with the bacteria in order to destroy them. As disinfecting drugs vary more or less inp otency and in adaptability to general use, possessing certain advantages as well as disadvantages, it may be well to describe a few of the commoner forms.

Bichloride of Mercury

Bichloride of mercury, also known as corrosive sublimate and mercuric chloride, is used in solution in water, commonly in a strength of 1 to 1,000, though solutions of double strength may be employed. Although possessing great germicidal power, it has the disadvantages of being a violent poison, of corroding metals, and of uniting with albuminous substances, such as excreta, blood etc., and thus forming inert compounds. Unlike the coal-tar products, it leaves no odor in the stable, which is an advantage in connection with the production of milk. On the other hand, care must be used in the handling of a solution of this drug, and feed boxes should be washed with clear water before animals are again permitted access to them.

Chloride of Lime

Cholride of lime (sometimes termed cholrinated lime) is a well known disinfectant, although its value is doubtless greatly over-rateed. This may be due in part to the fact that it is a powerful deodorant—such drugs on account of their pungent odor being popularly belived to have great disinfecting power. Being of uncertain strength and somewhat destructive to metals, and having a permeating odor especially objectionable in a stable where milk is produced, chloride of lime cannot be classed as the most desirable of disinfectants. For general disinfecting purposes it may be mixed with water in the proportion of 6 ounces to the gallon.

Formaldeyhyde

An aqueous solution containing approximately 40 per cent. of formaldehyde and known as formalin has of recent years become a more eor less popular disinfectant.

Formaldehyde gas is in most cases impracticable for stable disinfection. Case formalin is mixed with water and in the proportion of 6ounces to the gallon; the resulting solution is applied directly to surafces of substances which are to be disinfected.

Formaldehyde gas is in most cases. Where, however, the builing can be made almost airtight, and the animals removed, it will be found very servicable, as it penetrates every crevice.

Several methods are in vogue for disinfectinb with formaldehyde gas. Probably one of the most simple and practical methods of liberating such gas is by means of the chemical reaction which takes place when formalin is poured upon permanganate of potassium. Fo reach 1,000 cubic feet of air space 16 2/3 ounces of crystalized of powdered permanganate of pottassium is placed in a wide surfaced pan; ;;20 ounces of formalin is then poured upon it, and the room immediately closed for a period of 12 hours or longer, This method is efficient only when it is possible to seal tightly the rooms or compartments to be disinfected and when their temperature is not below 50 degrees F.

Carbolic Acid

Carbolic acid in its pure form is at ordinary temperatures, in the shape of long, white crystals. For convenience it is frequently dispensed in liquid form by the addition of 10 per cent. of water. A 5 per cent. solution of carbolic acid is sometimes used as a disinfectant, but carbolic acid has the disadvantage of being expensive and somewhat difficult to dissolve.

Crude Carbolic Acid

This substance should not be confused with pure carbolic acid. It is a product of coal-tar distillation and consists for the most part of practically inert oils and cresylic acid. Its disinfecting power depends upon the amount of cresylic acid which it contains, as well as the relative percentage hydrocarbon oils. Owing to its uncertain composition, crude carbolic acid cannot be classed as one of the most desirable disinfectants.

(Continued on page 629)

Some General Information on Lime and Its Uses and Functions in Soils

Lime was used more than three thousand years ago in parts of Europe to improve soils. In some parts of Canada and the eastern United States liming has been practiced since the earlier stages of the agricultural development and its use has graudally spread until it is added to the soil to a greater or less extent as far westward as the regions of lighter preciptation. Moreover, its need is quite generally recognized in several of the older settled regions of the west. In reality all lands in the humid regions will sooner or later become deficient in lime since it is constantly removed from the soil by water that pases through it, and by crops taken away.

The amount of lime aplied to the soil in Maritime Canada is steadily increasing from year to year. Investigations by laboratory and field investigators show that the lime content of our soils is deficient, especially in the older fields. Moreover, these studies show that this condition is not confined to any particular class of soil such as sands, loams and clays and mucks, but is more or less common to all, yet the fact should not be overlooked that calcerous formations or those high in lime occur in all classes of soil.

The lime required for maximum returns on the investment varies greatly. Many fields require only small quantities in order to obtain satisfactory results from clover and alfalfa, while medium to very large amounts must be aplied to others to establish these crops and produce suitable yields of many others.

Functions of Lime

The benefits derived from applications of lime are the results of changes induced in the soil that make them more suitable for plant growth. Some of the functions that lime performs are very general in their occurrence, while others are more specific, being confined to a limited number of siils. Inasmuch as several or all of the effects of liming may be operative at the same time it is indeed complex, and therefore variable results from its use are to be expected The various functions that lime may perform in the soil may be conveniently grouped as follows:

1. Modification of soil structure or tilth.
2. Neutralization of acids and other injurious substances.
3. Meeting the silicate requirements.
4. Effect upon the vailibility of minerals.
5. Increase the rate of decay of vegetable matter.
6. Increase the efficiency of fertilizers and manures.
7. Supply needed lime to plants.

Improvement of the Physical Condition of the Soil.—It was formerly assumed that the chief reason for adding lime to the soil was to improve its physical condition or tilth due to its granulating effect upon the fine particles. It is recognized that heavy compacted soils may be somewhat improved in this respect by liming, but this action is less general in occurrence and also less important than others.

Neutralization of Acids and Other Substances Injurious to Plants—Some poorly drained soils as well as some that contain very large quantities of vegetable matter such as peats and mucks carry acids in their soil moisture. These may be injurious to plants, the extent of the inhibitive effect depending upon the amount present. Although adequate drainage may improve many such soils liming is effective inasmuch as lime neutralizes these acids. Moreover, other injurious substances which occur in some soils may be counteracted by adequate applications of lime.

Meeting the Silicate Requirements.—One of the chief effects to be gained from lining the majority of mineral soils is to supply the silicates with lime. It is known that the loss of lime the soil leaves the silicate componds, which compose the major portion of the mineral constituents of the soil, deficient in lime. This condition is detrimental to plants and is popularly spoken of as soil acidity or sourness of soils.

Effect Upon the Availibility of Minerals.—Lime may increase the availability of mineral plant food in some soils. This action of lime has long been held to be a very general and also a very important one, special empahsis having been placed upon the liberation of phosphorus and potash to the plants; but recent investigations indicate that undue emphasis has been placed upon this action, it being negligible with some soils.

Increase the Rate of Decay of Vegetable Matter.—It is well known that the presence of sufficient amounts of lime in the soil results in a more rapid decay of veegetable matter as evidenced by the dark green color of various crops growing on limed land as well as the slightly decayed maturity in some cases. Moreover, the amount of nitrogen in the roots, tops and seed crops may be increased by the addition of lime to the soil. Such changes in the composition of the crops of course show that the available nitrogen in the soil is increased by lime and involve the soil bacteria. It is obvious that the free use of lime on the soil without suitable crop rotation and constant renewal of the vegetable matter content by means of stable manure, crop residues, and catch crops will result disastrously. On the other hand, if these precautions are taken the lime will be instrumental in maintaining the vegetable content due to the increased crop production. In some soils, more frequently in muck than others, the root development of crops is retarded, being confined to the surface layers of soil until lime is added and worked deeply into the soil. Furthermore, the presence of lime in the soil is favorable for the development of bacteria that enter the roots of leguminous crops resulting in the fixation in the plants of nitrogen from the soil atmosphere. Organisms that are able in the absence of legumesfi to remove nitrrogen from the air and make it available to plants are likewise bentfited by lime. It is probable that the amount of nitrogen so made available is small, yet it seems to be worthy of consideration.

Lime Increases the Efficiency of Fertilizers and Manures.—Experience teaches that maximum returns from commercial fertilizers, stable and green manures are not obtained when there exists one or more adverse conditions such as poor drainage, deficiency of water in the soil, poor tilth, or lack of lime. It is unquestionably true that applications of lime to many of our soils long under cultivation as well as some of the newer ones should precede that of fertilizers. If this were done a more economical use of stable and green manures would result.

Some soils do not contain sufficient lime to meet the needs of the crops grown. There is an appreciable amount of evidence, contrary to past asumptions, that the ust of lime on some soils results beneficially because it is needed in plant nutrition, especially is this the case with such crops as clover, or those that remove large quantities from the soil.

Forms of Lime

Lime is placed on the market in three forms, namely, the oxide, the hydrate and the carbonate.

These different forms are often given a variety of names. The oxide is known as quick lime, burnt lime, stone lime, caustic lime, lump line, unslaked lime and building lime. The hydrated lime is also called slaked lime. The carbonate is the form of lime found in ground limestone and marl and aso occurse in air slaked lime.

The term "agricultural lime" may be applied to any of the above forms and refers to lime sold for agricultural purposes but unfortunately not necessarily to a product especialy well adapted for application to the soil.

When high grade limestone is burned in a kiln, 100 pounds of the dry stone gives off approximately 44 pounds of carbon dioxide gas, leaving about 56 pounds of lime oxide or quick lime When 56 pounds of quick lime is moistened it takes up 18 pounds of water and forms 74 pounds of slaked lime or hydrated lime. It is veident then that 56 pounds of quick lime, 74 pounds of hydrated lime and 10 pounds of limestone or lime carbonate have tht same power to satisfy the needs of the soil. However, some of these forme are much more soluble than others and consequently peact with the soil much more quickly and in consequence we do not nse these materials in these proportions in the field.

Sources of Lime

Michigan is fortunate in possessing two inexhaustible sources of lime, her limestone and marl beds. There are numerous limestone quarries in the Maritime Provinces. These quarries produce stone for a great variety of purposes, only a small portion of their output being used in agriculture. Some of the quarries turn out only a coarsely ground rock containing small amounts of fine material, while others furnish a very finely ground high grade rock.

Marl.—The lime is present in the marl as carbonate and hence supplies calcium to the soil in the same form as ground limestone. In addition to lime carbonate some marls contain varying amounts of magnesium carbonate, which also meets the "lime requirement" of the soil The value of marl, then depends on the amount of calcium and magnesium carbonates it contains. A marl carying 90 per cent. or more of these carbonates is considered to be of very high grade.

Occurrence of Marl.—Marl is frequently found underlying areas of muck and peat and also along the shores and in the beds of lakes. In some instances the marl is covered by a few inches of muck while in others it lies beneath several feet of it. The thickness of the beds or deposits is also quite variable. The marl owes its existenct to lime that was washed out of the surrounding soil and deposited inl akes and to the accumulation of shells of lower animals such as the mollusca.

As it occurs in the beds, marl is generally a pasty mass varying in color from light to dark-gray depending upon the impurities present. Upon drying it becomes lighter in color and is easily crumbled, or broken up. If a small amount is placed in half a tumbler of strong vinegar or weakened muriatic acid it will give off bubbles of gas and go into solution. This is one method of identifying marl as well as roughly estimating its purity. Some deposits are filled with small shells which aid in identifying this material.

Wattr Content and Weght of Marl.—When marl is thrown out of the bed and allowed to drain the amount of moisture retained is quite variable and depends somewhat on the amount of impurities. In general tht purer the mare the less water it will hold but sandy marls contain less water than clay marls.

Sugar Factory Lime.—Lime is used by sugar factories to clarify and purify the juice and since impurities cause trouble later in the process of refining a very high grade of lime is used. Milk or lime is added to the vats of juice and then carbon dioxide is run to precipitate the lime as lime carbonate. This is later filtered out and discarded. This material contains a small amount of organic matter from the beet juice but otherwist is a very pure carbonate of lime and is admirable material for applying to the soil. It can generally be purchased at a low cost since it is simply a waste product. It very often contains water and hence it should be bought by the yard rather than by the ton since a cubic yard will contain the same amount of lime carbonate whether the amterial is wet or dry.

Thert is another form of lime which may occasionally be obtained from sugar factories. This is the cleanings from the kiln. Many of the factories prefer to burn their own lime and when the kilns are cleaned a quantity of impure burnt lime or stone is obtained. This material is variable in composition but is mostly quick lime when fresh; after standing a short time itc ontains a large amount of hydrated lime.

Wood Ashes.—In some localities wood ashes may be obtained in sufficient quantities to apply to the soil. Ordinarily wood ashes contain from 20 to 50 per cent. of lime expressed as quick lime but they are usually applied to the soil as a source of potash.

Lime from Acetone and Alkali Works.—There are in the State various acetone and alkali works which turn out lime as a by-product. This material is usually of high grade, its chief drawbacks being a high-water content is exposed to the elements. When it can be obtained near at hand and at a low price it is sometimes more advisable to use such products than to buy the more expensive forms of lime. The cost of transportation and difficulty in distribution must be taken into consideration when figuring the cost.

Change Lime Undergoes when Added to the Soil

When the various forms of lime are added to the soil their composition is altered. The change that is now considered to be most desirable is the union of the lime and siliates to form so-called soil acidity. When hydrated lime is added to the soil some of it goes to form air-slaked lime or the carbanate and some the calcium silicate. Now, the lime or magnesium carbonate thus formed or added to the soil as marl or ground limestone likewise passes to the silicates.

It is now understood that the immediate efficiency of the various forms of lime is dependent upon the rate at which they pass over to the silicate. The hydrate is quite rapid and the carbonates are governed mainly by their mechanical state or the scize of their particles as well as the thoroughness of mixing with the soil mass. Particles of limestone approximating 1/100 of an inch in diameter or so-called 100 mesh lime are about as rapid in correcting soil acidity as the hydrate or 2,000 pounds of it approximates 1,500 pounds of the hydrate in this respect, as exemplified by the following table:

Effect of Forms and Fineness of Lime on the Yields of Rye, Sandy Soil

Treatment	Bus. per acre
Hydrated lime and acid phosphate and nitrate of soda	21.60
Marl and acl dphosphate and nitrate of soda	18.40
Limestone passing 80 mesh screen, and acid phosphate and nitrate of soda	21.28
Limestone, 40-60 mesh, and acid phosphate and nitrate of soda	18.36
Limestone, 10-20 mesh, and acid phosphate and nitrate of soda	14.40
No treatment	12.82

Some limestone deposits ontain calcium or lime carbonate and also magnesium carbonate. If the amount of the latter is rather high they are popularly spoken of as magnesium limestones. The larger particles of magnesium limestones are somewhat slower in their action than the non-magnesium limestones as illustrated by results given in the following table In these studies equal quantities of a given soil were treated with the same amount of magnesian and non-magnesian limestones, the particles of which ranged in size from coarse to very fine. After a period of three years the comparative rate of change, or the efficiency of these in meeting the soil's requirements was ascertained by chemical means. According to these results if the particles are very fine the difference in the rate of transformation is negligible.

Comparative Rate of Transformation of Limestones in the Soil

Per. cent total of carbonates not recovered after three years:

	Non-magnesium Limestone	magnesium Limestone
100 mesh limestone	92.4	91.2
60 mesh limestone	81.5	72.2
20 mesh limestone	46.7	34.9
8 mesh limestone	14.9	5.97

If the lime is not mixed with the soil mass, of crouse, its efficiency is somewhat impaired. Inasmuch as the individual particles of marl are very minute its immediate effectiveness is governed largely by the condition in which it goes into the soil. If lumpy, naturally larger quantities are required to bring about a given result than if it is more or less disintegrated. As it usually goes on the land, about 2½ to 3 cubic yards of 95% marl are required to equal 1,500 pounds of the hydrate and 2,000 pounds of the powdered limestone respectively. This ration decreases the second year inasmuch as the lumps are broken down by freezing and changes in the water content.

Crops Benefited by Lime

The response of our cultivated plants to lime is variable some being more tolerant of a deficiency in the soil than others. Reports on record show that some crops will thrive on a given soil without appication of lime that they are practicaly barren of plant growth. Thus, in discussing the response of different crops to lime it is essential that the condition of the soil with respect to this substance be considered. Some of the field crops that are known to respond to lime are as follows:

Legumes.—Alfalfa, sweet clover, crimson clover, mammoth clover, June clover, alsike clover, soy beans, cow peas, beans, vetch.

Non-legumes.—Corn, oats, wheat, barley ,rye, timothy, buckwheat, sorghum, beets, potatoes, carrots, turnips, cucumbers, cantaloupes, pumpkin, tobacco, cabbage.

Where soils are low in lime the following vegetables are known to respond to its use:- Pepper, parsnips, salsify, squash, spinach, rd beet, celery, cauliflower, lettuce and onion. Many plants grown for their blossoms also respond to lime.

Some results from the use of Lime

Lime may be utilized with ample margin of profit on so-called sour soils. Experiment station workes in man states by means of well-planned and carefully conducted field trials have shown conclusively that the use of lime on such soills is sound practice. For example, Thorne and coworkers of the Ohio Agricultural Experiment Station have made many valuable contributions to our knowledge of the lime relationship of soils and crops.

Wiancko and others, of the Indiana Expeirment Station report that three-fourths of the soils in the State are in need of lime. Where ground limestone has been used on the experimental farms it has returned safe margins of profit.

The results of Illinois experiments, on deficient in lime, conducted by Hopkins and associates, show very strikingly that many soils must be liberally treated with lime before they can be permanently improved. Hopkins, (1912) in commenting upon the results of some 145 tests in six counties, states that the value of the increase has been about four times the cost of the regular application of two tons of limestone per acre every four years.

Whitson and associates of the University Wisconsin, by means of many field experiments as well as laboratory investigations report that soils deficient in lime are quite common in Wisconsin and strongly recommend its use on such for their improvement.

Several experiment stations more remote rom Michigan have made contributions to this subject, notably Delaware, Maryland, New Jersey, Rhode slandI, Massachusetts, Pennsylvania, Tennessee and Missouri.

Reports from several county agricultural agents and many farmers in different sections of Michigan, as well as results obtained from recently inaugurated field tests indicate that the use of lime on the majority of our soils is porfitable.

The Nova Scotia Agricultural College Farm, Truro, and the Kentville Experimental Station have proven the value of ground limestone conclusively.

Liming where needed increases the efficiency of fertilizers and stable manure. Many are the reports to the effect that commercial forms of plant food are unsatisfactory without lime. Some of our recently inaugurated field tests also show that lime may greatly increase the value of other treatments, especially manure and phosphates when they are added singly or together to the soil. These results are in accord with those obtained from long continued trials in other states.

How to Determine if a Soil Needs Lime

There isa general impression that a sample of soil may be taken into the laboratory and the exact amount of lime needed to correct its acidity determined. tI is true that a number of methods have been outlined and extensively employed for this purpose and have doubtless yielded much valuable information. But as yet no method has been devised to use in the field. The results obtained for a given soil by different methods are quite variable and in consequence the lime requirement of the soil will depend somewhat on the analytical method employed.

There are, however, methods of determining whether or not a soil is in need of lime but which make no attempt to determine the exact amount that should be applied.

Perhaps the simplest of thes methods is the litmus paper test. To make this test the soil is moistened with rainwater, and made into a ball. This is broken open and a strip of blue litmus paper inserted into the opening and the soil pressed firmly together around the paper. In about five minutes the paper is removed and examined. If the color is pink the soil ic considered to be in need of lime. In making this test great care must be exercised to obtain a good grade of litmus paper. That obtained from the drug store is often not sufficiently sensitive to give satisfactory results. The paper should not be handled when the fingers are moist with perspiration as this will redden it. Only soft water should be used to moisten the soil.

Treating the soil with muratic acid and noting in bubbling occurs is recommended as a test for an excess of lime but not necessarily a deficiency of lime. No gas may be given off from a soil and yet the growth of crops on the soil may not be increased for several years by the use of lime.

The nature of the growth of plants on a soil is a good indication of its need of lime. Failure or poor growth of clover, alfalfa and sweet clover is very often due to lack of lime. A medium stand of these crops in many cases would have been much improved had lime been applied while preparin gthe ground before the seeding. Some plants such as sorrel are able to grow in soils deficient in lime, and hence subsist where more sensitive ones fail. For this reason the presence of much sorrel is considered an indication of a sour soil.

As pointed out on another page of this bulletin most farm crops are favored by the presence of an abundance of lime in the soils, the effect being especially noticable on alfalfa and sweet clover. Consequently the most satisfactory method of determining the lime needs is to apply some form of lime in dieffrent amounts and carefully note the results obtained. If ground limestone is used the trial applications should vary in amount from one to three or four tons per acre. If the hydrate is employed strips of land should receive amouns ranging from one-fourth to one ton per acre.

How to Apply Lime.

Lime to be most effective must be thoroughly worked into the soil. A thorough incorporation with the soil mass results in the root system of the crops grown coming in contact with larger areas of limed soil. Powdered limestone, marl or hydrated lime should not be applied to wet soils, since the particles form small groups thus markedly slowing up their actions Usually best results are obtained when lime is applied to the soil previous to forming the seed bed.

Machines may be employed for spreading lime. One type is attached to the wagon which carries the lime while the other runs on its own wheels as a separate machine. The latter is in most favor because it can be operated by one man and with less horse-power than is required to draw the farmer and the loaded wagon.

This type of machine may be produced on the market or may be made by a blacksmith and carpenter. A complete description of the plans for making a spreader for ground limestone is presented in Illinois Agricultural Experiment Station Circular 110.

Although ground limestone and hydrated lime may be distributed from the wagon or heaps in the field by means of a shovel, it is usually advisable to employ a machine since its use results in a more uniform distribution when somewhat smaller applications are required.

If the caustic or stone lime is used it is generally advisable to place it in small heaps about the field and cover these with moist earth until slacked and then distributed by means of a shovel. If the lime is not too lumpy it may be distributed without this treatment.

Marl may be applied to the soil with a shovel, a manure spreader or if dry and sufficiently pulverized with a lime spreader. In the use of the manure spreader precaution should be taken to prevent overloading. Some apply marl and manure to the soil at the same operation where the heap of marl is accessible, thus saving an appreciable amount of labor.

Other methods of making more efficient use of labor may be employed. The limestone should be hauled at once thus releasing the car and avoiding demurrage. Arrangements should also be made to spread the lime as it comes from the car thus saving the labor of a second handling. This can often be accomplished cooperatively, that is if neighbors order lime and assist each other in hauling and spreading t.

Where the lime is hauled two miles or less two men, a driver and two teams with three wagons and one lime spreader can take 20 to 30 tons from the car and spread it in two days. One man is kept in the car loading the lime into a wagon. The driver with one team hauls the loaded wagon to the field, leaves it, and takes an empty wagon back to the car and returns with another load. The other man remains in the field and spreads the lime. If the field is large the load may be hauled to the middle line of the field and the distributor filled at this point. Other labor saving plans that are suitable to local conditions doubtless can be worked out.

Dry lime should not become moist before its distribution. It is frequently impracticable to distrbute lime when it is removed from the car thus necessitating its storage. Under such conditions it is advisable to cover it in some manner inasmuch as less labor is required to distribute it in the dry than in the wet condition, when it readily passes through the distributor and in addition the finer grades do not become lumpy.

If bags of lime are stored or piled in the field much labor may be saved by properly arranging the bags in the heaps. If the bags are stacked so that a maximum number may be taken fro ma higher plane and placed upon an adjacent lower plane an appreciable amount of labor may be saved in handling. This may be accomplished by erecting one heap to a convenient height, the thickness being the length of a sack. Joints should be formed at the ends in order to hold the bags in place. A second heap is built parallel and adjacent to the first and to the same height. Then boards may be placed thereon and additions made to the first until a convenient height is again reached. Usually about eight feet is the most practicable height to attain. In removing the bags the reverse order from stacking should be followed.

Usually considerable time and labor is wasted when the lime is taken from the bag and placed in the lime spreader. A convenient scheme is to obtain a corn husking hook that can be fastened on the right hand; the bag is placed on the screen of the spreader on edge. By means of the hook an opening is made along the flat side and near the center, perpendicular to this slit and again near the center of the flat side of the bag another opening is made. The lime may readily be removed by turning the split side of the bag downward upon the screen.

When to Apply Lime.

Since legumes are on the whole more sensitive to a lack of lime in the soil than other crops it is generally considered best to apply lime preceding these crops. When clover or alfalfa is to be seeded in wheat or rye the lime should be spread after plowing and worked into the soil when the seed bed is prepared. If the seeding is to be made with oats or barley the lime may be applied in the spring and worked into the soil. When alfalfa or sweet clover s seeded without a nurse crop the lime should be applied as soon as the ground is broken up so that it may become thoroughly worked into the soil by seeding time.

When vetch is seeded with rye the lime should be spread immediately after plowing. In case the land is not plowed for any of the above crops but is prepared with a disk or springtooth harrow, the lime should be applied before the soil is worked.

(Continued on page 928)

THE MARITIME FARMER

And Co-operative Dairyman
Registered Trade Mark
Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

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DATES OF ISSUE.

June	**10-24**
July	8—22
August	5—26
September (Exhibition Reports)	9—30
October	14—28
November	11—25
December (Xmas)	9—23

JUNE 10, 1919

MOTTLED BUTTER

Mottled butter is frequently found on the market at this time of year, and, even though it may be of very good flavor, it is strongly discriminated against by the purchaser. As this defect is one of workmanship, it can be overcome by the application of proper methods on the part of the buttermaker, because mottles are caused primarily by an uneven distribution of salt in the butter. This may be produced by insufficient working of the butter, or by churning, washing, and working it at a very low temperature, or by washing or working it at a temperature several degrees higher or lower than the churning temperature .

When the quantity of butter made in one churning is much less tha nusual it is necessary to work it a greater number of revolutions of the churn than usuol in order to produce the same results on the butter. Extremely low temperatues of churning, washing, and working should be avoided, because they produce so firm butter that it is only with great difficulty that the salt can be worked uniformly into it. High temperatures of churning, washing, and working must also be avoided to prevent an abnormal loss of fat in the buttermilk and also the making of a greasy leaky butter.

Great variation in temperature during the manufacturing process should alwals be avoided. Under normal conditions the temperature of the wash water should be the same as, or within 2 degrees of that of the buttermilk.

FARMERS' CLUBS DEVELOP PUBLIC LEADERS

The attendance upon fairs, stock shows, agricultural conventions, granges and farm clubs constitutes a training school for public usefulness in large affairs that perhaps is not esetimated at its full value. Especially is this true in connection with an objection urged against farming as a business by those who say that its isolation removes one from the larger activities which engage progressive pepple, and that farmers have "no chance." Opportunities in the country are regarded by superficial critics as so narrow that however great ones' ability no entrance can be found into avenues of wide influence and positions of public trust.

For those who think in this groove it may be of interest to consider a certain farmers' club, with a membership of twelve families, founded almost thitry years ago. This year one of its members is president of the state board of agriculture; another member is president of the state horticultural society, while a third is the presiding officer in the upper branch of the state legislative assembly. Shall the scoffer say that this is "an interesting coincidence" or a curious "accident," or rother should the fact of three members in state offices be ascribed to the large opportunity for wide thinking and better training in getting on with people which resuls from a long-continued and organized association together in a live farmers' club?

For the onlooker, attending conventions becomes an absorbing pastime when it is not something more serious; a keen relish is found in observing the evolution of the leader, and whether the meeting is considering animal production, taxation, or a local celebration, the chances always are in favor of the man who can speak with some degree of clearness, and in a manner that combines courtesy with confidence in his own viewpoint.

The most plausible explanation of the vitality and formative influence of the farmers' club, to which referensce is made, rests upon the fact that the service and interest of the entire family have been enlited through the plan of limitel membership, which puts upon each family once during the year the duties of host, and preserves the feature of meeting in homes and thereby secures a personal and family loyalty and an individual responsibility thta are lost whenever an organized group grows to require a public hall.

A club which includes the family represents a foundation as broad as life, and suggests topics of conversation at home to bring out every phase of the art, the science and philosophy of a business that uniquely combines living and making a living. So it is that the club "maketh a full mna," one fitted for leadership. The measure of usefulness, however, is not in election to public office but rather in the quality of leadership in local enterprises that interpret the meaning of country life.

DON'T BE A "MOSSBACK"

The world was never less friendly to the "mossback" than it will be in the days to come. The man whose habits of thougth are set and whose minds is closed to the changes about him, will have a difficult time. He will be a dragchain on a world that is moving at a rapid pace. And the world will not cease to move.

Unfortunately there are mossobcks in every realm of life, business affairs not excluded. They are the persons who become fixed in their way of thinking once for all, like concrete poured into a mould; and they never change thereofter. The world advances ,but they stand pat. They are the sworn foes of any ideas that are new. Failing to comprehend a new idea, they usually take the alternative of fighting it. It is a simple maxim that in a world forever changing, it is necessary to adapt one's thought from day to day. Yet this is the fundamental truth which your mossback always fails to grasp. He relies on the "tried and true" of yesterday and never measures up to the "new" of today.

Don't be a mossback.

Arthur Brisbane once said that a man's mind ceases to grow the moment it becomes incapable of digesting information, just as his body loses its vitality when it can no longer assimilate food. The comparison is a good one to contemplate, for no greater misfortune can befall a man in the world of active affairs, be he twenty-five, fifty or a hndred, than to lose his powers of mental digestion.

We stand at the portals of a new era. The diplomats of the nations are handling matters without precedent. They cannot follow beaten paths, but must blaze new trails.

Business must do the same.

There is an opportunity as never before for the man who is alert and progressive, who can grasp a new idea, digest it, assimilate it and translate it into action appropriate to the day. No less than the problem of making new nations, will be the problems of merchandising in a world that is thrill with life born of a great struggle, among people that have been bestirred by wonderful accomplishments.

Business as well as statesmanship will have to give an account of its stewardship. It must be efficient; it must be up-to-date; it must be wide awake. There will be no room for the moss-back, the standpatter, the rock-ribbed bigot, the impeder of progress. We must keep our fingers on the pulse of the times, and meet out obligations and opportunities by methods atune with the moment.

The open mind will be your best asset in meeting the new conditions. If you are eager in your pursuit of information, if you are hospitable to other men's ideas, if your assimilation is good, and if you can turn thought into action, your chances for personal success in the new and unusual year which we are entering, are all that you could possibly desire.

* * *

"The co-operative movement cannot cease to be missionary or its career is ended. It cannot measure its results simply by consideration of material benefit to those concerned; it should create a higher view of the proper conditions of industry and should inculcate a preference for goods which are produced under these conditions. It should never cease to pursue and emphasize the great moral considerations on which all our dealings should be based. Material interests do not function property unless they bring with them that increased sense of duty which must ever accompany a large sense of comradeship. In proportion as we know ourselves to be one of many we lose our selfish individuality in a common life, animated by a common purpose."—Dr. Creighton, late Bishop of London.

* * *

When buying your first purebred cow, buy a good one. You need not necessarily pay a high price, but get a cow which gives evidence of being a producer.

* * *

There is no better place to live and grow and win the best things of life than on the farm and the boy who aspires to a place and position in the outside world need not feel that he is handicapped because he was born and brought up on a farm.

* * *

The modern farmer should take his place as a leader in all things. He should be alive to all that goes on about him that he can use to advantage. The farm should be as well planned and as carefully managed as any other business.

Gleanings From the N.S. Department of Agriculture

REPORT OF THE N. S. DEPARTMENT FOR 1918.

The Report of the Secretary for Agriculture covering the main activities of the Department during 1918 has been issued and is now to be had for the asking. These reports are always repltee with interesting and valuable information and this one is no exception. Perhaps there is more than usual in the way of experimental work in this year's. Not experimental work of the obscure type which is mainly of interest to theoretic science, but the most practical type, dealing with the everyday questions of the wide-awake, practical farmer. By way of introducing some of this matter to Maritime Farmer readers and stimulating a desire to have the Report in their own hands, your correspondent in this issue will summarize a few of the matters discussed.

AN EXPERIMENT IN PASTURAGE

For several years the College staff has been setting forth as strongly as possible the desirability of improving the pastures of the Maritime Provinces. On pp 37-39 of this year's Report Prof. J. M. Trueman outlines a thorough test carried out on the College farm during last summer. The outline is lucid, and constitutes a fine argument for the improvement of pastures. The main points made can be stated in a paragraph, although the full details would add much to the story.

In former reports it was shown that after paying interest on investment, cost of fencing and fertilizer, gains on cattle were made at a risk of somewhat less than 5c per lb., whereas stable gains in the same years would cost 15c or over.

In this year's Report Prof. Trueman includes in the costs a very considerable amount of plowing, seeding and manuring done for the purpose of getting part of the pasture in good sod. Even with these extra high charges the cost of gains made per lb. reaches only 5.4c, on pasture whereas stable gains have increased to 20c or more.

It might be said in addition, although it is not included in this particular experiment, that the same principle holds good on the milk production end of the cattle business. Under present conditions Creameries and Cheese factories pay almost as much for butter fat, in summer as in winter. With winter feed very high it needs no elaborate argument to show that it pays the farmer to specialize on summer production. Both Beef and Dairy interests, then, are clamouring for better pasturage. For full details on the test see the 1918 Report, which may be had free. Drop a post card to the Secretary for Agriculture, Truro, N. S.

ROYAL BLOOD AT THE COLLEGE FARM

The Queen of Canadian cows is "Jemima Johanna of Riverside". Her photograph occupies the full front page of the "Farm and Dairy" for April, from which paper we quote the following:—"Jemima" is the new champion in Canadian Record of Performance, having just completed her year with over 30,000 lbs. of milk and 1250 lbs. of butter. She displaces the Jersey, Sunbeam of Edgeley, that has held the premier position in butter production for several years with 926 lbs. of butter fat, equivalent to 1157.5 lbs. of 80 per cent butter. In milk Jemima replaces the Alberta cow, Queen Posch Wayne. She has some wonderful records made eight months after calving, producing in seven days 25.23 lbs. of butter; 30 days, 101 lbs. butter; 60 days, 199 lbs. butter."

It is a striking testimony to the competence of the College management in their avowed policy of keeping the very best available foundation stock, that they have on the farm at Truro the Dam, "Jemima Wayne Sarcastic", and three uterine sisters of this new champion cow. These are high up in the aristocracy of Dairy cows not only in Canada, but in the world. The cows which have made greater records than the above are very few, if, indeed, any have done so under similar conditions.

NIT. OF SODA ON RUN OUT FIELDS

In the Annual Report for 1918 Prof. Trueman on pages 28-33 sets down in tabular form the results of an experiment in fertilizing a field of oats on a badly run out and badly drained farm. Unfortunately for the best results the crop was not harvested until October owing to wet weather. This caused considerable loss, so that all yields are small, but the relative results are well worth noting.

Almost every possible mixture of fertilizer was used in the experiment, the details being fully set forth in the report. The outstanding fact to be noted here, however, is that the use of 100 lbs. of Nitrate of Soda per acre gave an average increase in yield of 11 bushels.

It is worth noting that in this case the Nitrate was applied at the time of seeding, but other experiments have proven that at least equally good results can be obtained when the crop is up several inches. A condition to be carefully observed when applying it to growing crops is that the day and the plants be dry, to guard against burning.

In watching the growth of the grain on the experimental plots during the summer a marked difference was very plainly to be seen between those which had and those which had not received the Nitrate application. The extra vigour, thickness and height of the oats caught the eye at once. The value of the extra grain and straw resulting from the use of $5.50 worth of Nitrate amounted to $12.66. Every practical gardener knows its value on high priced crops, but this experiment demonstrates that it can be profitably used on the grosser products.

During the war and until recently nitrates were very difficult to obtain. Large quantities are now being released, and the Imperial Munitions Board, with headquarters at 56 Church St., Toronto, are advertising heavy supplies for sale.

DR. MELVILLE CUMMING

In conferring the degree of L.L.D. on Principal Cumming at its recent Convocation, Dalhousie University paid tribute not only to his personal worth, but also to the vital function of Agricultural Education which has claimed so large a share of his time and energy. It is given to few men to serve their generation in such a variety of interests and activities as Dr. Cumming is serving his. He is, above all else, however, the champion of the rural community and the advocate of its well being. Amid the multitudinous duties of his dual position as Secretary for Agriculture and Principal of the College, and all the demands which evolve out of a thorough experience and a reputation for good judgment, Dr. Cumming finds time for that careful analysis which alone can yield reliable data in dealnig with so complex a matter as the modern rural problem. The College at Truro, in itself and in its politics, is performing an immesurable service to the country by fostering in its students a high appreciation of Agricultural Education, and by fostering in its students a high appreciation of all round citizenship. Congratulations and best wishes to Dr. Mellville Cumming.

GREEN FEED FOR CATTLE

The foresighted farmers needs no urging to take measures now against the dry and failing pastures of the average August and September. Now is the time, and not a moment too soon, to get ready and sow a reasonable area of some green supplement to feed in those months and to store as silage,

One of the very best possible crops for this purpose is the oats, peas and vetches (O.P.V.) mixture. It is a hardy and sure crop, yielding on good land about 10 tons to the acre, and on analysis showing up finely in food qualities. Moreover, it is a crop which requires no cultivation during the season of growth, and no curing for the silo. It must be remembered however, that this is an unprofitable crop on poor land.

The O.P.V. mixture is sown in the following proportions:—2½ bus. oats, ¾ bus. field peas and 1/3 bus. common vetch, making a mixture of a little over three bushels, which is about the right amount to sow to the acre. It should be sown as early as possible.

The next crop for this purpose is fodder corn. This is not so reliable in some parts of the Province, but good results have been obtained in a succession of years at the College Farm, Truro. The yield runs up to an average of about 11 tons t othe acre, cultivation during the summer months being, of course, necessary. It is sown about the first of June. The varieties which have proven best in this vicinit yare Longfellow, White Cap, Yellow Dent, Golden Glow and Wisconsin No. 7.

INSECT PESTS

An incalculable loss is suffered year by year through the ravages of insect pests. Many of these are now well under control. Their life history is known and they are attacked at the point in their career at which they are most susceptible to poisons or other destroying agents. New forms are continually appearing, however, and there is no end in to the fight.

This season the Entomological Division of the Department of Agriculture at Truro is sepcializing on three types which seem to be on the increase, and about whch little is definitely known. These are the Carrot rust fly, the Pea moth and the Onion maggot. A considerable plot of ground has been set aside for experimental purposes and Prof. W. H. Brittain, with his asistants, have some twenty odd poison mixtures ready to test out during the season. Farmers and gardeners over the country will watch with eager interest for announcements of results.

A word may be added about an old foe, the Cabbage maggot. Effective preventive remedies have recently been discovered, but these will not be available to the public in any quantity this seasoi, so the best preventative measure within the reach of all is the tar paper disc. These are now manufactured for the purpose, ready to put on. Failing to obtain them, however, but a sufficient amount of One Ply Tar Felt. Cut in squares or circular form with a slit to slip over the stem of the plant. Where the plant rests at the center cut in criss cross fashion so that the plant will not be injured, but be careful that the fit is good and the disc lies level, for a very small opening down by the stalk will admit the fly that lays the fatal egg. The habit of the fly is all that need be remembered in order to frustrate its design. The fly alights on the stalk. head up, then thrusts her abdomen down along the stem and deposits her eg gbelow the surface of the ground. Prevent this operation and you will save your cabbage.

DAIRYING IN N. S. SCHOOLS

A few years ago while carrying on Record Center work in the western parts of Pictou County, Mr. H. R. Brown, of the Federal Department, was impressed with the idea that Dairying to be successful must be taught in the schools. He aroused the interest of a number of teachers, and outlined some lessons on the subject which were put on by those teachers. At the end of the term prizes were offered for the best essay on Dairy work. A two years' trial of this method demonstrated its usefulness, and Mr. Brown prepared a Bulletin—"Short Lessons on Dairying," which was published in 1918 at the expense of the Nova Scotia Department of Agriculture, Dairy Division. Professor DeWolfe, Director of Rural Science, realizing the importance and adaptability of this bulletin, brought it to the attention of fthe Rural Science teachers. These teachers, of whom there are eight covering the province, took special lessons in Dairying at the Agricultural College, and the Dairy Division supplied each one with a milk testing outfit in a suitable carrying case. As they go from place to place they give demonstrations and set such practical problems as are contained in the bulletin all with the object of acquainting the scholars with at least the rudiments of scientific dairying.

Many Agricultural Eocieties, progressive farmers and business men, as well as Creamery corporations, seeing the value of this work, are contributing prizes for competition in each county or district, to be awarded to the writer of the best essay on the subject. To crown it all the Dairymen's Association is this year offering a grand champion prize of $20.00 for the best essay in the whole province.

THE POULTRY FLOCK

In the keen competition of the modern world of commerce and mnufacture the difference between success and failure is often simply whether or not there are loose ends and overlooked details of loss. The firm which succeeds in stopping leaks and utilizing by-products is pretty certainly on the highroad to profits. Possibly in lesser measure, but with no less certainty profit or loss in farming is determined. We have a known numbers of farmers whose margin of gain, which in time made them fore handed and independent, came from the poultry flock, the strawberry patch and the early vegetable field.

Among these smaller side lines in farming probably the products of the poultry pen have shown a greater advance than those of any other. The old days of abundant cheap feeding material, of course, are gone, but a fair-sized flock with good management may still send a boy to College in a very few years.

Records of flocks in both town and country localities are summarized in this year's report of the Secretary for Agriculture. The general conclusion from all taken together is that a well managed flock will turn in a net profit of $2.00 per fowl. To do this they need no heavy expenditure in the way of building or equipment, a simple, sanitary house kept clean and dry is all they ask in the way of shelter. There are certain well defined articles of diet which they must have to do their best. There must be regularity in attendance, and opportunity for exercise. They attend to the rest. There is no better training in habits of industry and business efficiency for the juniors of the family than the management of a flock of hens. By the way, this 1918 Report of the Secretary for Agriculture is a gold mine of information on this and many other farm topics. Why not get a copy? They are to be had for the asking. Drop a card to the College at Truro, or to any member of the local Legislature.

WINTER INJURY TO FRUIT TREES

(Address by Prof. Crow, of O.A.C., at Ontario Fruit Growers' Convention)

Winter Injury to Fruit Trees is not an unusual occurence in Ontario and other countries having low winter temperatures. Fortunately for the fruit growers the losses due to low temperatures are usually not heavy. The winter of 1917-18, however, proved an exception, and great losses to our fruit plantations occurred in every part of Ontario. It is quite safe to say that thousands of trees were killed outright and hundreds of thousands were damaged more or less. The full extent will not be known until after next summer, as many which were not killed outright last winter will likely die before the close of the next season.

Nearly all kinds of fruit trees were injured, the extent of the injury varying with the locality, the kinds and varieties grown. From Toronto eastward to Belleville the loss was heavy —in some cases as many as 50 percent. of the trees in some apple orchards being killed. In other cases the loss wis lighter. As a general statement one could not say that the loss in apple orchards in this section averaged over 20 per cent. From Torronto westward and southward the damage in apple orchards was not so heavy as in the east, but nevertheless it was heavy enough to cause appreciable loss to growers. In the warmer parts of the province the chief loss to apples occurred in young orchards which had been cultivated late in the season. In the northern apple sections, e. g., Simcoe County, considerable loss was experienced, excepting in orchards which were very well protected.

European and Japanese plum trees were quite badly killed in the Ottawa district. The American varieties, however, came through in good condition. In the Niagara district plums were not badly damaged, although in other section some loss occurred.

The crop of sweet cheries was light in 1918, and this may have been due to the killing of fruit buds. Sour cherries were also damaged more or less; the degree depending upon the latitude. In the colder sections of the province sour cherries were killed outright. At Craighurst, in Simcoe County, Mr. Caston reports that even the hardier Russian varieties were killed. In the warmer section less injury was noticed. As with sweet cherries the crop was light ,the reason for which has been previously noted.

Peach trees in the Niagara district and other peach growing sections were more or less injured. In some sections the loss was quite heavy in young peach orchards—one grower in Essex County losing twenty acres of young trees. In the peach growing area in Lambton the damage was quite heavy, many trees being killed outright and the remainder were badly killed back.

Pears where grown were injured considerably in the colder sections, and even in the pear growing districts some damage occurred, especially on varieties which had been top worked on Keiffer stocks.

Forms of Winter Injury

Nearly all the forms of winter injury noted by those who have studied this question, were seen by the writer during the past summer. These vary in degree from complete killing of the tree to bud killing and include root killing, collar rot, bark splitting, sunscald, black-heart, killing of bark on the trunk, crotch injury, killing of bark on large and small limbs, killing of fruit spurs, killing of fruit buds, and killing back of terminal growth.

Root Killing

The roots of young fruit trees are some times killed in winter, while the trunk and branches are uninjured. Trees injured in this manner usually come out in leaf in the spring, but in a short time the leaves wither and die. If the roots are examined the bark wil be found to be dead and brown. Root killing is caused by deep freezing and is induced by the following factors: Tender root stocks used in propagation, absence of snow or other protective coverings, exposure to strong cold winds, late fall plowing and poor soil drainage. This form of winter killing is generally worse on light sandy or gravelly soil, especially on ridges of the same types. Profesor Macoun states that very little root killing has occurred at the Central Experimental Farm since the root of the Siberian crab have been used for yrafting.

Collar or Crown Rot

Collar or crown rot is so called because the bark near the collar or crown appearsto be dead on a small are a of bark or it may extend all the way round the tree and for some distance above the ground. Certain varieties of apples such as the King, Ontario, Pewaukee, Duchess, Gravensteinfi, are susceptible to this form of injury. Cherry and peach trees are also occasionaly affected by this form of winter killing.

Bark Splitting

Barg splitting may be noticed on Sweet Cherry Trees and on some varieties of aples. The bark is often split vertically from the ground up for several inches; in some cases almost up to the limbs. One of several splits may occur and in extreme cases the bark will split away from the trunk laterally as wel as vertically. A few trees were seen on which the bark could b epulled entirely away from the trunk by taking hold of one of the exposed edges. In apples the Stark and Ontario are quite susceptible to this form of injury.

Crotch Injury

Trees affected with crotch injury showed an area of dead bark in the crotch. This might be confined to the crotch or it might extend clear around the base of the limbs, and in some cases also the trunk just below the crotch. Severad trees were observed on which the dead are of bark extended down the trunk in a long V. shape or in an irregular form. The varieties most affected were Young Northern Spy, Cranberry Pippin, Baldwin, Gravenstein and Scarlet Pippin.

Killing of Bark on Trunk

On many trees the bark on the trunk was found to be dead and discolored. The dead are a might be conned to large pafitches or as was frequently noticed nearly all the bark on the trunk above the snow line was dead.

Black-Heart

This is common trouble on young Baldwin trees in many parts of Ontario and is especially prevalent on trees growing in areas exposed to cold winds. .One grower in Norfolk has lost several hundred Baldwins from Black-Heart. Black-Heart may sometimes appear in the nursery but will also attack older and larger trees. It is generally worse in trees exposed to strong cold winds. The injury is thought to be due to freezing of the sap-wood; t;his causing a dark discoloration; hence the name of Black-Heart. The cambium layer, however, is not injured and continued to form new layers of sap-wood. In course of time, if the injury is repeated, the injured sap-wood may decay and this often weakens the trunk or branches to such an extent that they break down or die.

Killing of Bark on Branches

The bark on the larger branches was often to be affected very much the same as that on the trunks.

Killing of Fruit Spurs

The fruit spurs on many apple and some pear trees in the colder sections were frequently killed back to the branch on which they were borne. Some pear trees were observed where the fruit spurs were killed as described and from near the base of the spur strong vigorous shoots had started to grow, when seen in June.

Kililng of Fruit Buds

This form of injury is not uncommon, especially on peaches and cherries. The buds arc killed by extreme cold or through starting into growth in mild weather and being subsequently frozen in cold snaps.

Killing Back

The terminal growths on young and old trees are occasionally killed by severe freezing. Injury of this kind is generally confined to the previous season's growth but during the past winter it often extended into the older wood. Peahces and some varieties of apple trees are quite susceptible to this form of injury.

FACTORS WHICH PRE-DISPOSE FRUIT TREES TO WINTER INJURY

The question may properly be asked, what are the factors which pre-dispose our tree fruits to damage by low temperatures. As is well known, the primary cause of winter killing is very low temperature, but along with this there are several factors which may directly or indirectly increase the degree of injury. These are given herewith.

Cold Resistance of Varieties

It is a well known fact that there is a great difference in the hardiness of varieties, when grown in the same soil and under the same conditions. The past winter has shown more clearly than ever before, that certain varieties are more resistant than others. In Ontario the hardiest varieties are mostly those which originated in Russit, aCnada or the Northern States. The unfortunate thing in connection with those of Russian origin is that while they are every hardy there are really no first-class apples amongst them. The good varieties of Canadian origin, while hardy enough for most winters are not sufficiently hardy to stand exceptional winters such as the past one.

Exposure to Strong Cold Winds

Trees growing on the sites exposed to strong cold winds were invariably injured to a greater extent than those growing in well protected areas. Examples of this were seen in Norfolk, Prince Edward and in York counties.

Late Cultivation

Orchards which were cultivated late in the season were generally more severely injured than other orchards in the same localitiese where cultivation was discontinued early or where but very little cultivation was given. Late cultivation causes the trees to grow late in the season. In such cases the wood does not ripen properly and hence may be injured by very cold weather. Killing back and bark splitting may be induced by late cultivation. I do not wish to depreciate the value of orchard cultivation by any means, as I think that judicious cultivation will produce good results, but I do think, however, a mistake has been made by cultivating too late in the season. Plowing the soil away from the base of the trees late in the fall is not advisable, as it may pre-dispose the trees to collar rot. If fall plowing is done do not plow the soil away close up to the trees. If the orchard is plowed in the fall, plow so that the soil is thrown toward the trees, not away from them.

Poor Soil Drainage

Trees on poorly drained soils were invariably injured more than those on well drained soils. The fact was noticable in all sections but especially so in the peach growing areas.

Lack of Soil Fertility

Bearing trees growing on soils deficient in fertility were more severely injured than those growing on moderately fertile soils. Of course it is possible to make some soils too rich especially in nitrogen, but this seldom occurs. My own observations and the observations of others who have studied winter injury justify me in stating that many of our bearing fruit trees are pre-disposed to winter killing by lack of food.

Heavy Production of Fruit During Preceding Season

Trees which bore a heavy crop of fruit in 1917 were more severely damaged than trees of the same variety or of the same hardiness which bore a light crop or no fruit during 1917. In Prince Edward Co., the writer saw what appeared to be an example of the relationship of heavy fruiting to winter injury. A Pewaukee tree had the unusual habit of producing a crop of fruit on a central leader branch in one year and the next year the lower lateral branches bore fruit. On this tree the central limb bore no fruit in 1917 and in consequence thereof appeared to be quite healthy, while the lower lateral branches which bore a heavy crop in 1917 were nearly all dead. In Northumberland County a Northern Spy orchard, which bore a heavy crop of fruit in 1917, was badly injured during the last winter, while another Northern Spy orchard nearby on practically the same soil escaped almost uninjured, due largely to the fact that but litte fruit was produced in 1917. Prof. Macoun, of the Central Experimental Farm, gives some interesting data on this question. Accurate records kept annually for twenty years show that the heavy bearing trees are much more susceptible to winter killing than those which produce a light yield or no fruit at all.

Insect Pests and Plant Diseases

Insect pests and plant diseases which attack the foilage of fruit trees often weaken the trees considerably by nterfering with the gromth processes, which are necessary for the proper maturity of wood and thus predispose the trees to winter injury.

HOW CAN WE PREVENT A RECURRENCE OF THESE LOSSES

Fruit growers everywhere are asking the question.—What can we do to prevent a recurrence of the losses of the past winter? This problem is not easy to solve as we have no reasonable assurance that similar climatic conditions may not return and cause further losses. Until we can produce by plant breeding and selection, good varieties that are hardier than any we now have, we cannot hope to escape some loss by winter killing. This work is of necessity very slow and cannot be undertaken with the hope of immediate returns by the fruit-grower. Work of this nature is under way at our Provincial Experimental Stations, but in view of the losses which have been sustained during the past ten years and especially during the past winter it should be carried on much more extensively than heretofore. The interest on the capital value of fruit trees destroyed in Canada during last winter would adequately finance an undertaking of this kind. It is quite true that the present generation of fruit growers would not derive much benefit from this work but we should not forget thta we are now reaping the benfit of the labor of horticulturists who have gone before and if we are to do for others as have been done by, we should continue this excellent work and do something for those who come after us.

Good Cultural Practices

The other preventative measures whihc might be employed to advantage are only those which are considered to be the best cultural practices. The value of these cultural practices and principles to be observed in the selection of sites for orchards have been more clearly emphasized by what occurred last winter.

In regard to cultural practices, I would suggest that orchard cultivation be started as early in the spring as the soil can be easily worked. The

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time when cultivation should be discontinued will depend upon such factors as latitude, soil and climatic conditions. As a general statement, I would say that cultivation should be discontinued earlier than is the usual custom except in dry seasons and on lighter soils. In such cases it would be wise to cultivate later than on heavier soils or in seasons when rainfall was abundant. For apple orchards the range of dates for stopping cultivation would vary from early June for the north to July 1st in the southern sections. Peach orchards, of course, should be cultivated somewhat later than apple orchards, up to August 1 in most cases.

Use of Cover Crops

Cover crops exert a beneficial influence in checking the late growth, help to ripen the wood, hold the snow and may prevent deep freezing on light soils.

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Judicious Use of Manures and Fertilizers

Bearing orchards should be supplied with plant food in sufficient quantities to keep the trees in good thrifty condition but care must be exercised, however, to prevent forcing the growth of trees, as this would pre-dispose the trees to several forms of winter killing.

Soil Drainage

The darinage for soils intended for fruit growing is of the greatest importance as a means of preventing winter killing. Soils which are not naturally well drained should be thoroughly under drained. This will pay handsomely as trees growing on well drained soils will invariably give much better results than those on poorly drained soils.

Thinning of Fruit

In seasons when labor can be obtained at a moderate price it will pay to thin the fruit on heavily laden trees. As previously mentioned heavy bearing is a big factor in predisposing trees to winter killing and it would seem that for this reason alone the practice would be profitable.

Thorough Spraying to Control Insects and Disease

Professor Casear and others have repeatedly pointed out the benefit to be derived from thorough spraying as a means of controlling plant disease and insect pests. The experience of the past winter has shown clearly that thorough spraying is of definite value in preventing winter killing by destroying insects and diseases which by their attacks weaken the trees and thus pre-dispose them to winter killing.

Provision of Shelter Against Strong Cold Wnids

A good wind break, properly located, will undoubtedly lessen the amount of winter killing. This applies espceially to the colder sections of the province, but would apply equally well to any section where the orchard was exposed to high cold winds or was located on exposed sandy or gravely ridges. In some of the warmer areas of the province where natural conditions are most favorable or where land is very expensive it may not be necessary or profitable to plant wind breaks but there are many other places where wind breaks would doubtless be worth while. Wind breaks should not be located too close to the trees as they might cause a dead air space in their immediate vicinity and thus cause the development of fungus diseases, such as apple scab and soot blotch. If set back some distance, say from 150 to 200 feet or more the protection afforded would be quite effective and trouble from diseases would be obviated.

Proper Choice of Site

A site for an orchard should have air drainage as well as soil drainage. An ideal site is on a gentle slope (preferably to the north or north east) where the cold air can flow down to the lower areas. One should not locate an orchard in a hollow where cold air settles, as such a site will favor injury to the trees in winter and to the blossoms during cold spells in the spring.

Hardiness of Varieties

With the exception of most of the crab apples and American plums, very few kinds of fruit or varieties have proven absolutely hardy. At Ottawa some of the hardest Rusian sorts were injured. There is, however, a marked difference in the cold resistance of varieties. I am going to give you a list of the varieties which have proved somewhat cold resistant and also a list of varieties which have been rather seriously injured.

Vaireties Least Affected

1—Hibernal; 2—Duchess; 3—Patten's Greeening; 4—Dudley; 5—McIntosh; 6—Yellow Transparent; 7—Wolf River; 8—Wealthy; 9—Haas; 10—McMahon White; 11—Snow; 12—Alexander; 13—Baxter Golden Russet; 14— Scarlet Pippin; 15—Spy.

Varieties Most Affected

1—Baldwin; 2—Ontario; 3—King; 4—Cranberry Pippin; 5—Wagner; 6—Spittneburg; 7—Gravenstein; 8—Hubbardston; 9—Stark; 10—Pewaukee; 11—Ben Davis; 12—Bottle Greening; 13—R. I. Greening.

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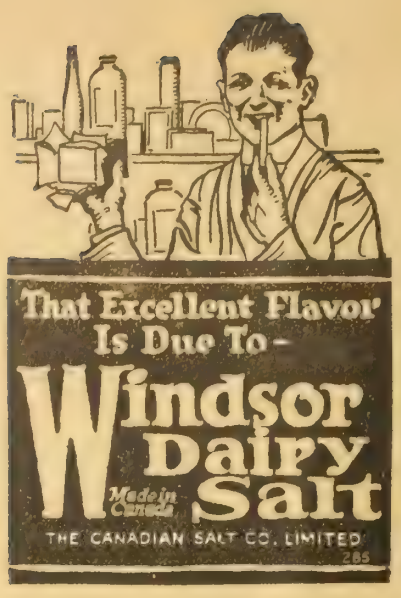

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1. 45—Flavor—acidy; fruity; rancid! tainted; cowy; weedly; bitter; gassy; heated.
2. 25 — Texture — stiff; corky; mealy; weak; lumpy; pasty.
3. 15—Closeness—loose; ragged holes; gas or pin holes; swiss holes.
4. 10—Color—streaky; wavy; mottled; acid cut; high; light.
5. 5—Finish—rough edges; crooked ends; soft rinds; mouldy; dirty box.

Total 100 points

Grades for Cheese

Special Grade.—Score 94 to 100 points. Minimum for flavor 41 points.

First Grade.—Score 92 and under 94 points. Minimum for flavor 39 points.

Second Grade.—Score 87 and under 92 points. Minimum for flavor 39 points.

Off Grades.—Score under 87 points and under 37 points for flavor.

Standards for Grading Cheese

Special Grade

Flavor—Clean, sound and pure.
Texture.—Close, firm and silky.
Color.—Good and uniform.
Finish.—Even in size, smoothly finished, sound and clean surfaces, straight and square.
Boxes.—Strong, clean, well made. If made of wood, ends to be seasoned timber. Close fitting. Weights stenciled or marked with rubber stamps.

First Grade

Flavor.—Not quite clean.
Texture.—Slightly weak or open.
Color.—Uniform.
Finish.—Fairly even in size, well finished, sound surfaces.
Boxes.—Strong, clean, well made. If made of wood, ends to be seasoned timber, close fitting. Weights stencilled or marked with rubber stamp.

Second Grade

Flavor.—"Fruity," not clean, "turnipy" or other objectionable flavor.
Texture.—Weak, open, loose, "acidy," too soft, too dry.
Color.—Uneven, mottled or objectionable shade.
Finish.—Very uneven in size, showing rough corners, black mould, dirty or cracked surfaces, sott rinds.
Boxes.—Too large in diameter; top edge box more than ½ an inch below the top of the cheese. Made of light material. Ends made of improperly seasoned material.

Off Grade

Flavor.—Rancid, badly "off," anything inferior to secnod grade.
Texture.—Very weak, very open, showing pin holes, or porus, very "acidy," very soft or very dry.
Color.—Badly mottled, or very objectianable shade.
Finish.—Anything worse than second grade.
Boxes.—No question of boxes sufficient to make third grade if other qualities are good.

MAN OR MACHINE; WHICH IS AT FAULT?

It is not the most unusual thing in the world to find in the same neighborhood—maybe only two or three lots apart—two farmers who are both owners of milking machines, likely as not of the same make, but who have developed radically different opinions about the merits of their respective investments. One of the men may be using his machine, two, three, or perhaps four, times a day, simply cannot say enough good things about it, and gives the impression that he is just about as well pleased with his bargain as it is possible for a human being to be. On the other hand, a look in his neighbor's barn indicates a different state of affairs; his milking outfit, or what is left of it, is piled up in a heap in an out-of-the-way corner of the milkroom, more or

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less hidden undera heavy coating of dust. The general appearance of the wreckage makes it quite unnecessary to ask any qusetions about what has happened; in fact, it might be a rather risky business to bring the matter up at all. The big question mark is, where in the world does the big difference come in? How is it that one man can purchase a mechanical milker and turn it into a big business asset, while his neighbor promptly throws his machine into the discard? Both men are rated as good farmers, and have both made a go of the dairy business, but when it comes to handling a milking machine—well, the reader knows the story.

The Man or the Machine?

There must be some explanation for this sort of thing, but where? Could the trouble be in the machine? Hardly reosonable to put the blame there, is it, when others have found it a first-class proposition? Evidently the trouble lies with the man—"the man behind the gun" if you like! The milking machine, perhaps more than any other piece of machinery around the farm, pays a high premium for a little bit of care and patience, and levies a correspondingly heavy toll for any sort of neglect. Carelessness in the matter of washing the machine sends the bacteria count of the milk high, and brings a complaint from the cheese factory or creamery. Lack of attention to lubrication and other such details about the engine and pump pave the way for other trouble—poor vacuum and all the rest of it. Running the machine too fast does not give it the proper chance to do good work, the trouble often being that the pulsator is working too fast to allow time enough for the inside rubber tube in the teat cup to collapse and release, the effect being to produce a steady suction instead of the intended pulsating movement.

These are a few of the common troubles which often lead to machines being "blacklisted" by their owners, when the fact of the matter is that the man behind the machine fell down on his job. Don't be in a hurry to condemn your machine until it gets a good, thorough tryout with working condiitions just as near what they should be as can possibly be arranged.

IMPORTANCE OF GOOD VENTILATION

No doubt everyone wil admit that the proper ventilation of stables is of the greatest importance. More mistakes have been made in the attempts to ventilate stables than in almost any other part of their construction. We believe the reason has been that the fundamental fact in the movement of the air, and the cause of currents, has been ignored. Another reason is that it is a vrey difficult matter to ventilate in such a way that the temperature does not become too low for th ecomfort of the stock. If the animals are kept too cold, they will require more feed, if they are expected to produce to their full capacity.

In ventilating a stable, two things are necessary, the first being to get rid of the foul, impure air, the second to get fresh, pure air to take its place. There is a difference of opinion as to how these conditions can best be attained. Some experienced dairymen claim that the foul air, which is always the warmer, must escape at the top of the stable, and the cooler air must enter at the bottom. In order to accomplish this, openings near the ceiling of the stable must be made, these openings to be regulated by slides so that the quantity of air escaping may be controlled, as the weather may happen to require. The foul air flows out of these openings, and a current of pure, fresh air flows in at the openings near the floor, which are regulated the same way as those above.

To spread the flow of air, the openings should not be directly over each other, but should be placed alternately, thus preventing drafts on the cows, and circulating the fresh air equally over the stable.

There are also some experienced dairymen whose ideas of proper ventilation are directly opposite. They advocate that the foul air of the stable is heavy, and tends to sink rather than rise, and that exit ventilators should run from within a foot of the floor to the roof, while the inlet for fresh air should open near the ceiling of the stable, thus allowing the pure air from the outside to permeate the warm air before coming in contact with the animals.

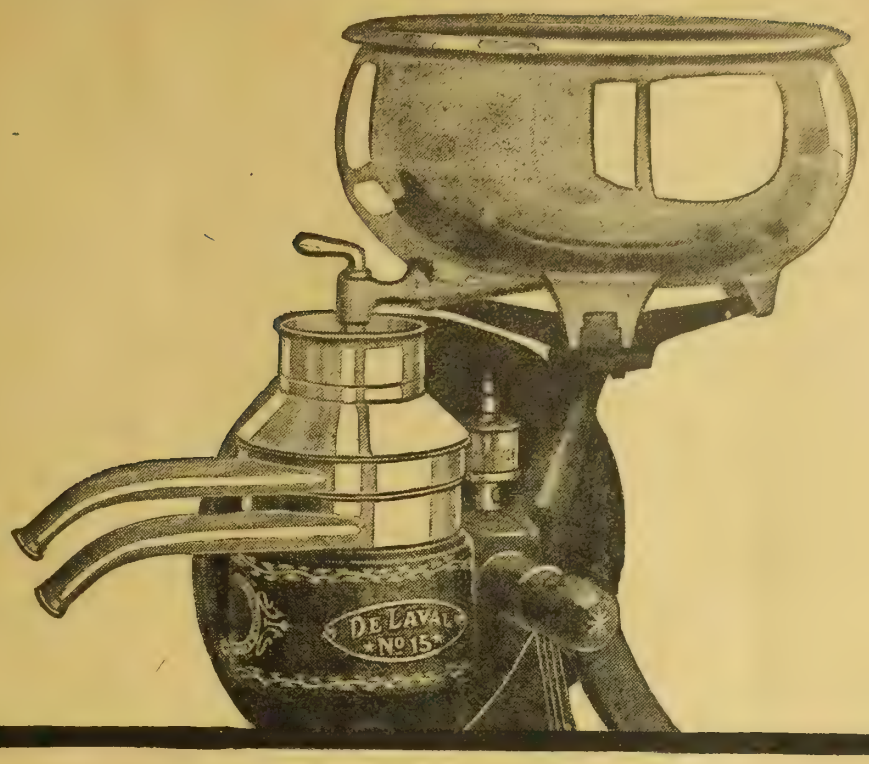
A clean stable will not require as much ventilation as one that is not kept clean, as there will not be so much foul air to be removed. The much dreaded disease, tuberculosis, is greatly encouraged by bad air, by which the lungs are made susceptible to the action of the germs of it, which are carried from place to place, and thus cause the disease in cows that might otherwise be able to resist the contagion.

When one enters the stable in the morning, and feels the air to be warm, heavy and foul smelling, it is a sure sign that immediate ventilation is necessary. This can be done by opening the doors and windows, but ventilation is not perfect until there is some system of automatic ventilation, which keeps up a steady suply of fresh, pure air from the outside, and at the same time discharges the impure air from the inside.

BACTERIA IN MILK

A fruitful source of bacteria in milk is the strainer. Brass strainers are sometimes placed on milk pails. These are often so filled with dried milk that the fresh milk flows thrugh but slowly. Often a cloth strainer is used and washed after each milking. If this is not washed carefully with cold water, then with soap or cleaning powder and warm water and then thoroughly scalded, it becames a prolific source of contamination. The strainer after having been scalded, should be hung in the sunshine to dry and air.

It should be the aim to breed for the largest yield of milk at the time when butter fat is worth the most money. The animal should be allowed a couple of months' rest when butter fat is lowest.



The cream of cream separator prosperity goes to De Laval users

There was never greater need than right now for the best separator, skimming cleanest, having greatest capacity, turning easiest, requiring least care, and producing the most perfect product. In all these respects the De Laval has no equal. Take nothing for granted, simply let it be demonstrated to you. See the local De Laval agent or address the nearest general office.

THE DE LAVAL COMPANY, Limited

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA

MONTREAL PETERBORO WINNIPEG VANCOUVER

LIVE STOCK.

SHORTHORN SIRES WILL HOLD THE SIZE

The supreme test of any beef animal is its ability not only to improve the quality, but to increase the size of the progeny of all kinds of cows with which its bulls may be mated, and teh Shorthorn, wherever it goes, carries with it the reputation of maintaining its size even in the hands of carless farmers who are but indifferent feeders. To maintain size under skillfuf selectoin and liberal feeding is quite different from maintaining it where the blood is diluted and the treatment not over generous, but we find the Shorthorn holding its size to a remarkable degree under the hardest conditions.

In connection with this question of size the following table from "Feeds and Feeding," by Henry and Morrison, is a most interesting one:

Age, weight, and daily gain from birth of steers slaughtered at the Smithfield Show, 1895 to 1914.

Breed	No. of Animals	Weight Lbs.	Daily Gain Lbs.
Shorthorn—			
1 year old.....	85	1446	2.14
2 years old	91	1901	1.88
3 years old	4	2363	1.71
Aberdeen-Angus			
1 year lod	93	1416	2.11
2 years old....	86	1848	1.83
3 years old....	2	2066	1.57
Galloway—			
1 year old	72	1229	1.86
2 years old....	73	1655	1.63
3 years old....	2	1794	1.44
Red Poll—			
1 year old	52	1254	1.90
2 years old....	54	1637	1.90
3 years old....	3	1736	1.38

It will be noted that in each section the Shorthorns lead in weight and average daily gain. Size is not everything, but it may mean the difference between profit and loss to the farmer who knows from experience that slow growing kinds are not a good proposition from the standpoint of profit.—G. E. Day, Sec'y D.S.B.A., Guelph, Ont.

HEMORRHAGIC SEPTICEMIA ATTACKS LIVE STOCK

Owing to the prevalence of Hemorrhagic Septicemia which is at present affecting cattle and sheep in different parts of the Canadian West, and cases of which occured in Ontario last year this article by Dr. W. E. Martin, Professor of Veterinary Science, Manitoba Agricultural College, will be of considerable interest to stock owners, and be the means whereby they may recognize the disease should it make its appearance among their farm or range animals:—

In all animals this disease is very infectious. The microorganism belongs to what is known as the Pasteurella group. There is a special germ of the species responsible for the disease in each of the animals susceptible to infection. In cattle the germ is known as Vovisepticus; in sheep the Ovisepticus. The soil becomes infected with the germ; hence susceptible animals are infected through grazing on infected pastures or by fodder grown on such infected lands. Infection, as a rule, takes place through the digestive swstem.

The disease presents itself in four different forms in all kinds of domestic animtls, including cattle, sheep, swine and horses. It has been known to attack poultry, birds and wild animals.

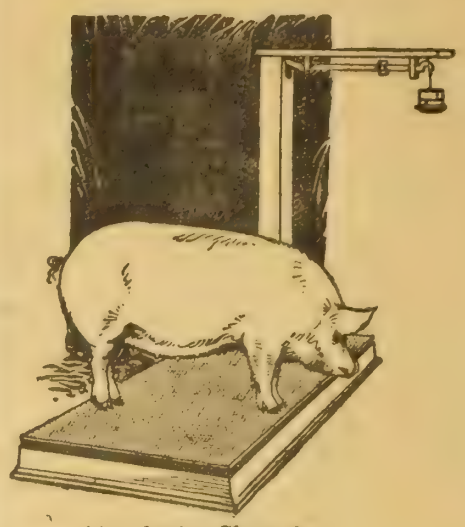
The four different forms are as follows: the Cerebral, Pulmonary, Intestinal and Cutaneous.

The Cerebral form is generally manifested by symptoms similar to blind staggers; animals lost control of their locomotary apparatus, and stumble or stagger into fences or buildings; in fact, I believe, they sometimes are actualy blind from the nervous form of the disease.

The Pneumonic form is characterized by the ordinary symptoms of pneumonia, such as quickened respiration and labored and difficult breathing. There may be a discharge from he nostrils, which in many cases is streaked with blood; the eye lids may be swollen and adhering with a more or less sticky discharge. This form is very fatal.

The Intestinal form is generally manifested by a bloody diarrhoea, which may be of a dark, tarry color. Rapid emaciation follows. There may be evidence of abdominal pain. There may be some delirium, when the animals wil lrun about in an exicted manner. When down, animals manifest severe pains, which is spasmodic. Head an neck may be drawn to one side or over the back. Swellings may appear about the lower parts of the limbs. Bowel discharges are frequently bloody. In some cases there is a discharge of bloody mucus from

Feed for the Quality Prices!



The Scales Show the Quality Feeders

HOG feeding has made rapid strides just the same as everything else on the farm. The old-fashioned method of utilizing mill feeds that happened to be easy to get at low prices, or happened to be handy on the spot, is gone forever. Both experts and farmers now know it pays handsomely to feed an accurately and properly mixed ration. Experiment and experience have shown that careless feeding is one of the causes of poor quality bacon. The markets are demanding higher quality standards. There are attractive profits if you can reach the standards required. You can do it with

Monarch Hog Feed

It is a perfectly balanced ration of corn products, shorts and digester tankage—a rich feed, but not too much so to feed alone.

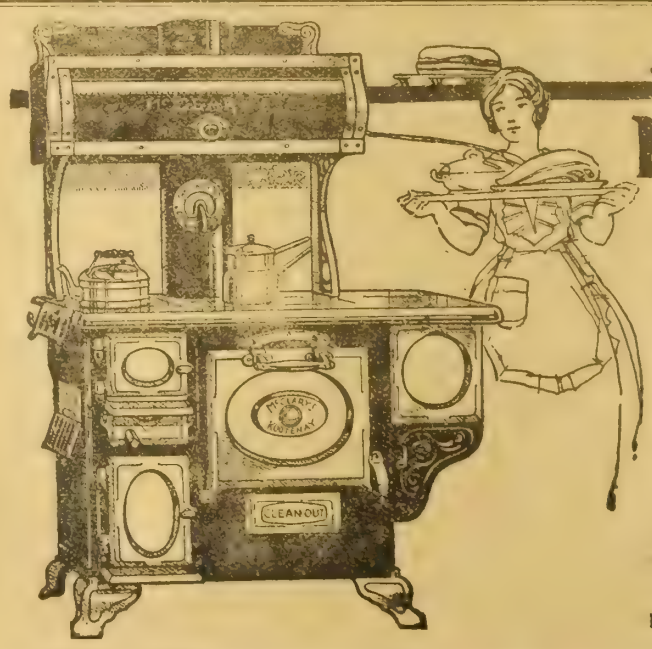
It gets hogs to market in shortest time, at least cost of production. It means heavier hogs sent to market in best condition for selling. It is easily digested. Hogs fight for this palatable feed. Guaranteed analysis: protein 15%, fat 4%.

Mill feeds are often hard to get, but Monarch feeds—ready for use—are always obtainable. Order a ton from your dealer. If he cannot supply you, write us direct, giving dealer's name.

MONARCH DAIRY FEED
has guaranteed analysis of 20% protein and 4% fat. It is a properly mixed combination of Oil Cake Meal and Cotton-seed Meal with the bulky feeds, bran and corn meal. Though very rich, ensuring splendid results, it can be fed alone.

SAMPSON FEED
This general purposes feed is somewhat similar to Monarch Hog Feed, except that oil cake meal is used instead of digester tankage; it gives results for both cattle and hogs. Guaranteed analysis: 10% protein and 4% fat.

The Campbell Flour Mills Co., Ltd., West Toronto 15



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It takes the "EARNING" Out of the "CHURNING"

THE FAMOUS

RELIABLE CHURN

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The "Reliable" Churn operates with the efficient "Dash" motion, but with a high-geared rotary drive.

The "Reliable" is easy to keep clean, the double glazed, white stone jar lifts right out for washing.

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the nostrils. This form is also very fatal.

In the Cutaneous form there is usually more or less welling in the region of the fore quarters, throat, and dewlap. The swelings, as a rule, are not very extensive. Anomals that are inclined to feed swallow with difficulty, if at all. In milch cows the seretion of milk is arrested. There is a general indisposition.

In certoin animals of a herd the symptoms of the four different forms of the disease may be present at one time; in others the symptoms of two or three forms may be combined.

The disease in acute form may cause death in from twelve to forty-eight hours.

As a means to preventing the spread of the disease, healthy animals should be removed from the sick ones, and from infected places to premises known to be free from the disease. Infected places to premises known to be free fro mthe disease. Infected places should be thoroughly disinfected.

Fatal as the disease is when left uncontrolled, it can be stamped out and many of the sick animals saved by the use of Bacterins prepared especially to combat the disease. There is a special Bacterin (Vaccine) for each species—cattle, sheep and swine.

In cattle Hemorrhagic Septicemia may be confounded with Blackleg if due care be not exercised in making correct diagnosis. Blackleg usually attacks animals from four months to three years of age. Hemorrhagic Septicemia, while attacking mostly young animals, also affects adult or older cattle. In Blackleg there is usually well marked lameness in one or more legs, due to large swellings of the quarter of the lame limb. If the hand be pased over these swelings a crepitating sound is heard, due to the gas formation in the tisues. In Hemorrhagic Septicemia the sweling if present, is of slight dimensions and seldom crepitate; and if the animal is lame, the lameness is not accompanied by extensive swellings. In Blackleg the body temperature is high at the onset of the disease. In Hemor rhagic Septicemia the temperature is usualy normal at the commencement but becomes high as death approaches.

In some outbreaks, individuals of a herd may be affected with both diseases at the same time. Where there is any doubt as to whether a herd is affected with only one or with both diseases all animals between the ages of four months and three years should be promptly immunized with the Blackleg Filtrate and at the same time these and al other animals of the herd should be vaccinated with Hemorrhagic Septicemia Bacterins.

Hemorrhagic Septicemia in sheep is a disease that follows the raising and feeding of large numbers of sheep in almost every country. It is not so prevalent in the newer sheep raising areas but once it gains a foothold, it spreads rapidly and firmly establishes itself on the premises, from which it is very difficult to remoee the infection, as the causative organism lives in the soil and around shelters.

The symptoms in sheep vary as do those in cattle, but the most constant and convincing symptom is the rapid spread of the disease, with a large percentage of the cases dying in from one to six days.

The post mortem in all species of animals varies with the form of the disease the different animals have. There are always more or less red spots from the size of a pea to a walnut, to be found in the lining of the wind pipe, in the lungs and heart. In the Intestinal forms these red spots are found in the intestines, omentum, and peritoneum. In the Subctuaneous form the ered spots are immediately under the skin. In the nervous form the blod spots will be located in the brain and spinal cord. The blood has always a peculiar reddish-purple color when spread hinly over the hand or other white surface.

The carcasses of animals which have succumbed from the disease should be either deeply buried or cremated, the latter being the safer means of disposal of the carcass. Stables and sheds which have been occupied by sick animals should be thoroughly cleaned up and disinfected; al litter and refuse should be burned.

When the outbreak occurs, no time should be lost in procuring the vaccines, or serious losses will result.

Bright Prospects

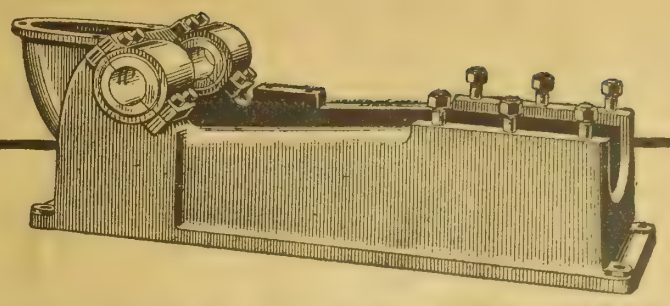
It looks as though the demand for beef will be strong for some years to come, and the man who is in line for greatest profits is the Shorthorn Breeder.

We haven't room to give our reasons here, but write the Secretary for our free publications, which furnish facts.

DOMINION SHORTHORN BREEDERS' ASSOCIATION

W. A. DRYDEN, *President*
Brooklin, Ont.
C. E. DAY, *Secretary*
Box 285, Guelph
Ont. 21

Shorthorns



ALPHA GAS ENGINE has angle bearings

This is the bed of the Alpha Gas Engine, showing how the main bearings are angled.

You can leave the caps off and still run the Alpha—because the thrust of the piston is on the frame itself, *not* on the caps or the bolts. The bearings don't need to be over-tight, and as they are made of highest grade babbitt they will last for years.

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MONTREAL PETERBORO WINNIPEG VANCOUVER

FIGHTING FLIES WITHOUT DOPE

Dairy farmer from Stormont county, Ont., informs the Ottawa Farm Journal that a year ago he tried to fight the fly pest with spray "dope" in his cow barn, "but," he says, "my hired man complained that the flies transfered their affections from the animals to himself. Now and then we had complaints, also, that the milk had a 'dopey' flavor. Furthermore, it was just one more item to be looked afted—the spraying of the animals. We used about half a barrel of the stuff, I guess, before it occurred to me that it would be cheaper to screen the doors and windows. Then we cleaned up the place also and permitted no manure to stand over two days, before being taken away. We didn't see much difference that season because we got too late a start on it but we followed the same process last spring and summer. There wasn't one fly around the stable to where we had a hundred the year before. 'Dope' may be a splendid thing to put on the animals in the morning after milking. It may keep them from being annoyed during the day. But the screened stable and the clea nbarnyard constitute the only effective way of fighting the fly evil so as to provide creature comfort for both men and animals at milking time."

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AN Empire Milking Machine will enable you and your help to spend at least two hours more in the field every day. The absolute uniform action of the Empire Milker soothes the cows and generally results in considerably greater milk flow. It also lengthens period of lactation.

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THE LAWRENCE-WILLIAMS COMPANY, Toronto, Ont.

THE HORSE

TEETH OF THE HORSE REQUIRE SPECIAL CARE FROM TIME OF HIS BIRTH

Every horse that gets thin or out of condition, without fever, or any other apparent cause, should have his teeth and mouth carefully examined, and especially if he drops some of his food while eating. without any indication of a sore throat, or if he holds his head somewhat on one side, in order to get the food between the outer edges of the teeth.

Very little attention is paid to the teeth of the horse by the average man who owns horses. Many farmers who have a keen interest in the welfare of their horses and are careful with the feeding and general comfort of their animals, are often disappointed with the results, as seen in the dry haired, unthrifty condition of horses, which overtake their efforts. An examination of the mouth and teeth would in most cases reveal the cause of the trouble, but it is only the horse owner who has a knowledge of what takes place in the horse's mouth, from birth to five years, then can intelligently examine the mouth.

The Masticating Process

The food of the horse must be ground; simple bruising and champing would not reduce it sufficiently small for the purpose of digesting, Simple champing, which is the motion of the human lower jaw, and that of beasts of prey, would very imperfectly break down the grass, the hay or oats that form the horse's food. It must be put into a mill; it must be actually ground, and without this process being done thoroughly there is going to be trouble with the horse's digestive organs. The man who cannot tell by sound when the horse's teeth are not performing their functions properly when chewing, has something to learn in horse care. He has to cultivate the "ear" to detect the healthy grinding rhythm from the champing sound arising from disordered and defective chewing.

The joint of the horses's lower jaw is admirably adapter for the purpose which the horse requires. It has both the simple motion of a hinge for nipping the herbage, and seizing the hay or oats as well as the lateral or grinding motion to bring the food into a pulpy condition to fit it for digestion.

The Full Mouth

The jaws contain the teeth, which are the millstones in the operation. The mouth of the horse at five years old contains forty teeth, viz., six cutting teeth in front, a tusk on each side, and six molars, or grinding teeth, above and below; they are contained in cavities in the upper and lower jaws, surrounded by bony partitions, to which they are accurately fitted, and by which they are firmly supported. For a little way above those bony cavities, they are surrounded by a hard substance called the gum, so dense, and adhering so closely to the teeth and jaws, as not to be separated without great difficulty. It is singularly compact, that it may not be wounded by the hard sharp particles of the food and almost devoid of feeiing, for the same purpose.

The term, nipper, expresses the action of the two front teeth. Whoever has observed a horse in the act of browsing and the twitch of the head which accompanies the separation of each portion of grass, will preceive that it is nipped or cut off. The growth of the nippers in the foal should be watched so that the teeth markings are understood. At the age of one year and a half the mark in the central nippers will be much shorter and fainter; that in the two other pairs will have undergone an evident change ,and all the nippers will be flat. At two years of age all this will be more manifest. About this period the fifth grinder or molar tooth will push out, and likewise another process commences that invariably gives the young colt trouble.

The Change as the Animal Grows

The first teeth are adapted to the size and wants of the young animal. They are sufficiently large to fil' the colt's jaws; but when the jaws are expanding with the increasing growth of the animal, the teeth are separated too farm from each other to be useful, and another and larger set are required. This change of teeth commences in those which earliest appeared, and therefore the front or first grinder gives way at two years of aeg, and is succeeded by a larger and permanent tooth. In a few instances, however, the second teeth do not isre immediately under the temuorary milk teeth, but somewhat by their side; and then instead of this gradual process of absorption and disappearance from the root upwards, it is only pushed a little out of its place to the fore part of the first grinder and remains for a considerable time under the name of wolf's teeth, causing swelling and soreness of the gums and frequently wounding the cheeks.

During the period between the falling out of the central milk nippers and the coming up of the permanent ones, the colt having a broken mouth, may have difficulty in grazing. If a colt falls away in flesh at this time. it is due to the condition of its teeth, and soft foods should be given.

The tusks are four in number, two in each jaw, situated between the cubbing teeth and grinders, much nearer to the former than the latter. and nearer in the lower jaw than the upper. In shape the tusk resembles a cone, it protrudes about an inch from the gum, and has its extremity sharp pointed, and curved. At the age of four to five years the tusks are peculiar to the horse; mares, however, have the beginnings of them in the chambers of the jaw, and only appear externally in some old mares. There are, however, some mares that have them developed while young, but these mares on the average never prove good breeders. Some mares have trouble with the undeveloped tusk al their life time, and it is generally aggravated by the bit.

The use of the tusks is not evident; perhaps in the wild state of the animal they are weapons of offence; so

ABSORBINE
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will reduce **inflamed, swollen Joints, Sprains, Bruises, Soft Bunches; Heals Boils, Poll Evil, Quittor, Fistula and infected sores quickly** as it is a positive antiseptic and germicide. Pleasant to use; **does not blister** or remove the hair, and you can work the horse. $2.50 per bottle, delivered. Book 7 R free.

ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful, Swollen Veins, Wens, Strains, Bruises; stops pain and inflammation. Price $1.25 per bottle at dealers or delivered. Will tell you more if you write. Liberal Trial Bottle for 10c in stamps.

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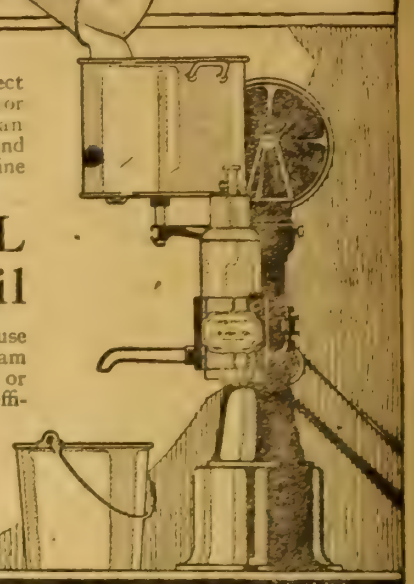

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In cans—sizes 1 pint to 4 gallons.

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With branches throughout every province of Canada, and correspondents in all parts of the world, we have unequalled facilities for gathering news of markets, prices, and business conditions of interest to farmers.

Make it a point to call upon us whenever you have an opportunity.

Mutual confidence brings success.

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that he can more firmly seize, and more deeply wound his enemy. The horse breeder often attempts to hasten the appearance of the tusk, and he cuts deeply through the gum to remove the opposition which that would afford. To a great extent he succeeds in causing pain and does not gain much in point of time in their appearing. Only in specially bad cases from inflammation arising from the growth of the tusks should the knife be used. The resistance of the gum is not like that of a solid and firmly fiexd tooth, and is much more easily overcome by the regular process of nature.

During these important changes of the teeth of the horse, the animal would suffer very little inconvenience if it were not for the fact of his being subjected to domestication and work. This fact should command colser attention by all horsemen, for the teeth of the horse are more necessary to him than those of other animals are to them. Cattle feed gets a second chance, and so also does that of sheep, the dog can bolt his food and thrive on it, human foods are carefully prepared before they are eaten, but the food of the horse must be well ground down, or nutriment cannot be extracted from it.

CURING A REARING HORSE

A writer in Rural New Yorker tells of buying a three-year old colt some twentw years ago. "It had been broken single in the Spring and then been turend out to pasture," he says. "In late summer I traded a work horse for the colt to drive to my work, two miles. I could not stop two seconds before said colt would throw up her head, and if I did not let her go, would rear up on her hind feet, and many was the time I would think she was going to fall backwards. I drove a two-wheeled cart or sulky, and I would step out on the axle so I could wait for her to come down, one way or the other, and only wished she would break her neck and be done with it, as nobody wanted her. My wife would hold her while I hitched the last tug and jumped on the seat; then she would jump one side to keep from being run over. I was doing carpenter work for a groceryman, and he helped me to hitch up at night and gave me advice as to how to handle the horse, which advice I did not take at all, as I was brought up on a farm and thought I knew more about horses than he did. I also thought he had never seen his remedy tried, was just imagination; it was so simple it was foolish to try it. It was to whirl her around, make her dizzy. Well, I thought it was bad enough going ahead without a whirl-around horse.

"In finally finished his work and went to work in another part of the city, and I could get no one to help hitch up. I certainly did have a circus hitching up alone. After about four weeks I met the groceryman one evening as I started for home. I stopped, and it was no time before she was standing on her hind feet. He said: "Have you whirled her around any?" I said nno. He said: "Don't baby that colt any longer; ;p;ut the bud to her and whilr her around till she wil stand; that is the way they break running horses." By that time I was out of hearing, but it flashed through my mind I had never seen a running race but that some of the horses couldn't be kept from making a dash onl yby keeping them circling around back of the starting line. When within one-half mile of home I stopped, and at first sign of rearing up I gave the word to go, pulled hard on the left line and laid on the whilp on her right side just onec. She went around so quick two or three or four times it made me dizzy, and she st ood with her front feet spread out as though afraid of falling down. Before I got home she would stand till I told her to go, but the next morning she tried once as I got on the sulky and I would not let her go to rear up, but as I pulled the left line and put the whip on her and whirled her around she stood for me to get off and on the cart as many times as I had a mind to, and the fight was over. I kept her two and a half year, and never knew her to rear up again, no matter how long I wanted her to stand."

A WASH TO SAVE HORSES' SHOULDERS

What shoulder wash would you recommend for horses to keep them free from sores when at heavy work?

The application of a wash of tannic and alcohol is highly recommended to save work horses from shoulder troubles. It is made up by a mixture of one-fourth dram of tannic acid and four ounces of denatured alochol combined with water until the tannic acid is dissolved. This wash should be applied to the horses' shoulders night and morning. Shake the solution well before using. Or a solution of about one teaspoonful of salt to a pint of water may be used in the same way.

The advantage of either of these applications is that they are astringent; that is, they contract the tissues. If they are applied regularly for about the first month after the horses being to work there will be no trouble with sore shoulders.

KEEP HALTER TIGHT

A simple device to tie the horses in the stable eliminates the danger of an animal's getting his leg over the halter rope and possibly injurying himself, or least causing me quite a bit of trouble in getting him loose.

I take a block of hard wood four to six inches wide and two inches thick and drive a heavy staple into it, or screw in a large screw eye. Then I run the halter rope through a hole in the manger and tie it to the staple or screw.

When the horse's head is lowered the slack is taken out of the rope and it is kept tight all the time.—G. H. Long.

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16

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POULTRY.

SUCCESSFUL DUCK RAISING

Farmers' Bulletin No. 697 of the United States Department of Agriculture, deals with duck raising. From it the following information for the duck raiser is taken:

Pekin—A large white duck of Chinese origin, favored by comercial duck raisers who make a specialty of producing green ducks; it is also the most popular breed on general farms in the United States.

Aylesbury—A large, white duck of English origin; less popular than the Pekin.

Rouen—A variety of French origin of gray claret and green coloring, with a white ring around the neck. A good duck for general farms.

Indian Runner—A variety of Dutch or Belgian origin, smaller than the other three above described; belongs to the egg-laying class. Indian Runner ducks are good foragers, non-sitters and hardy. It is a good breed for the general farm.

Selecting and Mating

Ducks on regular duck farms are usually mated in flocks of about 30 females to five or six males. Select ducks with short necks, medium long bodies, flat backs and a good depth to the keel bone. Watery eyes are a sign of weakness. Confine laying ducks in the pen until 10 a. m. or their eggs are liable to be lest.

Incubation

The period of incubation is 28 days. Duck eggs may be hatched under the duck, by hens or incugators. Strorg, fertile eggs are eessential to good hatching. Observe the usual precaution when hatching under hens, give a hen nine or ten duck eggs, keep her free from lice, and sprinkle the eggs with warm water previous to hatching. Ducklings require from 24 to 48 hours to come out after they pick the shell. With incubators, operate as per the manufacturer's instructions. Duck eggs require more moisture during incubation. The machine should be kept at 102 Fahr. for the first three weeks and 103 Fahr. for the last week.

Feeding Ducklings

Ducklings do not need feed until they are from 24 to 36 hours old, after which they may be fed five times daily on a mixture of equal parts by measure, of rolled oats and bread crumbs, with a 3 per cent, mixture of sharp sand mixed in the feed Abut the third day this feed is changed to equal parts bread, rolled oats, bran and corn meal; after the seventh day to three parts bran, one part each of low grade wheat flour and of corn meal, 10 per cent. of green feed and 5 per cent. of beeef scrap, with about 3 per cent. of sand or grit in all the rations. Feed four times daily after the seventh day until the ducklings are two or three weeks old, when they need be fed only thre times daily. After the ducklings are about a week old, the grit or sand may be fed either in the mash or in a hopper, but the common practice is to feed grit in all duck rations. Beef scrap is not usually fed until the ducks are a week old, when about 5 per cent. is added tothe ration, which amount is gradually increased 15 per cent. by the end of the third week. This feeding is for ducks intended to be sold "green" when form 8 to 12 weeks of ge. Ducks being raised for breeding or for later marketing should be given plenty of green feed and vegetables. If milk is available at profitable feeding prices it may be used as a part of the rations. Milk fed ducklings demand highest prices.

HOW TO IMPROVE QUALITY OF THE EGGS

It is remarkable how few farmers appreciate the importance of infertility in market eggs. The removal of the male bird from the flock does not necessarily guarantee the absolute preservation of its good quality, but such an egg, being free from the active germ, will not, under ordinary storage conditions, deteriorate seriously. It has been proven beyond doubt that the great bulk of eggs which are spoiled for purposes of consumption are fertile eggs, which have been subjected to heat above seventy degrees, and thus have undergone partial incubation. If the heat is continuous and strong enough the development of the chick will continue; but if it ceases or is intermittent putrefacation at once sets in and the egg comes bad. Such eggs wil show black spots, blood rings, or will be rotten, depending upon the degree of deterioration the have undergone.

Few farmers have much knowledge of these facts, consequently they make practically no effort to insure the infertility of the eggs produced upon their farms. They seem to have the erroneous impression that the presence eof the male bird is essential to the production of the maximum number of eggs; but such is not the case, and it has been proven beyond all question that such an arrangement is not necessary or desirable.

Therefore, in view of the above, it will be easily seen that the male birds should be discarded after the breeding season is over. They will sell for a better price then than any time later on. If the male is a valuable breedinb bird and he is wanted for use another year, he should be kept separate from the hens until the warm weather is over at least. He will then be out of the way and not able to annoy the rest of the flock.

TEN LEGHORNS LAY 10,000 EGGS

A remarkable instance of productivity in fowls is found in the record of ten White Leghorn hens at the Ohio experiment station which have produced 10,000 eggs. Two of the hens are nine years old, six are eight years old, and two are five years of age.

The "ace" of the lot, "C-34," has 1,179 eggs to her credit; she is followed closely by "C-38" with a total of 1,147. The other eight followed closely in production. Two of the hens are from an original lot of pullets purchased in 1909 when the poul-

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Buy no Poultry fence any part of which is made of light wire. The life of the fence will only be the life of the lightest wire. A chain is no stronger than its weakest link. The Sarnia knot—in fact all parts of our fence are made of the same size wire. We guarantee the Sarnia fence to be made from Government guage, high grade wire that stands the acid test, and to be the most perfectly woven Poultry fence on the market. Western Canada supplied from Winnipeg. Get our low price list and descriptive literature before you buy Poultry Fence Address nearest office.

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Louden Senior Fork Carrier, with a giant balance grapple fork, or a double harpoon fork, can be depended on to unload your racks quickly and easily. The Grapple Fork is a winner.

For clean, quick work in harvest Louden centre trip slings and sling carriers have always led the way. A whole load in two lifts shows the time you save with Louden Sling Carrier Equipment.

Made by us for a generation. Mail us length of your barn, whether centre drive or end unloading and width space between rafters.

You will be surprised how little really high grade equipment costs.

Get interested. Write to-day.

If you are building or remodelling our Barn Plan Book will save you worry, time and money. It's free—also our large illustrated catalogs.

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Simple and yet strong in construction. It looks when the tines are open as well as when they are closed

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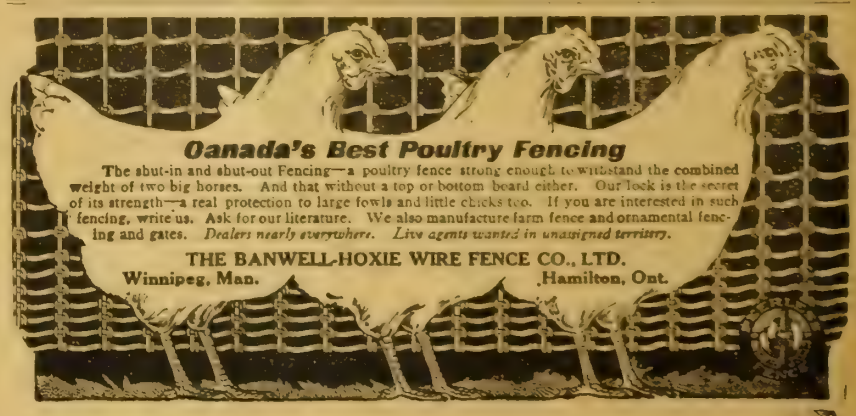
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try investigational work was begun at the Ohio Station.

None of the hens showed any particular effects of old age. While their annual producion is less than during the earlier laying periods, they still lay regularly during the spring and summer months. Each of these hens has produced approximately $25 worth of eggs, at ordinary market prices, at a feed cost of about $10.

BEST FIVE YEARS IN POULTRY HISTORY JUST AHEAD

Scarcity of Products in Europe makes Present a Most Propitious Time for Enlarging Flocks in This Country

(By H. W. Sanborn, Extension Poultry Husbandman, U. S. D. A.

Now is the beginning of the best five-year period for profitable egg-production ever known.

We ebelieve it will be the best five years that will ever be known.

All Europe has very little poultry. Some parts none at all.

All Europe will become a bidder in American markets for poultry and eggs.

American breeders must furnish the breeding stock for the renewal of the European flocks.

It will take at least five years before Europe can be selfsustaining in poultry products.

These facts make for continued high prices of poltry and poultry products, even after prices of grains have declined.

This means that farmers will be able to realize for the next five years more for the grains fed to hens for egg production than will be possible by and other process of marketing. We feel confident that by following proper practices in poultry keeping at all seasons of the year that double the market value of grains may be realized by the feeding of it to hens for egg producton.

Begin now—this season—to make your poutry work count. Give it a definte place in the daily work, keep accounts and compare returns for effort expendeed with other farm operations. If this is done results will be more evident and you will appreciate your poultry as revenue producers.

Practice right selection in breeding.

Provide proper housing conditions.

Feed liberally rich foods to obtain high egg yield.

Hatch early. Early hatched pullets lay fall and winter eggs.

Practice good sanitation.

Keep hens free from lice and roosts free from mites.

Take good care of eggs, gather daily and market often.

The hen lays a perfect egg. Seee to it that a perfect egg goes to market. Good eggs bring top prices.

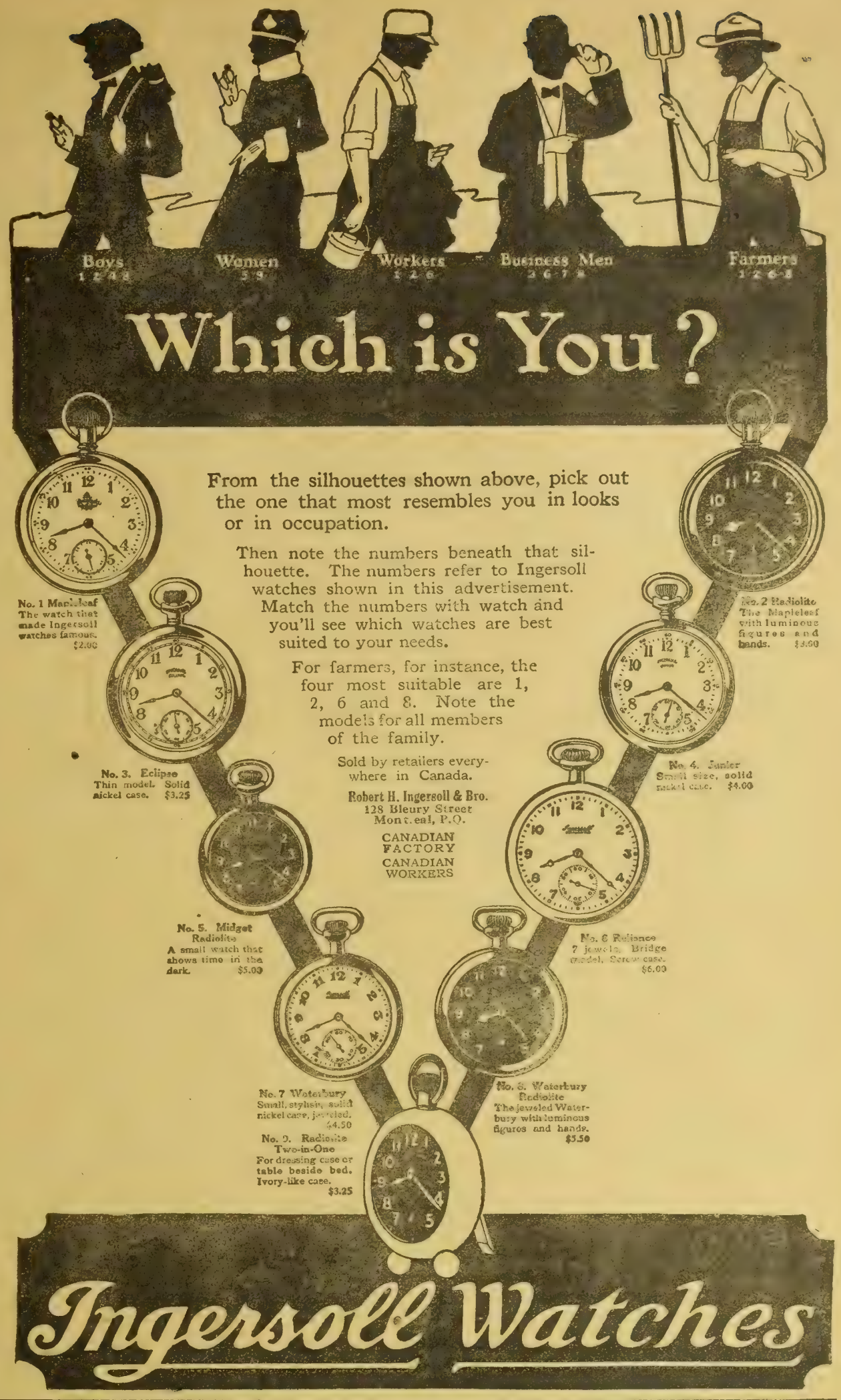
PREVENTING HIDDEN NESTS

During the summer season when grass, weeds and other vegetation are tall, many hens persist in stealing their nests away and laying in secret and obscure places. Chances are the hen that hides her nest is apt to come back with a brood of chicks and raise them with profit, provided it is not too late in the season. Frequently eggs laid out are entirely lost. They may rot, or be stolen by wild animals, crows, etc. Many, if found at all ,are eso stale that they are unfit for use.

There are several ways of preventing hens from stealing their nests. The best way, all things considered, is to have the place free from weeds, rubbish, etc., so that no hen can find a secret place to make a nest. This can be done quite easily. Weeds should be mown. It is a good plan to have several sheep to turn in occasionally. They will keep the weeds down, if turned inat the right timie. Sheep are better than other stock for they will not injure the trees in the yards. Rubbish should be collected and either burned or disposed of in some way.

Another good plan is to have a large hen-tight poultry-yard in connection with the hen house, and to keep the laying hens in it until about three o'clock in the afternoon. By this time the majority will have laid, and they may be turned out on range. This will allow them several hours for exercise. The eggs will all be laid in the hen house, and they can be gathered fresh every day. You will also know where to look for them. Where no such pen is at hand, and the yards are clean of weeds and rubbish, and the hens still persist in searching for secret nesting places, try putting up a few nests in out of the way places. Perhaps they will find and use them.

W. .E. E.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Workers
3 4 6
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From the silhouettes shown above, pick out the one that most resembles you in looks or in occupation.
Then note the numbers beneath that silhouette. The numbers refer to Ingersoll watches shown in this advertisement. Match the numbers with watch and you'll see which watches are best suited to your needs.
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Small size, solid nickel case.
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No. 5. Midget Radiolite
A small watch that shows time in the dark.
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No. 6 Reliance
7 jewels. Bridge model. Screw case.
$6.00
No. 7 Waterbury
Small, stylish, solid nickel case, jeweled.
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No. 8. Waterbury Radiolite
The jeweled Waterbury with luminous figures and hands.
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For dressing case or table beside bed. Ivory-like case.
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Ingersoll Watches

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

LET US SMILE!

The thing that goes the farthest
Toward making life worth while,
That costs the least and does the most,
Is just a pleasant smile;
The smile that bubbles from a heart
That loves its fellow-men
Will drive away the cloud of gloom
And coax the sun again;
It's full of worth and goodness, too,
With manly kindness blent
It's worth a million dollars
And it doesn't cost a cent.

BUSINEES IS BUSINESS

(By Zona Gale.)

In the dining room where Burton and his little daughter sat, a high gas burner poured light that showed the room minutely, indelicately, as if the light had taken things unaware. It was two weeks since Mrs. Burton died, and already the room looked different. A window-shade had "gone over the roller" and bared a blank night window; the bird cage hung uncovered at a level with the blaze of the burner; newspapers were piled where she would not have piled them.

"I hear Heilman's going to sell this place," Burton said. He was heavy, thick-fleshed, unshaven, coatless; but his eyes were kind, as was his voice.

Mary, the little dauhter, was ten years old, with a startled, pointed face, and with hair braids of uneven strands as if she had plaited them with unaccustomed fingers. She had a way of putting her hand to her cheek as if to cool its flush, and this she did now. "Would we have to go 'way from this house then?" she asked her father.

"Sure," said Burton, "sure thing."

"And leave where Mamma died?" said the child.

Burton nodded without speaking. He and his wife had furnished the house before their marriage and had come to it on their wedding day. Some of the furniture stood now where it had stood then, and where they had pictured it when in that week in which Burton had had his "raise," making the marriage possible, they had first visited the empty house together, had said to each other that this would be home, had looked at each other in a divine and understanding whose only visible sign was bashfulness. And in these ten years there had grown about the place the roots man strikes for himself—the trees that Burton had planted, the shed that he had built while his wife worked in the kitchen or caled to him from the portch, the cistern he had filtered, the shelves he had put up, the painting he had done—all wrought on an economical basis of rent saving, and all fruitful of the enduring spirit incident to home building. And here Mary had been born, in the room off the dining room where they now sat, and on the casement of the door into that room he height was measured and marked in ink, ten times.

"Oh, Daddy, you buy the house!" Mary cried.

Burton shifted his heavy feet on the high fender. "God knows, I wish I could!" he said. "I could give him eighteen hundred dollars for it—and I would. But he'd never take it."

"Eighteen hundred dollars!" said the child. "Daddy, surely he'd take all that money if you asked him to."

Burton shook his head. "I don't believe it," he said. "I met him today. He mentioned he'd be in tonight. I s'pose he's coming to see about selling—and he'll be hot for every cent. I thought I'd try him for eighteen nundred, but it won't do any good.

"'Maybe it will," said the child.

When, in a little while, Abel Hellman came in he had with him his wife—a gaunt woman, her face filled with her years, her hands modified to many a life-long task. She greeted Burton and the child, lifted a pile or newspapers from a chair and sat down behind the stove, turning back the hem of her dress to dry. Mary brought a stool and sat beside her, but they said nothing, and merely stared into the red coals that occasionally shook softly down through the grates.

The men did the talking, speaking of the town's affairs in the empty, habitual comment which custom breeds to a dreamy contagion.

Abel had a hand from which the four fingers were missing, and with this hand he continually made gestures. "I've made up my mind to sell this place," he said at length.

"So?" Burton said.

"I've had an offer of two thousand for it," said Hellman.

Burto nnodded. "Best take up with it," he said.

"Think so?" inquired Hellman. "Why is that?"

"Place ain't worth fifteen hundred," said Burton.

Mary turned from the coals and fixed her eyes on her father and listened.

"It's worth the full two thousand to anybody that knows property," said Hellman insolently.

"Think I don't sense 't you'll be taxed for sewage if the reform folks get in?" Burton demanded. "Think I don't know the house is falling to pieces over us? You ain't half kep' it up, and you know it, Hellman."

"Well, you had to have water put in, like a dock," said the landlord. "I couldn't afford shingles too. You've been an exactin' tenant, Burton, that you have."

"You've been a holy old tyrant then," said Burton, "and the neighbors know it. I'll be glad to be rid of ye. When do you sell?"

"I'm to let the man know tomorrow if I take up with his offer," Hellman answered.

"You'll want us out of here in a month like?" Burton asked.

"Not longer," Hellman told him.

Burton tipped back his chair to the points of the rockers and sat with his hands locked behind his head. "I'll be looking for a little place," he said.

On her stool by the stove the child sudenly leaned forward and sobbed in her curved arms lifted to hide her face.

"Why, Mary!" Burton said in concern, "what ails ye? Did you hit ye on the fire?"

"Don't let it go, Daddy, don't let it go," she begged.

"Tut, now," said Burton kindly, "this ain't a thing you know about,"

The child went and stood beside Abel Hellman. "Couldn't you leave him have the house?" She said. Just now he wish't he could buy it. Mother lived here. She died here. We can't either one of us bear to see it go."

Hellman glanced shrewdly at Burton. "He ain't been talking exactly that way," he said.

The other man flushed dully. Hellman was swift to take advantage.

"If you feel like that about it, Burton," he said, "I'll tell you what I'll do. I'll let you have it for nineteen hundred. I'll knock a cool hundred off to oblige."

Burton stretched himself back again to the length of the rockers, "What about the fellow that's offered you two thousand?" he asked with a leer of the eyebrows and a loose lip and a look that made of him someone else.

Hellman moved his feet about, threw out his fingerless hand—it was strange how the maimed thing could make a gesture of grasping.

"Well, he ain't as prompt pay as you are," he said, "an' he was only goin' to give me two hundred down. I'll leave you have it for the nineteen hundred—say, five hundred down and the rest fixed to suit."

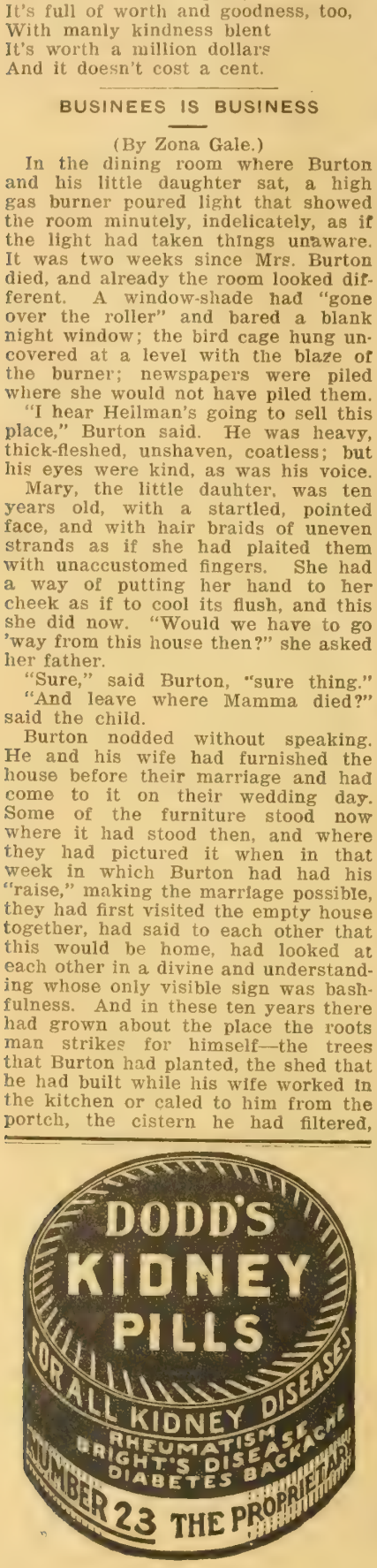
"I won't give you no ninteeen hundred," said Burton stubbornly. The place ain't worth a cent over fifteen at the outside. Not with the repairin' that's needed, and the sewage acomin' on, an' the Interurban gone off down Chestnut street."

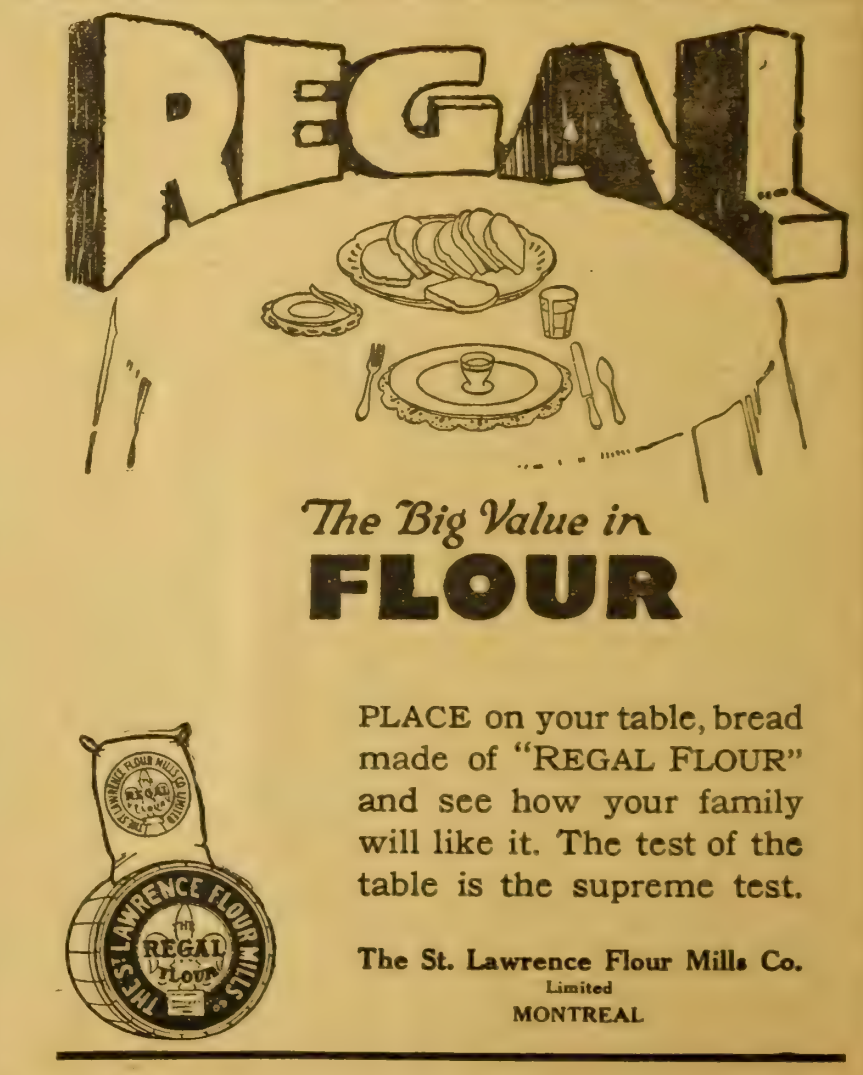
They were silent for a moment. Hellman's wife sat snapping the hem of her skirt to dry it out. The skirt was bodiless, as if the life had long gone out of it. She sat by the stove waiting Hellman's motion to go; she was clothed in the little with which he had clothed her, worn with the work of his home, spent with the bearing of his children; but her dignity was as definite as the dignity of wisdom and of other eternal things. She was looking at Mary, who had turned to the coal stove and stood tracing the pattern of the nickel, the red coals glowing on her face, where the tears lay.

Helman looked at the child too, and narrowed his eyes. "Your ma set a good deal o' store by this place, I guess," he said to her.

Mary nodded her head, with three little intaken breaths.

"eYs," Hellman went on. "I recollect her running out of the gate a





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The St. Lawrence Flour Mills Co.
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little while ago, to speak to me when I was goin' past. I recollect she wanted a little addition put on so's you could have a room to yourself. She said she could do the paperin' and your pa was goin' to build in a bureau out of a packin' box. I couldn't see my way to it, but I noticed what a lot of store she set by the place. The front yard must be full o' stuff she's planted and set out."

The child put her hand to her face and stood silent.

"Yes," said Hellman, "I expect it'll take you quite a while to get used to anywhere else, you'd all been here so long together. I use' to see you all setting by the table evenin's—here in this room. That your ma's rocker?"

The child nodded mutely.

"You ain't disturbed much out of place from where she left it, I reckon," Helman said. "The kitchen now and the butt'ry—just as she le 'em, eh?"

The child nodded.

"Her room just the same is it—the room she died in?" Hellman inquired. "Kind o' tough to have to move out o' that."

The child had receded two steps or three and stood against the casement of the door, where the ten ink marks had measured her growth, outside the room where she was born. She threw a nappealing glance at her father—but Burton sat looking into the red coals, his lips moving in some laborious reckoning. She looked toward Hellman's wife, and something in the woman's face answered, and the uhild sobbed: "Some things we ain't had down out o' the closet since she hung them up on the hooks."

"I expect not," said Hellman; "I know how it is. Pity your pa feels he has to let it go. I'd like to leave you in here a little longer on account of sentiment. But I s'pose maybe he knows best. Well, I guess I'll be going along now. Best wipe up your eyes, little one. It can't be helped, it seems. Good-night, Burton. It's a good bargain you're turning down at ninteen hundred."

"Fifteen hundred," said Burton. I'll give fifteen hundred. Not a cent more."

The child stood by the door crying silently.

nI the corner Hellman's wife dropped the hem of her skirt and got to her feet. "That's all right," she said deliberately. "Abel is satisfied with the fifteen hundred, ain't you, Abel?"

Helman glared at her, but she did not meeet his eyes. She was looking at the child, to whom she moved somewhatnearer, and gave some unimportant touch to her black hair-ribbon.

"You said this morning that fifteen hundred was all you expected to get out of the place, you know," the woman went on clearly. "Best to tell him so, and get it settled tonight."

"What do you know about this?" Hellman snarled. "You keep out o' this, will ye?"

Hellman's wife put her hand on the child's shoulder and faced the men. "We've set by hearing you do business, Mary and me," she esaid, "and I guess we know you are liars, the both. The child here let out that you're breakin' your heart, Matthew Burton, to keepe the little house. Well —I've set for years heard Abel say a thing was worth more'n he knew 'twas worth, and tell why, and cover the truth that didn't further him. I've seen him look a man in the face and act indifferent about sellin' when the need to sell was prickin' him sore. I've heard him tell one, and another, and another, this when he meant that, and that to cover up the truth o' this —well, he's counted a smart business man, I hear 'em say. I know him different. I've been contented to share his gainin' to keep the bread inside my bones and the children's, but I've never see him spin sobs out of a child before. That's why I've let the truth out on him a-purpose—just like your girl, Matthew Burton, has let it out on you unmeaning. You're fine business men, I s'pose, the both o' you. But I don't see and I guess the child here don't see—how in the name of truth you're any holier than common liars."

The two men had risen. Burton was looking steadily at Hellman, whose face suddenly went into an ugly twist of laughter.

"Listen at that," Hellman said. "Ain't the women the devil's own? They can't understan business any more'n a colt. She don't know what she's talking . . . I tell ye what I'll do; I'll sell out to ye, Burton for eighteen hundred; and I'll tell ye what else I'll do; I'll pay the sewer tax. Now what's fairer than that? Come."

Burton stood shaking his head, his lips pressed thin, his eyes locked doors.

Mary went to her father and slipped her hand in his, thrust half into his pocket, and looked up radiantly in his face. "You said you'd give eighteen hundred dollars, Daddy," she said; "why don't you tell him so?"

Then the two men looked swiftly in each other's faces, and for a moment of time the anxious, waiting spirit in

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If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me today for free trial treatment.

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When your liver becomes sluggish and inactive, the bowels become constipated, the tongue becomes coated, the breath bad, the stomach foul and sick, and bilious spells occur on account of the liver holding back the bile which is so essential to promote the movement of the bowels, and the bile gets into the blood, instead of passing through the usual channel.

The only proper way to keep the liver active and working properly is to keep the bowels regular by using Milburn's Laxa-Liver Pills. They work smoothly and gently, and do not gripe, weaken and sicken as so many laxative pills do.

Mr. James P. Colter, Hartford, N.S., writes:—"I have used Milburn's Laxa-Liver Pills for constipation and liver complaint. At one time I used to have a bilious spell every little while and once was in bed for four months. Since taking your pills, the bilious spells have left me. I have recommended Laxa-Liver Pills to many others here, and they are growing in favor every day."

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Manufactured by the
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each spoke free. But the flesh swiftly covered this unexpected nakedness by covering the face of each man with a sheepish grin.

"As long as we know how it is, then," said Burton, "let's split the differ'nce. Let's make it sixteen hundred and fifty dollars."

Hellman kicked at the leg of the stove. His small, red-rimmed eyes shot toward his wife resentfully, but she did not see him. She had noticed how the little girl's apron strings hung—one end dragging below the hem of her skirt, as if she had pulled it about in front to tie it—and the woman was kneeling to retie the bow.

"It's an infernal steal," said Hellman, and saw the understanding grin stil on Burton's face, "Done, though," he aded. "Done."

While the men were making a meeting place for the signing of the papers Hellman saw his wife kiss Mary goodnight. It struck him vaguely, and afar off in some sense that she and the child were somehow allied by an obscure instinct, which he, who was one flesh with the woman, and Burton, of whose flesh was the child, were strangers; as if some Eternal Woman in things had abruptly manfested her share in the eternal creation. The impression, coming to him rudely and finding no medium, made him angry. "She's done me out of a hundred and fifty dollars, cool," he sneered to Burton. "And your girl there, she's made you pony out a hundred and fifty more'n I'd 'a' let you have the place for if you'd 'a' hung on."

Burton looked over at the child. "They don't know nothin' about business,' he said, in a great apology.

Hellman threw out his fingerless hand. "Come on—you," he said to his wife. "You can do the scrimping and sagin' to pay for this deal, I can tell you. Mebbe ye'll learn after a while 't 'busines is business.' "

The gaunt woman looked down at the motherless child. "I wish't your mother could come back an' explain it out to 'em," said Hellman's wife, "an' tell 'em whether 'business is business' sounds so almighty grand a sayin' to the dead."

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HOUSEHOLD SCIENCE COURSES HAVE PROVED BENEFICIAL

Owing to conditiions resuting from the influenza epidemic the Short Courses in Household Science, held under the auspices of the New Brunswick Women's Institutes, were not opened until Feb. 18. These coruses last for ten days and this year were held in eight different centres throughout the Province, viz., Woodstock, Edmunston, Fredericton, Newcastle, Bathurst, Sussex, St. Stephen, St. John. Classes in cookery, sewing, millinery and nursing were held each day throughout the course. Efficient instructors, specialists in their respective subjects, conducted the classes. Intense interest in the work was shown everywhere throughout the province and a general feeling prevails that much good has been done.

During the last week of March and first week of April we were pleased to have the opportunity of co-operating with the Agricultural Societies in their short course work held in Madawaska and Victoria Counties. One session of each of three short courses held in these counties was given over to the Women's Institute for demonstration and instruction purposes.

Proud are we with the successful results of our co-operative action. Following these short courses an organization campaign was launched in the counties of Madawaska, Restigouche, Gloucester and Kent, resulting in the addition to our organization of eighteen new branche institutes. These branches were established in the French speaking districts, the work being conducted by the French Assistant to the Supervisor of Women's Institutes in New Brunswick.

One short course lasting three days was given to the French speaking members of the instiutes of Madawaska County at Claire. Classes in cookery, management and home nursing were held each day of the course. Similar courses will be held in June and July in the counties of Restigouche, Gloucester and Kent.

Prize winners in Ten Days Short Courses held in Woodstock, Edmundston, Fredericton, Newcastle and Bathurst under the auspices of the New Brunswick Women's Institute.

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Woodstock
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Cookery.—Mde. Fortunat Gagnon.
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Millinery—Mlle. Alice F. Michaud.
Nursing—Mlle. Annie Michaud.
Fredericton
Cooking—Mrs. Wm. J. McLean.
Sewing—Mrs. Frank Shorthill.
Millinery—Mrs. D. A. Duplisea.
Nursing—Miss R. L. Anderson.
Newcastle
Cookery—Miss Mary Lawlor.
Sewing—Mrs. A. B. Leard.
Milline y—Mrs. D. W. Stothart.
Nursing—Miss. T. H. Whalen.
Bathurst
Cookery—Mrs. G. D. Allison.
Sewing—Miss Nellie Scott.
Mililnery—Mrs. R. J. Lutz.
Nursing—Miss Mary Smyth.

Names of prize winners for similar courses in Sussex, St. Stephen, St. John will be published in near future.

The summer campaign of 1919 will take the form of demonstration work among all the branch instiutes, the contemplated subject being milk, its composition, food value and practical use in many ways.

According to the branch reports sent in to the Head Office each month, the prevailing work seems to be communiy, school improvement and public improvement work. Some work also is being done in connection with the War Savings and Thrift Stamp campaign—he work of the War Savings Society being incorporated into that of the branch institute.

An invitation from the Federation of Women's Institutes in Canada has been extended to and accepted by the Women's Institutes of Great Britain to form an International Federation of Women's Institutes Mrs. A. T. Watt, the Superintendent of Women's Institutes in England is coming to Canada in the near future to carry out the necessary arrangements and will lecture throughout Canada while here.

Women's Institutes of New Brunswick can you not catch a glimpse of the future? Take new courage, strengthen yourselves, go forward, looking unto the ultimate goal of being partakers in one of the most important businesses of creation—the making of better homes, better citizens, a better world.

SWAT THE FLY

Just listen to this—it is the Fly's Multiplication Table: "May 1st, 1 fly egg hattches on maggot, which becomes a female fly; May 25th, the female fly lays 120 eggs; June 5th, 120 adult flies issue, of which 60 are females; June 19th, the 60 female flies lay 7,200 eggs; July 1st, 7,200 flies are hatched, of which 3,600 are females; July 14th 3,600 female flies lay 432,000 eggs; July 25h, 432,000 female flies issue, of which 216,000 are femaies; Augus 14th, 216,000 female flies lay 25,920,000 eggs; August 24th 25,920,000 flies issue, o, which 12,960,000 are females; September 18th, 12,960,000 lay 1,555,200,000 eggs, which October 4th bring forth 1,555,200,000 flies." SWAT THE FLY.

THE SEASON'S HATS

There is no end to the styles of this season's hats, but just for the present the rather substantial straws in browns, tans, and black with rather a high gloss are more in vogue than they will be later in the season. And these are very simply trimmed with bands and quills, or made ornaments of beads and wool. They are good, serviceable hate for long drives over country roads, and just as suitable for other wear. The shapes are varied. There are the close toques, the always popular tricorns and the large shapes with rolling brims, and there is no doubt but the wide brimmed sun hat will be popular later on. At the present time there is one advantage, women may exercise their own individual taste, wear what is most becom, and be nevertheless, in the style.

STRAY SHRAPNEL

While we're at it, why not make the world safe for baseball fans. Might start by interning the peanut sellers at ball parks, restraining the writing Bullsheviki who make their livings by scribbling baseball stuff and keep knocking the game, and suppressing the pop-eyed fan who busts your straw lid every time some player makes a base-hit.

Capital is an important feature of a poultry business. A man may get up early and work late but if the birds do not receive good feed and live in the right kind of houses the work is apt to be in vain. Feed and houses and good breeding stock mean that capital must be invested in the business and without the cash the poultryman must advance very slowly until it is acuireqd.

PILES Do not suffer another day with Itching, Bleeding, or Protruding Piles. No surgical operation required. Dr. Chase's Ointment will relieve you at once and as certainly cure you. 60c. a box; all dealers, or Edmanson, Bates & Co., Limited, Toronto. Sample box free if you mention this paper and enclose 2c. stamp to pay postage.

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Does *your* property go ten years, before repainting? Take a look at the surface today. Three to four years is a pretty fair average life for Paint, though many cases of ten years or more are known where S W P was used.

Weather worn, scarred and peeling surfaces can be saved. Two or three penetrating, healing coats of SWP will put an end to decay, renew the original beauty and distinction of your property, and remain for years a profitable investment. Big Corporations are among the largest users of paints. Paint Protection is as necessary as Fire Insurance. Fire destroys only one building out of a thousand. Weather exposure and decay attack the other 999, unless the SURFACE has been protected by paint. Fire begins at the surface—so does decay, rust, and wear. "Save the Surface and you save all" is an apt expression, full of significance for every person who has money invested in property.

This announcement is issued by THE SHERWIN-WILLIAMS CO. of Canada, Ltd., 897 Centre Street, Montreal; 110 Sutherland Avenue, Winnipeg, Man., for the purpose of widely distributing an interesting and valuable reference booklet to property owners and housewives, "The A B C of Home Painting." Write for a copy today—it is free.

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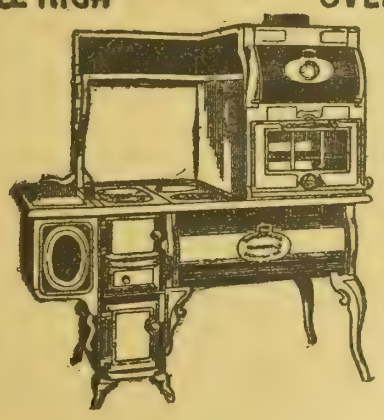

Happiness in the home is so dependent upon tranquility in the kitchen that it is essential to have the very best range procurable.

The Enterprise Perfect, so convenient and reliable, easy on fuel, and lasting a lifetime, is the ideal stove for the average family. It has *two* ovens for baking and roasting at the same time, with a warming closet as well.

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Pain in the back is one of the first signs showing that the kidneys are not in the condition they should be, and it should be gotten rid of immediately, if neglected, serious kidney troubles are likely to follow.

There is a way to "shake off" for ever the constant pain of backache, the annoyance of urinary troubles and all dangers of kidney ills. Go to your druggist or dealer; get a box of Doan's Kidney Pills; take a few doses, and see how quickly your backache will disappear.

Mr. Hugh Morton, Daysland, Alta., writes:—"I am glad to feel it my duty to let you know what great relief I found by using your Doan's Kidney Pills. I was laid up for two months with pains in my back and I found relief after having taken half a box of "Doan's." I cannot recommend them too highly to anyone having weak kidneys, as they have been a great help to me."

The phenomenal success of Doan's Kidney Pills in all parts of the world has brought forth many imitations. See that you get "Doan's" when you ask for them. Our trade mark "The Maple Leaf" is on every box. Price 50c. at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

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after four years of war service in England, Belgium, France and Canada, has again taken over the management of the

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Write for full particulars.

No Summer Vacation

this year, as some of our students cannot afford to lose time.

Our classes have been considerably crowded, but, vacancies now occuring give a chance for new students who can enter at any time.

Tuition Rates, mailed to any address.

S. Kerr, Principal.

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is what you'll have to. Are you ready for the launch? If you would reach the harbor of success, you must first launch on the sea of preparation. It will pay you to get this preparation at the

SUCCESS BUSINESS COLLECE, Ltd.

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Advertise in the Farmer

SAVING STEPS.—AIDS FOR THE ALWAYS-BUSY HOUSEWIFE

Do you do your own work? Then the most important problem for you is how to "make your head save your heels."

Begin with the kitchen, for it is probable that you spend more of your waking hours there than in any other room in the house. It is your office—your place of business. Three times three hundred and sixty-five meals a year have to be cooked and served from it, and perhaps all of them by the labor of your own hands. The sum total of that drudgery looks stupendous, but you can lighten it greatly and really add pleasure to much of it, if you put your intelligent interest into it. That new science of efficiency about which we hear so much in every business is nothing more than you can apply right at home—the conservation of time and strength.

Water! Drainage! Ice!

The first consideration is water; then drainage; then ice. Get at any cost; you can possibly afford pure water piped into your kitchen, and a good tight drain to carry off the waste slops. If you can't get the water brought in, at least insist on the drain and kitchen sink to carry it out. The expense of this convenience is so slight that no woman should be without it. Twenty-five feet of vitrified tile can be bought for one dollar and seventy-five cents; an iron sink costs not more than a dollar and twenty-five cents, and the pipe and trap connection need not bring it up more than a dollar. For five dollars a farm or village house should procure a waste water connection for its kitchen. If you can't get a cess-pool built to drain it into, let the waste water drain down an incline to a sunken barrel in the garden, where with rain water from the eaves you will have a fine liquid fertilizer for your vegetables.

Those Fatal Cellar Steps

The great advantage of ice in the lightening of the kitchen work is in the keeping of the food without those wearying journeys to and from the cellar. Often the cellar is not conveniently located, nor are cellar stairs easy. If you ca managine ice, why not make your own ice box? A wooden box lined with zinc or tin, or even oilcloth, with a hole bored in the bottom for the escape of water, is all that is necessary. Put shelves made of slate across the sides or ends, leaving a space in the center for the ice. Now build around this box another large enough to leave an intervening space for a layer of some non-conducting material such as charcoal or sawdust or fine-cut hay. When it is ready for use put it in a cool, handy place; but KEEP IT OUT O FTHE CELLAR. It may save a little ice to keep the refrigerator in the cellar, but it certainly does not save legs and backs.

When the cool weather comes and ice is no longer necessary a window-box for food is a great convenience and another avoidance of those fatal cellar-steps. A window in pantry dining-room or kitchen can be appropriated to its use.

Of course, where a supply of garden stuff, roots and meats must be cared for, the use of a good cellar is imperactive, and such a mine of supplies should receive the housewife's most careful attention, but she should get the morning allowance out of it and then have done with the cellar for the rest of the day if possible, except on cleaning days.

Is your kitchen the right size? Take courage is it seems too small, for much can be done to make it a time-saver; but if it is large, set to work at once to rearrange it, for it is your real woman-killer.

A good modern kitchen need not be more than twelve feet square, unless the family to be provided for is very large and needs to have several people working in it at once. But if you already have a large one, it is possible t osave steps by having the stove, sink, work tables, cupboards and utensils grouped together and as near as possible to the entrance to dining room and pantry. The remaining space may be devoted to laundry work or other duties not in the daily routine. In farm life this end of the kitchen can be well used as a sitting-room for the men.

Your tools must be considered next. Get rid of the tables with wooden tops to be scrubbed. Cover with zinc the one on which the hardest and dirtiest work is done; or, if you can find one, get an old marble top from some discarded table. For the ones used least of all, buy white oilcloth covers, costing half a dollar for a two-yard squrae.

Have a gas or oil stove. They save fuel and no end of work in quick-heating jobs. Get a high stool or put longer legs on a chair; and then sit on it for every kind of work you can possibly do sitting. Think it a discreditable stupidity to iron or to peel anything on your feet!

Up-to-Date Devices

Look into every labor-saving device you hear of, and try it out if it is within your means to buy. Don't let the men of the family outdo you in their intelligent application of new machinery to business. Every woman can have a fireless cooker, thereby saving hours of fussing over the hot stove. Use a bread machine if you can afford it, and every department store now sells some sort of a simple hand vacuum washer under two dollars, a wonderful labor-saver. Hotels are on the constant lookout for labor-savers as an economy; so should you be.

Light-weight cooking utensils, a good raisin-seeder, a lemon-squeezer, a wire dish cloth for cleaning the pots, a flexible palette knife, a dish-

Smart Children's Shoes That Stand Hard Wear

Sturdy little ones are neatly shod in comfortable Amherst Shoes. Their growing feet are not crowded—especially in the flexible foot-form lasts with the smooth tread—and these shoes will wear longer than most.

Made in sizes 11-7; 8-10½; 5-7½

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I KNOW A WOMAN'S SUFFERINGS

I am a woman.

What I have suffered is a far better guide than any MAN'S experience gained second-hand.

I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight aud dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

MRS. M. SUMMERS, Box 309

Read My FREE Offer:

To Mothers of Daughters. I will explain a simple home treatment which speedily and effectually dispels green-sickness (chlorosis), irregularities, headaches and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten days' trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

Windsor, Ontario

washer, small water motor that can be applied to the washing machine or the churn—all of these things, as fast as they can be afforded or intelligently applied, save time and steps and so human life.

Never Two Steps Where One Will Do

If you don't get away from the necessity of keeping things in the cellar a dumb waiter that lets down through a trap door in the floor is a simple thing to install and a very great convenience. Have a large tray on which to remove the dishes from the table to t ehpantry or sink. Keep a pail, closely covered, in the kitchen ofr refsue—don't run out every meal with your scrapings. Have a place for everything and insist on everything being put in its own place. Have a place where any member of the family can find strings, tacks, anils, hammer, scissors, wraping paper, and then expect the user to put them back when used.

Keep your heavy utensils that are seldom used, in your enclosed cupboard and hang all your things for daily needs in plain sight; and so near to the place where they are wanted that you can reach out and take each off its proper hook without walking any distance to get it.

And if you will make a vow never to take two steps in housework where one can be made to do, you will be astonished at the result in a short time. Once put your feminine wits to work at it and the most astonishing contrivances will spring into being.

LET CHILDREN HELP

I yield to no one in detestation of child labor. I believe that any nation which allows its young to slave in mines or factories or stores is hopelessly mortgaging its future. But I also believe that it is almost as bad to deny children all opportunity for usefulness.

Which is what many parents nowadays do.

They permit their little ones to spend their time in undirected play. They do not dream of letting them help in any little job about the home.

They even perform for the children tasks—washing them, dressing them, etc.—which the children at an early age should be tought to perform for themselves.

As a result their children are unfavorably, sometimes disastrously, affected in many respects.

They tend to grow up selfish and lazy. The instinct of altruism, of service for the good of others, becomes shrivelled in them.

Vain and conceited, they crave a domineering leadership over all with whom they later associate. When leadership is denied them, as it usually is, they are bitter, resentful and unhappy.

In extreme cases they may become nervously overwrought in consequence of their failure to associate smoothly with their fellow beings. Many a nervous invalid may justly attribute his or her ills to parents who unwisely pampered.

For all of which reasons, while I oppose child labor as that term is commonly understood, I do not think that some work in the home, of a character suited to the strength of the child, is beneficial rather than hurtful—is indeed esential to a child's best development.

There are numerous ways in which little boys and girls can help their mother in the home. And it is worth observing that, as a rule, children are at first eager to help.

To be really helpful they, of course, need training. Too many parents are inclined to think that this is more trouble than it is worth. But they should look at the future as well as the present.

Let them encourage, not chill, their children's ardor for service. Let them foster, not deaden, the natural tendency of self-expressing endeavor.

Then we shall have fewer idlers and incompetents in adult life, fewer men who habitually shirk work, fewer women of really inadequate existence. There is point to a recent writer's declaration:

"The tragedy of the home where the bride knows little about the real keeping of a home can often be traced back to th emother. Of course, mothers could do it better and more quickly, but little hands can learn only through practice.

"Our girls will make far more efficient, happy home makers if the training toward it is begun early in their lives, when they learn to be 'mothers' as well as 'mother's helpers.' "

A Mother's Tribute

THIS letter from Mrs. Roberts gives such a fine idea of the value of Dr. Chase's medicines for use in the home that we shall publish it without further comment.

Mrs. Everett Roberts, 44 Endicott Ave., Halifax, N.S., writes :

"I feel it a pleasure as well as my duty to recommend Dr. Chase's Nerve Food and Ointment. After the shock of the Halifax explosion my system was all run down, and I was so weak that I could not walk. Night after night I lay awake unable to sleep. Nothing did me any good until one of my neighbors recommended Dr. Chase's Nerve Food. After a treatment of this medicine I can positively say that my health and strength have been restored, and I can now sleep well and do my work as well as ever.

"I used Dr. Chase's Ointment for my baby, who had ringworms all over his face. I tried almost everything I knew of without success until I used Dr. Chase's Ointment. This cured him in a short time. I would not be without either of these medicines in the house, and trust this may induce others to give them a trial and be convinced of their merits."

You can scarcely ask for a stronger gurantee of the value of a medicine than the portrait and signature of A. W. Chase, M.D., on the box. This is for your protection against imitations and substitutes. Edmanson, Bates & Co., Ltd., Toronto.

Minard's Liniment Co., Ltd.

Gents,—I have eused your MINARD'S LINIMENT in my family and also in my stables for years and consider it the best medicine obtainable.

Yours truly,

ALFRED ROCHAV,

Proprietor Roxton Pond Hotel and Livery Stable.

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Leaks and Holes in Kitchen Utensils, Graniteware, Aluminum, Enamelledware, Tinware, etc., quickly repaired. Easy to use—just like putty. Hardens in two minutes. Each mend only 25c. 15 cts. package. At your dealer or postpaid by
Vol-Peek Mfg. Co., P. O. Box 2024, Montreal, Can.
Agents Wanted.

HINTS FOR MOTORISTS

by ALBERT L. CLOUGH

Editor Motor Service Bureau Review of Reviews...

THE MOTOR DOCTOR'S "FAVORITE PRESCRIPTION." — GRINDING VALVES IS GOOD FOR JUST THE ONE THING— LEAKY VALVES

When the seats and stem guides of engine valves are so badly designed that they are not adequately cooled by the circulating water, the valves themselves, especially the exhausts, may become so hot as to warp, or to form scale or pits in their surfaces. If the valve material is poor this effect is intensified. An undue amount of oil vapor and gasoline soot in the mixture fouls the faces of the exhaust valves especially and the constant hammering of valves on their seats with road dirt brought in with the mixture as an abrasive, produces its effect in time. However, the valves of modern engines are well cooled and of good material, and it is rarely that a set of them requires any attention for several thousand miles. Oftentimes a mileage of five figures is made with no valve grinding being necessitated. Somehow or other, valve grinding has become the "favorite prescription" of the motor car doctor, supposed to cure the engine of "what ails it." It is receommended for all "skips," "knocks," and other infirmities of the ignition and carburation system and for almost everything else, short of broken crank shafts. This is all very foolish. Valves do require grinding at long intervals. They require grinding when they have become leaky and under no other conditions. The wise motorist will disregard superficial advice and not waste time and money grinding well seated valves, to cure troubles which are due to entirely different causes.

PECULIAR ANTI-FREEZE LIQUID

A. C. asks: What can you say about using a mixture of kerosene and water in the radiator during cold weather?

Answer: It seems as if this must be a joke, because kerosene and water do not mix. If they are put into a cooling system, at the same time, the kerosene floats upon it. The water is just as likely to freeze as though there were no kerosene near it. Kerosene alone is sometimes used s a non-freeze liquid, but the ombination which you suggest is not worth considering.

TESTING SPARK PLUGS

J. A. M. writes: I test each of the spark-plugs of my engine, by removing it from its cylinder, laying it on the engine, with the cable connected to it and running the engine on the other five cylinders. Should the plug being tested give a steady stream of fire or should it come and go? Is it true that a plug may act all right when tested in this manner and still fail to work properly when under compression?

Answer: The spark at the plug under test should be perfectly regular, not intermittent and, if the engine is running at good speed, it should appear continuous. At low speed, each separate spark can be distinguished.

When tested in the open air, a plug with a cracked porcelain or dirty insulating surfaces may spark perfectly, but when under compression, the electrical discharge may pass through the crack in the core or over the surface of the porcelain and no spark occur between the points.

GETTING THE LAST WEAR FROM OLD CASINGS

Lengthening the Tire's Road to the Scrap Heap

Considering the high tire prices prevailing, it is natural that one should seek to prolong the usefulness of ever casing and run it out to the bitter end—the moment of final, irreparable blowing out. When there s reason to believe that, through age or long service, the fabrc of a certain casing has become dangerously weak, it is a very common practice to reinforce the deteriorated materials by placing a reliner inside it. Sometimes the weak spots are localized and then inside blow out patches (which can be made from discarded casing, as a matter of economy), are inserted to reinforce them, instead of complete reliners. In the case of a shoe, the tread of which has come off or been worn out in spots, the fabric at these portions will soon wear through in service and a blow out will occur. Sometimes it may be worth while to apply a laced on outside protector or blow out patch over a treadless portion of the casing, if this is not too large, but if the tread is pretty generaly gone, there is not much to be done, except to let the fabric stand road wear as long as it will and scrap the casing when it blows out. Retreading of old tires is unprofitable and in fact it is seldom, if ever, advised except in the case of an almost new shoe, the thread of which has been injured by wheel misalignment or excessive slipping due to obnormal brake applications. When an old casing is being run to destruction, to get from it what little remaining service it has to give, the inner tube used in it should be anl old one of little value, as the blowing out of the casing will involve the tube in disaster. Fresh, new tubes, seem to tear worse under such circumstances than old, inferior tubes which give out with less extensive injuries. When one is wearing out old tires, is the time of the most vital importance. With all new tires on the wheels, spare rims and casings are seldom called for, but when getting the last wear out of old shoes, the single spare rim and tire, customarily carried, may well be reinfoced by an extra, space casing.

MALTESE CROSS TIRES

TRADE MARK

Your Next Tire

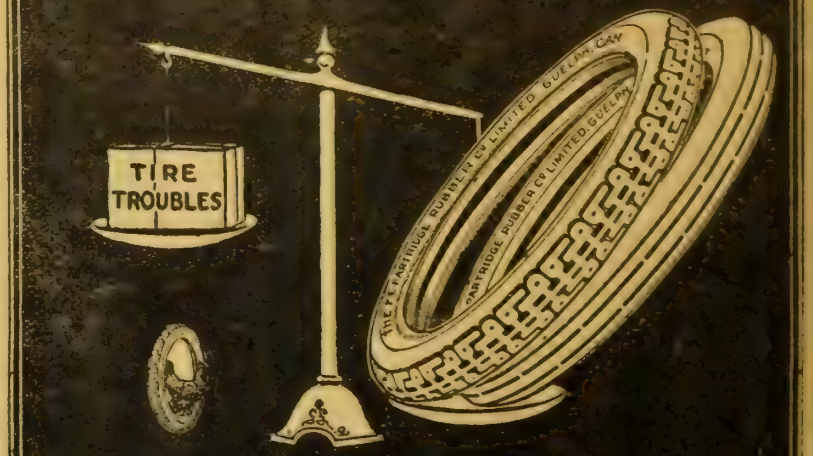
Let your next new tire be a Maltese Cross Tire. The new, continuous, non-skid tread is a successful long mileage feature. Sold by dealers all over the Dominion.

Gutta Percha & Rubber Limited

Offices and Factory, Toronto

BRANCHES

HALIFAX MONTREAL OTTAWA TORONTO FORT WILLIAM WINNIPEG REGINA- SASKATOON EDMOMTON CALGARY LETHBRIDGE VANCOUVER VICTORIA



Partridge Tires

Out-weigh Tire Troubles

Made by The F.E. Partridge Rubber Company Limited Guelph Ont

Advertise in the Maritime Farmer

87 Years of Growth

Ever since 1832 this Bank has been serving the Canadian public.

Its steady growth in assets and deposits is as much a tribute to public confidence in its integrity as to its own efforts.

Your savings account would be gladly received — and the regular interest and ultimate benefits will be decidedly welcome to you as time goes on.

Paid-up Capital $ 6,500,000
Reserve Fund - 12,000,000
Resources - - 150,000,000

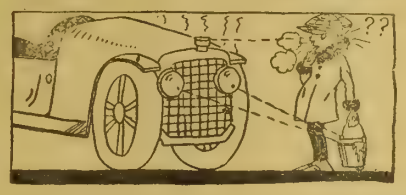
THE BANK OF NOVA SCOTIA

We invite your account. Special facilities for banking by mail. Thirty-three branches in New Brunswick. Head Office, Halifax N.S.

18A

much should be put in during severe weather?

Answer: An engine designed to be water cooled (as most engines are), requires that the radiator, the cylinder jackets and piping should always contain enough liquid to circulate freely. Unless this is the case, heat produced in the cylinder walls, by the explosions, will accumulate, instead of



being taken away by the water, until the cylinders are too hot to operate safely. The cylinder walls, not being exposed to the outside air, it makes no appreciable difference how cold this is. An engine designed to be cooled by air, has means by which air is rapidly circulated around its cylinder walls, just as the cylinders of a water-cooled engine are kept surrounded with moving water. It is best to keep the radiator nearly full, in warm and cold weather alike.

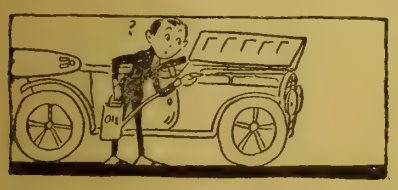
CARE IN USING THE STRANGLER

The very low volatility of commercial gasoline has made it necessary that every car be equipped with a "choker" or "strangler," acting to close the carburetor air-intake and send a great excess of gasoline into the cylinders, in order that enough of the lighter fuel constituents may enter to vaporize and cause an explosion, when the cylinders are not warm. Usually this choker is closed and opened from the operator's position and, as fuel is now, it has to be operated every time the engine is started from an unwarmed condition, practically the year around. The operator closes the shutter at starting, but too often forgets to open it soon enough, not realizing the immense waste of fuel and the serious effect upon the engine oil thus caused. It is extremely important that the choker be opened as much and just as soon as practicable, to avoid useless waste. As soon as the clutch is engaged and the car moving, it should be opened to see if the engine will not then continue to run and it should be closed only when necessary, as in acceleration, or when a considerable throttle opening has to be made use of. For a little time after starting a car cold, the choker may have to be opplied repeatedly, but it should be kept in action as little as practicable, if the operator has any regard for fuel economy or conservation of engine oil.

ABOUT OILING VALVES

P. G. H. asks: Should the valves of an engine be oiled?

Answer: It would perhaps be a good thing if valves could be oiled slightly. The exhaust valves of many engines receive at least all the oil that is good for them, but some motorists put a little ehigh-test oil in the gasoline to oil the inlet valves and the upper parts of the pistons, but this is seldom done. Valve stems should be kept oiled to reduce the rate at



which they wear in their guides. Where the valve mechanism is fully enclosed and a little oil spray is allowed to enter the enclosure from the crank case, valve stems and all parts of the valve gear receive pretty good lubrication, but in the case of exposed valve gears, even though oil is squirted onto the stems from a can, it soon escapes and the valves operate dry. All rocner arms and push-rod ends require frequent oiling.

COOLING SYSTEM QUERY

J. A. M. asks: In very severe cold weather, it is necessary to keeep any liquid in the radiator or will the extreme coldness of the air act as a cooling agent? Perhaps an engine has to be specially constructed in order to be kept from overheating in this way. In case water must always be kept in the radiator, how much should be put in during severe weather?

Answer: An engine designed to be water cooled (as most engines are), requires that the radiator, the cylinder jackets and piping should always contain enough liquid to circulate freely. Unless this is the case, heat produced in the cylinder walls, by the explosions, will accumulate, instead of being taken away by the water, until the cylinders are too hot to operate safely. The cylinder walls, not being exposed to the outside air, it makes no appreciable difference how cold this is. An engine designed to be cooled by air, has means by which air is rapidly circulated around its cylinder walls, just as the cylinders of a water-cooled engine are kept surrounded with moving water. It is best to keep the radiator nearly full, in warm and cold weather alike.

AUTO TIRES FOR FARMER SUBSCRIBERS

We Can Supply All Sizes Promptly. If You Are a Subscriber for the Maritime Farmer, Yours is the Privilege

The Maritime Farmer is pleased to announce that it can supply automobile tires in all sizes to bona fide subscribers of the Maritime Farmer. We are prepared to save our subscribers a good many dollars. We can also supply inner tubes for any size tire. The goods supplied by us are all FIRST QUALITY and are fully guaranteed. If you want to avail yourself of our auto tire service send along the size of your tire and we will quote you.

TO IMPROVE RIDING QUALITIES

R. G. writes: I own a high grade car, built four years ago, of a make which has now been discontinued. It is in splendid condition and satisfactory in every way, except that it rides frightfully hard, save when carrying seven passengers and even then it is pretty stiff What do you suggest?

Make your Ford Transportation even more Economical.

NEARLY a million Ford owners have found that maintenance and tire costs are reduced approximately 30 per cent and a large saving is made in fuel by the

For FORD Cars — HASSLER TRADE MARK REGISTERED — For FORD Trucks

Shock Absorber

PATENTED
MADE IN CANADA

The Hassler Guarantee: "Absolute satisfaction or your money back"

They protect riders from disagreeable shocks and jolts—you have such greatly increased comfort that your Ford car or truck rides and drives as well as the highest priced heavy models. They make the car safer, preventing sidesway at high speeds. The same shocks that disturb the passengers, also rack, strain and wear out the car. Hasslers prevent squeaks, rattles and deterioration. They make a Ford car or a Ford one-ton truck last longer and give it a higher resale value. The spiral, conical springs of chrome-vanadium steel compress on either upward or downward movements. They last and make the car or truck last.

HASSLER SHOCK ABSORBER PATENTED
CONICAL SPRING AT THIS ANGLE PREVENTS SIDESWAY
STOP ON LEVER PREVENTS UP MOVEMENT
SHOCK AND REBOUND ACTION DOWNWARD
TRADE MARK

10-Day Trial Offer

Don't ride without Hasslers because someone tries to discourage you. They are a quality product—worth their price. The Hassler dealer in your vicinity will put them on for 10-days' trial. Your money refunded if you say so. Write for name of dealer and Trial Blank.

ROBERT H. HASSLER, Ltd.
121 Sherman Ave., N.
Hamilton, Ontario, Canada

Answer: It might prove worth while to try having new springs put on this car, and we suggest that you take it to one of the concerns making a business of motor car springs, allow them to study its action and see if they cannot furnish you something better than you have at present. There may also be some combination of the present springs and shock absorbers, which will greatly better conditions.

Rings the Whole Line Everytime

That's just one of the time-saving features of this powerful instrument which is designed especially for Farm and Village service. The big five bar generator always gives every bell on the line strong, clear rings, rain or shine. No trouble reaching your party or hearing your call with

Stromberg-Carlson TELEPHONES

The instruments that enable you to talk and hear any distance as easily as if your party were at your elbow, on account of the high efficiency transmitters and receivers.

Simple, powerful, durable 1919 Models are now ready, their ability backed by over 2,500,000 telephones.

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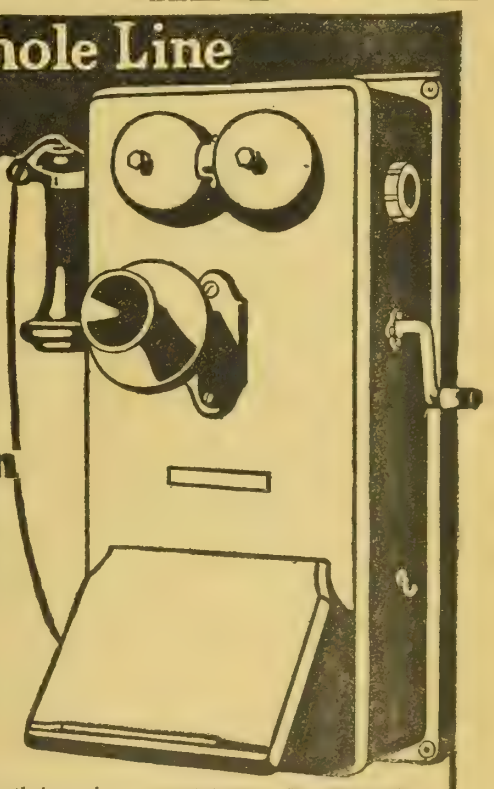


#896 WALL TELEPHONE

Describing all Strombergs and showing their service-giving features, explaining how to install and care for your telephone and how to organize and equip a party line among your neighbors.

Why not put your problems up to us. Our engineers will make plans and submit estimates without charge.

Stromberg-Carlson Telephone Mfg. Company
10 Front Street East TORONTO, CANADA

Stocks carried at Toronto, Regina and Seattle

BRIGHT OUTLOOK OVERSEAS FOR CANADA'S POULTRY INDUSTRY

"The market for Canadian eggs in Great Britain and France is exceedingly bright," said W. A. Brown, B.S.A., chief of the poultry division of the Federal Live Stock Branch on his return from Europe, where he went a short time ago for the express purpose of investigating and obtaining first hand information regarding the egg and poultdy situation and the possibilities of extending Canadian trade in that direction. Needless to say, Mr. Brown obtained what he was after, and after a most searching investigation, which covered practically every phase of the trade in Great Britain and France, he has returned to Canada with a most encouraging message to Canadian poultrymen, the assurance of a good market for their produce for many years to come. His investigation included a personal visit to all the large egg dealers in Great Britain with the exception of those in the cities of Hull and Newcastle, and on the continent he went right up to within a mile or so of what is known as "no man's land."

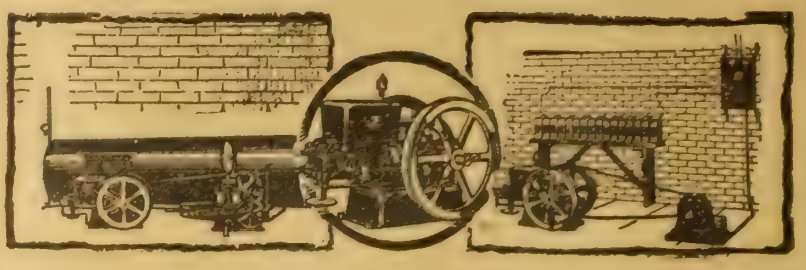
In France Mr. Brown found eggs as well as other comomdities very scarce the former selling at 95c to $1.00 per dozen, and even at that they could not be obtained. The people were anxious to buy eggs of ahy kind, preferably Canadian produce; but the great difficulty was the inadequate shipping facilities. A few Canadian eggs had reached France indirectly, but a shipload was now on the way over. Mr. Brown, however, pointed out that the demand for eggs might not continue for very long because France would be producing enough for her own use at least before many years. It was surprising to find how wel the flocks of that country had been kept up even to within a few miles of the firing line, and although smaller than formerly the French farmers have a nucleus, and it will only be a matter of time before they recuperate sufficient to relieve the situation.

In the British Isles, Mr. Brown found the same scarcity of eggs, but with a situation somewhat different to that of France, as there was not the same prospect of Great Britain ever being able to supply her home demand, with the result that she would have to rely upon importing a large percentage of her requirements. At present that was not possible, owing to shipping difficulties, and eggs were selilng at about 80 cents per doz. "Here is Canada's opportunity," said Mr. Brown, "and there is no reason why we cannot capture and hold a great part of that trade if we go after it as we have the advantage of shipping and can supply the quality if a little more care is exercised." Of course competition would be keen, no doubt, but Mr. .Brown felt thta could be overcome.

In regrd to the disorganized condition of Russia her egg producing area was far inland, consequently she was up against the shipping question. Here China was the only real competitor, and Mr. Brown felt that this competition might be serious as great quantities of Chinese eggs were reaching Europe today, and they were also sending in an egg powder which was bound to have a tremendous influence, as it fas becoming popular, largely on acocunt of its easy shipment.

Asked as how Canadian eggs compared in quality with other countries, Mr. Brown explainer they could hardly compare with Danish and Irish eggs but were a close second. The finest eggs Mr. Brown saw were on the Preston Market in England, near where the great poultryman, Barron, carries on his well-known breeding establishement. The country round about has become thoroughly infested with his strains and the result has been a great improvement in the eggs marketed. However, Mr. Brown explained that all the British eggs were not up to such a high standard and next to the Preston eggs the Danish products were the best. They were remarkably uniform, clear, large, but somewhat transparent, and gave the appearance of being short keepers. In that respect they were inferior to the Canadian egs and could not stand shipping as well. The Irish eggs were almost as choice as the Danish but even with these two countries shipping the supply was far short. Next to these came the Canadian eggs and Mr. Brown had some interesting conversations with the Old Country dealers. He explained to them our system of grading and how our Westenr Provinces were going into poultry raising and actually exporting eggs. He assured them that Canada's effort towards increased production was not a spasmodic affair brought on by the war, but would continue to grow as time went on. He said the dealers over there were very glad to hear that, and they appeared anxious to get the Canadian product, in fact, are getting some of it now.

"On the other hand, al is not going to be plain sailing," continued Mr. Brown, "and Canadians must improve the quality of their product if they wish to capture that great market." This could only be done, he pointed out, by getting eggs onto the market in les time than is customary at present. He contrasted the slow, careles methods of handling perishable products in Canada with the rapid transit carried on in the British Isles. Yet he wa was glad to know that a great improvement was being effected in this country by the local eggs cir-



Complete The Farm Home With This Equipment

Running water and electric light are all that are necessary to make the modern farm home as comfortable and convenient as the city house. Insure this comfort in your home by installing a

Fairbanks-Morse

Pneumatic Water System and Type "F" Electric Light System

This combination brings the farm up to date and guarantees comfort, economy and efficiency. The same engine runs them both. It means light anywhere you want it—running water in any part of the buildings. It means the drudgery removed from the ordinary chores and the house work.

Write our nearest office for full particulars regarding this combination equipment for your farm. 7

The Canadian Fairbanks-Morse CO., LIMITED

St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Windsor.

cles where they were in operation.

In conclusion Mr. Brown said that he had no additional recommendations to add to those adopted at the recent poultry conference held at Ottawa, but wolud like to emphasize a few of them, particularly the ones dealing with increased and economic production, co-operative marketing, standardized product and quicker transportation.

CHICKS KEPT WARM LOSE POWER OF LEGS

I have some chickens two weeks old, hatched in an incubator. They have done well all along until now. A number of them are losing the power of their legs. I have kept them in the brooder, and in warm condition acocrding to directions with the incubator.—J. S. P.

A number of queries reach this office regarding the troubles that afflict the young chicks after they leave the incubator, showing that many baby chicks are lost because of wrong methods and feeding. You have kept your chickens too warm, without exercise, and it is not at all likely that you can bring those that have lost the power of their legs, back to normal again.

All brooders should have a partition in the centre with a runway for the chicks to go from one room to the other and a swinging door for the attendant. The stove is placed on one side of the partition and the cool room is used for feeding and exercise. It is necessary to have a cool room so the chicks can get away from the heat. This is one of the secrets of sucecssful brooding. It also pays to give the little fellows access to the ground as soon after starting to brood them as possible. Even the second and third day is none too early, care being taken the first few days to be certain they know the way into and out of their house. Provided the sun is shining and no hard winds can hit them, baby chicks do well if allowed to run in and out even on fairly cold days. Do not put them out on hard, frozen ground.

The houses for these brooder stoves are built similar to laying or breeding houses. Special care must be taken to insure proper house ventilation. A slow movement of fresh air coming in on one side a foot above the floor and raising gradually upward as it warms and the oxygen from it has been consumed, until it reaches a point close to the ceiling where there should be an exit opening, will help keep the house free from impurities and foul odors, thus maintaining health, vigor and appetite among the chicks.

To make the house comfortable provide some method of ventilation near the floor but avoid drafts. Be certain to provide for one cool room. You want light in your brooder house but not in the direct rays of the sun. Keep the chicks busy and active. Put fresh earth on the floor in one corner of the room every two or three days. This will help prevent foot and leg weakness besides the little fellows like it. Grind some lean meat and mix equal parts of bran, shorts, and ground meat, with a little water just to moisten it a trifle. After it is mixed run it through a sausage mill or meat grinder and then feed it to the chicks every day.

Cover the floor of the brooder rooms with clover or alfalfa chaff or fine cut straw. Don't have this too deep. Keep sour milk or butter milk before them to drink at all times from the first day. For the first two or three days feed a mixture of two-thirds rolled oats, one-third wheat bran, mixed with hard boiled eggs, a little powdered charcoal and fine bone meal. Feed a little five times a day for the first three days. Then give two meals a day of commercial chick feed. The first mixture is fed morning, noon and night and the chick feed is given between meals. As they become older, gradually eliminate the rolled oats

Cream of the West Flour

—the hard wheat flour that is guaranteed for bread

The high gluten flour prized for splendid big loaves of delicious, nourishing bread. Ask for it at your dealer's.

The Campbell Flour Mills Company, Limited, West Toronto

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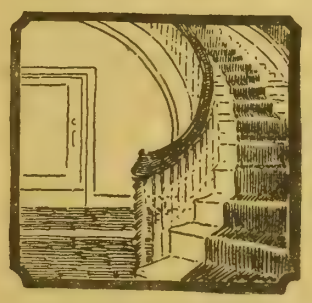


No less inside the house than out, every surface calls for protection. Daily use means daily wear upon the surface of everything used. Appreciate the principle of surface protection.

Agricultural machinery has to stand severe exposure. Their surface protection is absolutely indispensable if rust and corrosion are to be kept at bay. Rust cannot penetrate till the surface is broken. Save the surface and you save all.

Anything worth owning is worth preserving

GOOD money put into a home, a barn, a silo, or automobile needs protection as much as good money put into a bank

A wooden house is a wonderfully enduring thing if given reasonable protection. What is true of wooden houses is true of all things made of wood, be they in the city or country, be they stable or garage, wagon or desk.

And what is true of wood is true of other materials. Steel and iron from bridge and skyscraper to roof of shed—they last or they rust, depending upon whether or not they have surface protection.

If protected the surface is an impassable barrier to rust, rot, friction or disintegration. If unprotected it is an open door.

Whatever other good purpose paint and varnish may serve, in every case they save the service—their first and greatest service to property.

Your property is safe only when the surface is safe. The chief purpose of all paint and varnish is to save the surface so save all.

THIS ANNOUNCEMENT *is issued by the Canadian Save the Surface Campaign Committee, for the purpose of educating the public in the Preservative and Protective value of Paint, Varnish and Allied Products for the Conservation of Property, and has received the approval of the Canadian Trade Commission in the following words:*

"The realization of the above objects will lead to employment during the Reconstruction Period and bears our entire approval.

THE CANADIAN TRADE COMMISSION

Commissioner."

13

"SAVE THE SURFACE AND YOU SAVE ALL" *Paint & Varnish*

WOOD | PLASTER | CONCRETE | MANUFACTURED PRODUCTS | METAL | BRICK

until you use only the chick feed and keep before them a dry mash mixed in the following proportions: Ten pounds wheat bran, two and one-half pounds ground oats, five pounds sohrts, two ounces fine salt. If you cannot secure sour milk or butter milk then mix two pounds of dry beef scraps with the above. If you use any form of milk, keep it before them at al times or at least the first half of the day. Use clippings from sprouted oats or cut up some onions or lettuce occasionally.

THE USE OF DISINFECTANTS TO DESTROY DISEASE GERMS ESSENTIAL ON EVERY FARM

(Continued from page 604)

Cresol

Cresol, commonly termed "straw-colored carbolic acid," liquid "carbolic acid," etc., in a 2 per cent. solution is an efficient disinfectant. It has the disadvantage, however, of being somewhat difficult to dissolve, so in preparing a disinfecting solution warm water should be used and care exercised that the drug is entirely dissolved. As the disinfecting power of cresol is dependent upon the amount of cresylic acid contained therein, it is essential when using the drug to know the degree of purity. Grades can be purcahsed under a guaranty to contain from 90 to 98 per cent. of cresylic acid. Any containing less than 90 per cent. should be rejected.

Compound Solution of Cresol

Compound solution of cresol (liquor cresolis compositus) is composed of equal parts of cresol (U. S. P.) and linseed oil-potash soap. It is an efficient disinfectant in a 4 per cent. solution and has the advantage of mixing readily with water.

Zenoleum is also a very efficient disinfectant and should be used more widely on most farms.

SOME GENERAL INFORMATION ON LIME AND ITS USES AND FUNCTIONS IN SOILS

(Continued from page 905)

Limestone or marl may be added immediately before seeding or to growing crops without injury, but if caustic lime is used, it should be applied and incorporated with the soil at least ten days or two weeks before seeding, in order that its caustic properties may be dissipated before the seeds germinate, thus avoiding injury to the young plants.

Alfalfa may be top-dressed with the carbonate carrying compounds and where the alfalfa renovator or springtooth harrow is used the lime may be mixed with the soil to some extent. As a rule if the land is limed previous to this crop it will endure as long as the alfalfa is permitted to occupy the land. Reports are on record which show that permanent meadows and pastures growing on soils deficient in lime may be profitably top-dressed with this substance.

It is readily seen that one may apply lime under widely different conditions. Thus, there are opportunities for the consideration of this operation in relation to other farm work, condition of weather and the land.

Lime must be applied repeatedly to the soil. It has been shown by determining the amount of lime carried by river water, well water, and drainage water from tile, and large containers filled with soil and placed in the ground, that as a general rule much more of this substance is washed out of the soil than is removed by crops. Although the amount so lost has been shown to vary rather widely it is probable that 300 pounds per acre annually, closely approximates the losses under average conditions. At any rate it is now looked upon as being sound practice to lime the soil at least once in each four or five-year rotation. Further experience may show that small frequent applications of lime are most profitable on some soils.

Plows Fast - and Plows Well

RIGHT NOW is the time to get a lot of profitable plowing done. Right now is the time to lay the foundation for a bumper crop next year.

Plow fast — and plow well.

Plow with a Cletrac tank-type Tractor.

10 acres a day — plowed deep and well pulverized. Plowed economically because the Cletrac tank-type Tractor absolutely operates on kerosene (coal oil)— uses no more kerosene than other tractors use gasoline. Intake completely covered by burning hot exhaust — vaporizes kerosene entirely—that's the secret.

The Cletrac tank-type Tractor will do the work of three teams and three men in plowing and summer fallowing. Saves time.

Puts more ground under cultivation—*earlier*.

Get that waste land to work, too. The track-laying Cletrac is the right tractor for work over rough ground. Climbs hillsides where horses can't pull a plow. Plows heavy muck land and soft ground *where other tractors stall*. The Cletrac lays a broad, safe, light track for itself.

Every month in the year you'll find profitable uses for your Cletrac. Small, light, *travelling over plowed ground without packing it*, operating on kerosene— the Cletrac is the tractor of greatest usefulness— 12 h.p. on the draw-bar, 20 h.p. on the belt pulley.

Learn more about the Cletrac tank-type Tractor. Phone or write the Cletrac dealer near you. Write us for our book "Our Owners Say" showing the Cletrac helping other farmers make money.

Ontario Experimental Farm, Ottawa, Ont.

Gentlemen,—I take pleasure in stating that the work done by you with the Cletrac Tractor recently, on the Experimental Farm, Ottawa, was entirely satisfactory either on plowing, discing or on belt work.

I might put particular emphasis on the satisfaction it gave in driving a No. 3 Massey Harris Blizzard Blower in filling one of our Silos; the power delivered was very even and the motor handled the work apparently with very little effort. (*Signed*) *D. D. GRAY, Farm Superintendent.*

The Cleveland Tractor Co. of Canada, Limited, Windsor, Ontario

Cletrac

TANK-TYPE TRACTOR

Lounsbury Company, Newcastle. R. H. Sterns, Charlottetown.
J. Clark & Son, Fredericton. Motor Sales Company, Halifax

Lime and Manure. Under some conditions lime and manure may be applied to the soil at the same time. Where the lime is in the form of the carbonate, namely, as marl, ground limestone, air slaked, sugar factory lime or that obtained from the manufacture of acetone, it may be mixed with the manure in the heap or stable or applied to the soil with it. In the light of our present knowledge the oxide and the hydrated lime should not come in contact with the manure and should precede its application to the soil ten days or two weeks.

Summary.

Lime is needed by many soils to increase their crop-producing power. When applied to soils that are deficient in it lime may alter the structure, neutralize acids and other injurious substances, satisfy the silicates, in some cases make available mineral plant food elements, increase the rate of decay of vegetable matter, make manures and fertilizers more efficient and supply lime needed in the formation of plant food.

The immediate efficiency of limestone depends in a large measure upon the fineness of the particles and thorough incorporation with the soil while that of marl depends upon its purity as well as thorough mixing with the soil. Hydrated lime usually acts quickly in the soil. On account of its greater solubility its incorporation with the soil mass is not so essential, as it tends to move about in the soil with the soil moisture. Especially is this the case with sandy soils and with the larger applications.

Although crops differ somewhat with respect to their lime requirements, it has been conclusively proved that if the soil is deficient in lime the common crops with few exceptions, respond to its use.

The margin of profit from normal applications of lime on so-called acid soils is safe, as has been demonstrated by many experiment station workers and farmers.

The efficiency of stable manures and fertilizers is increased by ample quantities of lime in the soil, conversely, stable manure and fertilizers increase that of lime.

The most economical or best amount of lime to apply to a given soil cannot be determined by laboratory methods, although its needs may be indicated by several. Field trials should always be conducted when one applies lime to the soil, this being nothing short of sound business methods.

Lime should be applied to the soil in the rotation as near as practicable to the crops that are most benefited by it especially if small applications are made. This coupled with the fact that thorough mixing with the soil is essential are the chief considerations in the applications of lime to the soil. In some cases it is profitable to top dress alfalfa. Moreover, permanent meadows and pastures growing on soils deficient in lime may be top dressed to advantage.

Conclusion.

In view of the low lime content of many soils the losses entailed by leaching and by crops removed from the land and much evidence that its use is profitable, every farmer should satisfy himself by thorough field trials that his soil does or does not need this substance. There are many indications that lime, by establishing alfalfa and clover, as well as by its favorable effect on other crops is the most promising single substance the farmer has at his disposal for soil improvement.

Although many facts have been established concerning the liming of soils it is unquestionably true that our knowledge of several phases is meagre, especially is this true of sandy and muck soils. The question as to the most economical fineness of grinding limestone is one that cannot be satisfactorily answered. Moreover, the forms, fineness and size of applications for different soil classes are worthy of serious consideration.

Finally, lime should be looked upon as only one of the conditions involved in permanent systems of soil fertility. Since its presence in the soil results in a somewhat more rapid decay of vegetable matter precautions must be taken by means of crop rotation, turning under crop residues and manure to maintain this substance which is so vital to soil productivity.

LOSSES FROM TUBERCULOSIS

In the year 1916 o total of 3,000 carloads of hogs and cattle were condemned as being unfit for human food by the U. S .Bureau of Animal Industry on acount of tuberculosis. This is a large toll and it is borne very largely by the producer of cattle and hogs. It emphasizes the importance of some money being spent to eliminate the losses from tuberculosis.

MARKETS.

CHARLOTTETOWN

MARKET REPORT

June 2, 1919.

Beef, Ox, 22c to 24c; Cow, 20c to 22c (carcass).
Veal, carcass, 14c to 16c.
Lamb, none.
Mutton, 20c to 22c, carcass.
Beef Hides, 17c per lb.
Sheep Skins, $3.00.
Calf Skins, 35c lb.
Potatoes, market quiet, 80c to $1.00 per bushel.
Carrots, none.
Turnips, none.
Parsnips, none.
Oats, market tsrong, 80c to 85c per bushel.
Cornmeal, market strong, $4.00 to $4.50 per bag.
Bran, scarce. $2.35 to $2.45 per bag.
Oatmeal, $6.00 per bag.
Middlings, $2.50 to $2.55 per bag.
Cotton Seed Meal, none.
Oil Cake, $3.50 to $3.75 per bag.
Buckwheat, none.
Ontario Flour, $12.00 to $12.25 in wood.
Manitoba Flour, $12.25 to $12.50 in wood.
Chickens, none.
Fowl, none.
Turkeys, none.
Geese, none.
Butter, Creamery, 58c to 60c.
Butter, Dairy, 50c to 52c.
Cheese, none.
Eggs, 46c to 48c.
Hay, $28 to $30.00 per ton.
Straw, $12 to $14.00 per ton.

THE CATTLE MARKET

Montreal, June 9.—The second shipment of live stock from the port of Montreal for the season 1919, was made last week on the S.S. Bildster for Havre. This shipment consisted of 325 head of extra choice Ontario steers, which cost $14.75 to $17 per 100 lbs. in Toronto consequently with the ocean freight rate and other charges added, they will be very dear cattle landed in France. The total shipments so far this season have been 554 head.

At the Canadian Pacific Live Stock Market today the offerings amounted to 150 cattle, 150 sheep and lambs, 650 hogs and 1,800 calves. In sympathy with the weaker feeling in cattle at other Canadian centres of late an easier undertone prevailed in the local market today, but on account of the small offerings and the demand being ample to absorb them there was no actual change in prices to note. The best steers on the market sold at $13.50 to $14, and the lower grades from that down to $10, while the best cows and bulls brought $11 to $11.50, and the commoner stock from $7 to $10 per 100 lbs.

The feature of the small meat trade was the strength in calves and prices scored an advance of $1 to $2 per 100 lbs. The demand was good for supplies and an active trade was done with sales of good to choice lots at $12 to $15 per 100 lbs. and the lower grades at $10. The tone of the market for hogs was easier and prices declined 50c per 100 lbs. owing to the drop of $1 in the Toronto market on Tuesday, and sales of selected lots were made here today at $21.50 to $22 per 100 lbs., weighed off cars, and rough stock sold as low as $21. The demand for spring lambs was steady and prices were unchanged at from $7 to $12 each, as to size and quality.

DAIRY PRODUCE TRADE

Montreal, June 9.—The receipts of butter today were 481 packages, as compared with 633 for the same day last week, and 68 for the corresponding date a year ago. The market today was without any special feature to note, the feeling being steady, with supplies more than ample to meet all immediate requirements. There is little or no demand from outside buyers at present, and business in this direction is limited, but there was some demand from local operators, and sales of several fair-sized lots of finest creamery were made at 54½s to 55c per lb. A good steady trade was reported in a jobbing way, and prices were unchanged, with sales of finest creamery at 56c per lb. in solid packages, and at 57c in 1-lb. blocks.

We quote wholesale prices as follows:

Pasteurized creamery	..00c	to 56c
Finest creamery	.....54½c	to 55c
Fine creamery	.....54c	to 54½c
Finest dairy	.....48c	to 49c
Fine dairy	.....47c	to 47½c

The receipts of cheese today were 4,461 boxes, as against 2,326 for the same day last week, and 4,684 for the corresponding date a year ago. At Peterboro today the offerings on the board amounted to 1,067 boxes for which the bidding was slow, there being only two buyers present, and all sold at 30¼c per lb. which price shows a decline of ¾c per lb., as compared with two weeks ago. According to some in the trade there was no improvement in the demand for foreign buyers for supplies, and business this direction was dull, while others stated that some bids were coming forward for fair-sized lots, and as they were satisfactory in some instances, sales were being made, but the volume of business was not large.

THE PROVISION MARKET

Montreal, June 9.—A feature of the live hog situation was the weaker feeling which developed in the Toronto market on Tuesday, and prices scored a decline of $1 per 100 lbs., as compared with those paid last Thursday, wtih sales at $21.50 weighed off cars, and at $21.25 fed and watered. In sympathy with the above the market here today was also weaker, and prices for selected lots declined 50c per 100 lbs. and the prospects are that they will go still lower in the near ftuure. At the reduction there was a fair demand for what stock was offered, an sales were made at $21.50 to $22 per 100 lbs., weighed off cars, with the usual cuts of heavy weights, sows and stags. On account of the above there was also an easier feeling in the market for dressed hogs, and prices were 50c per 100 lbs. lower, with a small trade passing in city abattoir fresh-killed stock in a jobbing way at $30.50 to $31 per 100 lbs.

There was no change in the condition of the market for smoked or cured meats, prices being maintained under a good steady demand for domestic consumption, and a fairly active trade was done in a jobbing way in 8 to 10-lb. hams at 41c to 42c per lb., 12 to 15 lbs. at 39c to 40c, and heavier weights at 37c to 38c, while breakfast bacon sold at 44c to 45c, Windsor selected bacon at 47c to 48c, and Windsor boneless bacon at 49c to 50c. The demand for barreled pork is somewhat limited, and the market is quiet, with Canadian short-cut in a jobbnig way quoted at $58 to $60 per barrel.

A firm feeling prevails in the market for lard under a good demand for supplies for local and country account, and the movement is fairly large for the season, wtih sales of Canadian pure leaf grades in a jobbing way at 37c per lb. in 20-lb. wood pails, and at 38c to 38½c per lb. in 1-lb. blocks.

The receipts of provisions today were 3,794 pacakges tinned meats, and 182 boxes hams and bacon.

THE LOCAL FLOUR MARKET

Montreal, June 9—There were no important developments in the local flour situation today, prices generally being firmly maintained. The demand for spring wheat flour from local and country buyers continues good and an active business is passing for the season of the year wtih supplies ample to meet all requirements, and sales of car lots of Government standard grade for shipment to country points were made at $11 per barrel in jute bags ex-track, Montreal freights, and to city bakers at $11, ex-track, or at $11.10 delivered, while broken lots to city bakers sold at $11.10 ex-track, and to grocers and other dealers at $11.20, ex-track, all less 10c per barrel for spot cash. The demand for feed flour continues urgent and as supplies are none too large to meet the wants of the trade, prices rule very firm at $7 to $7.50 per barrel in jute bags. The trade in winter wheat flour is rather quiet on account of the fact that most of the large buyers have now ample stocks on hand for the present, and sales are now principally in small lots at $11.40 to $11.50 per barrel in new cotton bags, and at $11.20 to $11.30 in second hand jute bags, ex-store. The trade in white corn flour is steady and prices rule firm at $10.10, and rye flour is selling at $8.75 to $9 per barrel in jute bags, delivered to the trade.

MILLFEED AND ROLLED OATS

A very firm feeling prevails in the market for all lines of millfeed owing to the continued good demand for supplies for local and country account, and a large volume of business is being done with sales of car lots of bran at $42.50 to $43, and shorts at $44.50 to $45 per ton, including bags, ex-track, with smaller quantities of bran in mixed cars selling at $43.50 to $44, and shorts at $45.50 to $46, feed cornmeal at $70, pure barley meal at $62 to $64, mixed grain moullie at $62 to $64, mixed moullie at $56 to $58, dairy feed at $48, and oat middlings at $44 per ton, including bags, delivered to the trade. A good trade is reported in rolled oats for export account, but there is no improvement in the demand for domestic consumption and prices are unchanged with standard grades in broken lots quoted at $4.10 to $4.25 per bag of 90 lbs., and Golden cornmeal sold at $5.25 to $5.35 per bag, delivered to the trade.

Saved Thousands of Hay Crops

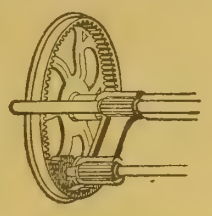
We can tell by letters from hundreds of enthusiastic farmers all over Canada who use the

FROST & WOOD MOWER

that thousands of hay crops have been saved because the Frost & Wood Mower, with the superior, life-long efficiency was on the job—tackling any kind of crop, "down" or standing and on the roughest kind of ground, and always ready for good work.

As soon as the wheels move the Knives start cutting

Light, but immensely strong, high carbon steel—and high grade roller bearings at every friction point give the famous F. and W. light draft. Convenient and easily operated levers give quick control—the knives go on cutting when bar is raised to clear an obstruction, saving time and crop.



FROST & WOOD "INTERNAL DRIVE" MEANS GREAT EFFICIENCY

See the little cut at the left—it shows a splendid F. and W. feature. Here is where the power is taken to operate the knives—a small wheel or pinion revolves on the inside of the power wheel, the cogs on each travel in the same direction, no tendency to fly apart, loosen or snap off,—means quicker-acting power and longer life.

Why not have "the best" on your farm too? See the Frost and Wood Mower when next in town. It's the Mower for you. You'll say so yourself. Write to-day for illustrated folder.

THE FROST & WOOD CO., Limited

Truro ST. JOHN, N. B. Charlottetown

CATTLE POISONED BY LEAD

In view of the spring clean up that is usual at the farm, I wish to say a few words to caution all livestock breeders against the use of lead paint in places accesible to stock while the paint is still fresh.

I just had an experience here on the farm. The painter, who was painting the hallway of my new stable retouched a small strip of the windows in the calf pens. Shortly following this the caves took sick. The diagnosis showed lead poisoning and we immediately removed all the calves from that stable, but even at that we lost four valuable youngsters.

This experience may save a loss to some fellow breeders. Whenever you see a paint brush used near stock, consider it a danger sign.—J. P. in Ottawa Valley Journal.

COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and breeders, Clydesdales, Dairy Shorthorns aed Border Leicester Sheep. Present offerings: 1 imported stallion, several young bulls, six to fifteen months old also a number of ewe and ram lambs for fall delivery.

G. C. Cossar, Prop. — J. Meiklejohn, Agent.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm
OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired by Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

Clearing Sale of Shorthorn Cattle

Am offering for sale my herd of pure bred registered Shorthorn cattle. These cattle range in age from 7 years to 3 years, or a little less, with one bull calf two weeks old, and are all fine in type and color.

I have also exceptionally good grade cattle of various ages for sale. All will be sold at a reasonable price and offer an unusual opportunity to anyone desiring to start a herd of choice stock or to renew an old herd.

J. E. HETHERINGTON, - Codys, N. B.

FOR SALE !

Two excellent Guernsey bulls from good stock, will be sold reasonable if taken at once.

SARAH E. M. SMITH,
Woodwards Cove, Grand Manan, N. B.

FOR SALE
R. O. P. HOLSTEINS.

Two bulls ready for service, and several bull calves. The right type and prices right.

For description and price write,

D. R. NICHOLSON,
"Riverview Farm", Coxheath, N. S.

FIRSHADE FARM
DUAL PURPOSE SHORTHORNS
Present Offering:—Two Bull Calves

No. 1.—Son of Daisy Lodge, R. O. P. 11,638 lbs. milk, 480 lbs. fat. This cow led the four-year-old class in the Canadian Record of Performance.

No. 2.—Son of Queen Charlotte. She as a two-year-old has a R. O. P. of 7224 lbs. milk, 316 lbs. fat. This cow stands eighth in milk and sixth in fat production in the two-year old class.

The sire of these calves is Nivalie, whose dam as a two-year-old has a R. O. P. of 5496 lbs. of milk, 240 lbs. fat in 295 days.

P. R. L. FAIRWEATHER, Rothesay, N.B

Maple Grove Farm Holsteins

Herd headed by the 32.32 lb. Sire "King Korndyke Johanna" No. 32915. 13 of his nearest female relatives average 34½ lbs. Butter in 7 days; his Dam and Grand Dam have each milked over 100 lbs. per day. Owing to the fact that we have decided to make some improvements about the farm this coming season, we have decided to reduce our herd to about half its present strength, consequently are offering some cows, heifers and calves that we otherwise positively would not put a price on. Cows and heifers due to freshen in March and April, others bred to freshen next November. Every thing with official Records or official Record Backing.

Phone or write for description and prices.

R. L. HICKS
Dalhousie Jct., - - N. B.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM
Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

Holsteins Hold All Championships

World's Record Price for Cattle—
Carnation King Sylvia....$106,000.00
World's Record for Butter, One Year—
Duchess Skylark Ormsby 1506.35 lbs.
World's Record for Milk, One Year—
Lutscke Vale Cornucopia 31246.9 lbs.
World's Record for Butter, Seven Days
Segis Fayne Johanna.....50.68 lbs.
World's Record for Milk, Seven Days—
May Echo Sylvia.....1005.8 lbs.
Canadian Record for Butter, One Year
Lady Pietje Canary's Jewel
1173.66 lbs.
Canadian Record for Milk, One Year—
Zarilda Clothilde 3rd DeKol
30467.0 lbs.

IF YOU CAN'T BUY A HERD, BUY A HEIFER.

Information from the Holstein-Friesian Association.

President, Dr. S. F. Tolmie, Victoria, B. C.
Secretary, W. A. Clemons, St. George, Ont.

Bloomfield Stock Farm

Clydedales horses, Ayrshire and Guernsey cattle, Shropshire sheep.

Present offering: 1 imported Pure Bred mare.

J. ROBIE MacDONALD,
Shubenacadie, - - Nova Scotia
Successor to J. MacDonald & Son

QUALITY BRAND
Rabbitry and Poultry Yards
Amherst, Nova Scotia
E. I. PEEL & SON, Proprietors

Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

Black Siberian Hares, the most profitable fur bearing animal living, price per pair..$25.00
Silver Siberians, price per pair..... 5.00
Belgians, price per pair 3 00
The above prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each.
D. W. Young's stock, as good as money can buy.
White Leghorn 260 egg strain, for hatching.....$2.00 per 15
White Leghorn, No. 1 exhibition stock for hatching.....$4.00 per 15

We Guarantee Safe Delivery. Terms Cash with Order

CAULIFLOWER PLANTS

Genuine Early Snowball. 50 for 45c, prepaid. Shipped successfully everywhere. Ask for Price List of Cabbage, Celery and other Vegetable Plants.

HEROLD'S FARMS,
FRUITLAND, Ontario. Niagara District

FOR SALE !

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st. 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and st in grade cow, competing against all breeds at our late show at Charlottetown. with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," - VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

Present offering: one bull two years old, two aged seventeen months. Also a number of younger ones. Females any age. This herd is bred for production having the combined strain of "Jean Armour" and "White Heather"

J. FRANK ROACH, Proprietor,
Phone 111. - - - - Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.

We have young bulls for sale whose two nearest dams (both Canadian champions) average as high as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows: and one ready for service from a 41-lb. sire and an 18,000-lb two-year-old dam. Send for our BOOK OF BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT

BELLEVUE STOCK FARM
Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, HAMMOND RIVER, N. B.

We are offering for sale calves of both sexes, sired by Dutchland Pieterje Count, a bull of splendid size and type, whose four nearest dams have records averaging 28.61 pounds of butter in seven days. His dam is a daughter of Colantha Johanna Lad, who has 101 A. R. O. daughters, 4 over 32 lbs., 7 over 30 lbs., three of them world's records for 365 days. If you want something choice, come and see these calves or write for further particulars.

We will also book orders for young Yorkshire pigs for next spring's delivery.

WM. S. HARDING, Prop.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

We have sold 13 head in the last few weeks but there are some dandy good ones left yet. Special offering—2 heifer calves and several bull calves, sired by Prince Colantha's Canary B. whose four nearest dams average 32.84 lbs. butter in 7 days; 105 lbs. milk in one day. These are beauties. A couple of yearlings and two-year-old heifers, bred to Prince, due in the fall. Several young cows and heifers milking, due to calve from August to December. We have a couple o bull calves fit to head the best herds in the provinces. Come and see them. We would be Pleased to meet you at Truro if notified.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

BULL'S CREEK FARM
R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lbs. butter each in seven days. These cows have in turn been bred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkable combination of breeding and will sell a heifer calf or two. Get your orders in quick, they won't be here long.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

FOR SALE ! Five Ayrshire Bulls for Sale !

Ayrshire bulls, eleven to fourteen months. R. O. P. ancestors and best of breeding.

From good milking strain. All fit for service.

A. A. H. MARGISON
EAST CENTREVILLE - - N. B.

Prescott Blanchard,
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YORKSHIRE PIGS for sale. Registered and not registered. Write HENRY McINTYRE, Box 525, Campbellton, N. B.

FOR SALE—The Shannon Berkshire Pig Club have a number of choice Berkshire pigs for sale. For information apply to HAROLD N. McCREADY, Shannon, N. B.

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WANTED—Persons to grow mushrooms for us at home; from $15 per week upwards can be made by using waste space in Cellars, Yards, Gardens, etc. (start now); illustrated booklet sent free. Address MONTREAL SUPPLY COMPANY, Montreal.

WANTED—Mother and daughter or two girl friends, one for domestic help and the other as nursemaid. Good home and high wages for good willing capable help.—MRS. W. G. STEVENS, Chatham, New Brunswick.

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My present offering includes two Jersey Bulls, one eight months old, the other twenty-three months old. Fit to head any herd. If interested, write for particulars and prices.

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Registered Percherons for Sale

One mare, five years old. One stallion, rising two years. One stallion, rising one year. Dam, "Dixie Grey," (1593). Sire, "Muster," (4313) (53324.) Good size.

W. B. WEBB
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POULTRY FOR SALE !

15 White Wyandottes, 6 S. C. Brown Leghorns, and 15 Utility Barred Plymouth Rock hens, $2.00 and $3.00 each. These will make the best of breeders for next season. Orders booked now for cockerels and pullets to be delivered in August and September. Prices $2.00 to $5.00 each. Special rates on mated pairs, trios or breeding pens. Satisfaction guaranteed. For further information address

H. M. McMONAGLE,
Box 652, FREDERICTON, N. B.

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S

Springbrook Farm Ayrshires !

Females, all ages. Also a number of bull calves ranging from one month to eight months. Sired by the prize winning bulls "Morton Mains Amanth" Imp. and "Cherry Bank Cicero."

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SUSSEX CORNER, - - N. B.

Lawndale Stock Farm

Jerseys and Shorthorns (Pure Bred)

Jersey Offerings for the Summer of 1919—

One 4-year-old Grade, heavy milker, due to freshen from pure bred bull, Oct. 11th, 1919.
Several pure bred calves, male and female.

Shorthorn Offerings for Summer of 1919—

One young bull (pure bred and registered), dropped March, 1918, of splendid parentage.
One 2-year-old heifer, due to freshen Dec. 1st, 1919, from imported English sire of milking strain.
Two yearling Heifer Calves, very thrifty.
One Bull Calf, dropped Jan. 16th, 1919.
Apply for information to

I. M. LOVITT, M.D.,
Yarmouth North, - Nova Scotia

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B'

Ayrshire Cattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.
C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE PIGS

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

ACCREDITED HERDS ADVISED

At last a plea for an "accredited herds" list has been heard at Ottawa. Speaking before the Common Committee on Agriculture, Dr. S. F. Tolmie, of British Columbit, president of the Canadian Holstein Breeders' Association, urged th eadoption of the accredited system as a means of dealing with the tuberculosis problem and of strengthening the position of Canadian breeders in extending their business both at home and abroad.

An accredited herd is one in which all of the animals in it are tested regularly for tuberculosis by government inspectors and all reactors eliminated. The accredited list is now an established factor in the breeding business of the United States. It owes its popularity to the abuses to which the tuberculin test has been subjected. It is now well known, for instance, that when an animal is purchased subject to the tuberculin test, the seller may render it immune by a previous injection of tuberculin. Safety requires a sixty-day retest and the quarantineing of the new purchase in the meantime is difficult and expensive. Where a herd is tested regularly by government inspectors however, there is little chance of dishonest practises and Dr. Tolmie is right in urging that the adoption of the acredited plan in Canada would be a factor in creating confidence on the part of buyers both at home and abroad. The problem of tuberculosis in pure bred herds has to be dealt with in some way at no distant date and this plan seems to be the best that has yet been suggested.

ALTERING PIGS

Boars may be castrated safely at 6 to 8 weeks old, but often it is not done until they are several months of age. An old boar, 18 months to two years, maybe operated on if he is designed for pork. After a few months' feeding the meat will then be free fro mthe strong flavor of boar or stag pork. An odd but easy way is to drive the old boar into a big barrel, quickly turn it up so the pig stands on his head, then with one man holding each hind leg the operation may be done easily and quickly. Bathe the wound with warm water containing sulpho-napthol or any good disinfectant. Where several animals are being cut, change the water so as to avoid possible contagion. Operate when the weather is warm. The older hte boar the better it is that he should have only light feeding for a day or two before or after castration.

HILLSIDE PETER PAN

Alex Hiene & Co., Campbellford, Ont., the well known Ayrshire breeders, have sold their champion bull, "Hillside Peter Pan," to George H. Stokes, of Tweed, Ont. Peter has been a champion winner at Toronto, Ottawa and London, and his progeny are promising.

"Hillside Peter Pan" was imported in dam and calved the property of C. P. Blanchard, Truro, N. S., who sold him to Alex Heine.

Glenrane Farm Holsteins!

We have a nice bunch of well grown Bull Calves for sale. These are well bred calves, fit to head any herd.

For particulars apply to

ROBERT C. HICKS
WEST BATHURST - - - N. B.

FOR SALE !

We have an exceptionally fine litter of 13 (living) of our large Berks for sale @ $12.00, four to 6 weeks old. Ready first of June.

Owing to scarcity of labor and we not being able to see eye to eye with certain Gov. officials, as to the type of Shorthorn to raise, we have decided to go out of the breeding and raising of pure bred live stock. Therefore our herd of 40 head of Shorthorns will be sold between now and fall for either breeding or for beef. Parties wishing to buy, please come and see them. We have seven very nice bulls, 10 months to two years.

L. M. ANDERSON, Sackville, N. B.

Milking Shorthorns for Sale

We are offering some choice young Shorthorn bulls of the milking strain, ages 3 months to 15 months.

Also a limited supply of heifers, one and two years of age.

For particulars apply to

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett
Upper Sackville, - - - N. B.

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,
AMHERST, - - - N. S.

PIG CLUB PIGS

South Tetagouche Boy Breeders Club is booking orders for Pure Bred Yorkshire pigs. They would like to have your order at once for some high class pigs, such as boys always raise. Write at once to

LINDSAY McINTOSH, Secretary,
R. R. No. 1 West Bathurst, N. B.

AYRSHIRE CATTLE. KARAKULE-ARABI SHEEP

We are offering two Ayrshire Bulls, ages 9 and 14 months. They are from big producing dams. Prices very moderate.

We are also offering Karakule-Arabi rams and ewes, producers of the finest Persian Lamb Fur.

For particulars and prices write

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3. She yields large quantities of most excellent milk, fit for all uses and especially suited for shipping purposes.
4. Heredity is so firmly established through her long lineage that she is able to perpetuate herself for the production of strong, healthy calves.
5. When for any reason her usefulness in the dairy is at an end, she fattens readily and makes excellent beef.

If you can't buy a herd, buy a heifer

Information from the Holstein-Friesian Association

President, Dr, S.F. Tolmie. M.P. Victoria, B.C.
Secretary, W A. Clemons St. George, Ont.

CLEARING SALE !

20 Rosecomb Brown Leghorn one year old hens ank cock at $1.50 each or $25 the lot, from Galloway and English best stock, good laying strain.

Eight White Grant Rabbits nine months old, A1 condition for breeding, best imported stock, $5 each..

Six weeks old White Grants, same strain, $1.50 each, $2.50 per pair, $3.50 for three, one buck and two does.

Black Siberian hares, six weeks, same prices. Also mature stock with young and one registered Black Buck.

WALTER G. STEVENS
Chatham - - New Brunswick

FOR SALE !

Eggs for Hatching and Live Stock

Get a setting of eggs from our O. A. C. Bred to lay Barred Rocks, Rhode Isalnd Red or White Wyandotte hens. We get eggs every day in the year. 10 cents per egg, $8.00 per hundred.

Extra well bred Holstein calves, both sex for sale.

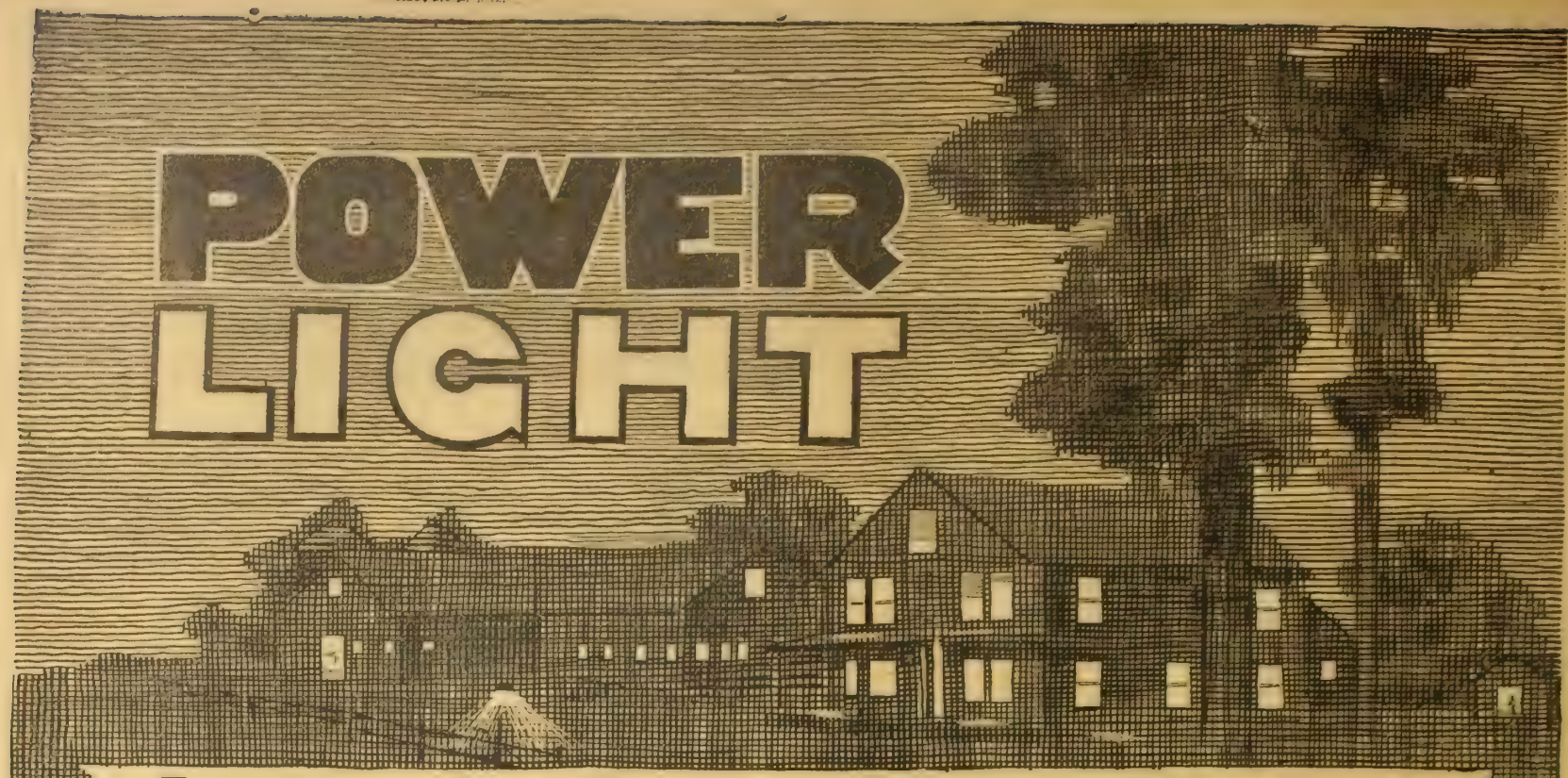
Booking orders for Chester White pigs.

N. W. Eveleigh
"TheOrchards" Sussex, N. B.

Yorkshire Pigs for Sale

We have a number o fregistered pigs for immediate delivery from 5 to 6 weeks old for $10 each. Further information by applying to

PERCY SARGENT,
Sec'y-Treasurer of Keswick Yorkshire Boy Pig Club
KESWICK RIDGE, - - N. B.



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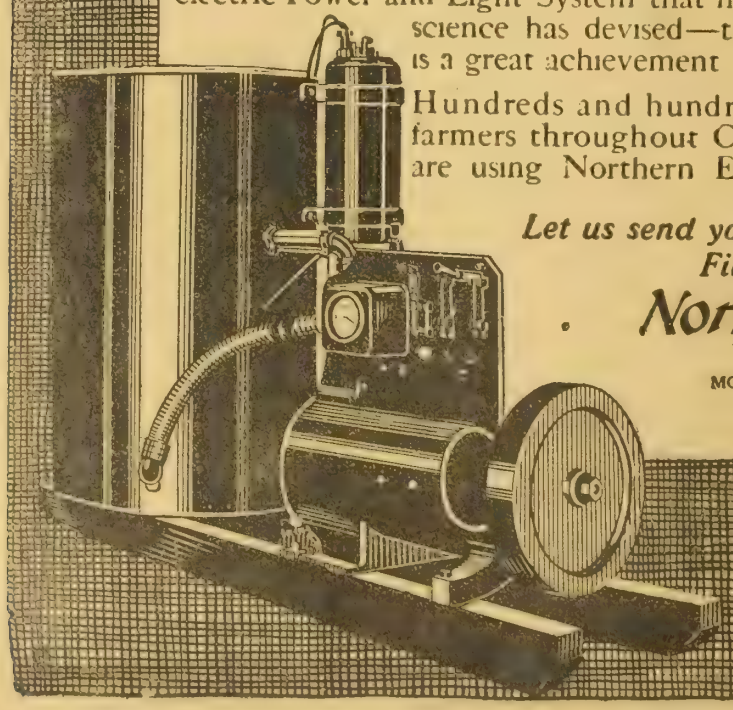

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Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 24. SUSSEX, NEW BRUNSWICK, JUNE 24, 1919. Number 18.

THE IDEAL DAIRY BARN

How to Build and Equip it

The two plans of barn roofs most commonly used are the gable and the gambrel, sometimes incorrectly called the "hip" roof.

The gambrel roof, has the advantage of giving more hay room under it, without building any higher at the plate or the ridge.

The rule generally followed in building the gambrel roof is to fix the height at half the width of the building. The first rafter will have a rise of one-third the width of the building and a run of one-sixth. The second rafter will have a run of one-third the width of the building, and a rise of one-sixth. In a 36-foot barn, the lower rafter would have a rise of 12 feet and a run of 6 feet. The second rafter would have a run of 12 feet and a rise of 6 feet.

It is only within recent years that the arrangements and construction of the dairy barn has been given the attention that its importance justifies. Farmers now relaize that it pays to have a comfortable barn on account of the large production of milk which follows. The growing demand for better sanitary conditions surrounding the milk supply, means that greater attention must be paid to the details of barn construction, if we are to get sanitary conditions without too much labor.

The style of barn to build will of course vary with the location, size climate and many other factors. However, it should be remembered that a barn once built is likely to remain there for a long time. It is therefore very important that it be built right, that is, convenient in arrangement, of proper proportions, easy to ventilate and suitable to the place. A barn can give character to a place; it may either have a pleasing effect, add value to the place and be a source of pride to the owner, or it may be an unsatisfactory eyesore to the farm and its surroundings. But it is just as easy to build one as the other if a little time spent on thought and planning at the right time. It does not cost any more to build a satisfactory one, and the comfort and pleasure besides the time saved in the life of the barn, are worthy of the most thoughtful planning. Whatever plan of barn is adopted, however, it should be placed with a view to convenience of access, and in keeping with other buildings or additions which may be erected in the course of time. Further, care should be taken to have the buliding located so as to permit of easy and thorough drainage.

Style of Barn

The first problem to be solved is what style of barn to build. Will the feed storage and cattle be under the same roof, in separate buildings or in separate building joined together. In other words; shall we build a basement barn, a storage barn and cattle shed or combine the two forming an L or T shaped barn. Generally speaking either the basement barn or the L or T shaped barn are the most popular in Central Canada. Both styles have their good and bad points but a great deal will depend upon the location and surroundings. If the barn is to be built on the side of a hill, the basement barn will give excellent satisfaction; if on the level perhaps the L or T shaped barn will be found better.

The advantages claimed for the bank barn are, economy of building, easy accessibility to feed, and reduction in cost of labor.

These are strong arguments but against them we can generally obtain more light and easier ventilation, less dust, and have the barn floor on the ground when using an L or T shaped barn. The latter is worthy of consideration, especially in threshing, as some difficulty is encountered in operating heavy threshers and engines on the elevated floor of the bank barn. After years of experience with bank barns the writer feels free to admit his preference for the L or T shaped barn, and would hesitate to build a bank barn unless a very favorable location was presented.

The interior arrangements of the stable may be much the same, regardless of the style of barn built. The cows should be arranged in two rows running lengthwise of the stable; whether they face the wall or a central feed passage is a matter of individual preference. At any rate, the stable should not be any wider than will accommodate two rows of cows, and allow ample room for feed passages and a good wide walk behind the cows. If any greater width is attempted great difficulty will be found in obtaining sufficient light and it will be harder to keep the stable cattle clean. By having the cows face a central feed alley they may be fed with less labor than if facing the outer walls but that is about the only advantage that can be claimed for that arrangement. By having the cows face the wall greater convenience is experienced in cleaning, milking, tying up the cows and keeping them clean. Feed is light and it is easier work to carry it along two rows than to carry the manure even if a little carrier is used. Handling manure is heavy work at best and should be made as convenient as a situation will permit. If a man contemplates installing a mechanical milker (and all dairymen will in time), he should, if at all possible, have his cows tail to tail, as he will find it much more convenient to operate the machine than if his cows stand facing inwards.

Good Lght Essential

The cow stable should not be more than 36 or 38 feet wide or difficulty will be found in obtaining sufficient light. The windows should be placed close together (the closer the better) on all sides of the building and should be of good size and extend up to the ceiling. There is nothing that will kill germs and keep cattle healthy and free from vermin like plenty of sunlight, and it is the cheapest disinfectant we can obtain.

Have Cement Floors

Cement makes the cheapest, cleanest and most lasting floor of any, does not wear out and if properly made, will not injure the cows in any way.

The feed passages should be 6 or 8 inches higher than the manger bottom. It is much easier and much quicker to feed down into a manger than to lift the feed overa wall no matter how low it may be. The average dairy man has no time to bother with such things. The gutter should be deep if the cows are to be kpet clean without too much labor. Here is one of the secrets of keeping cows clean—have the gutters deep enough that the cows will not step back and stand on them; 9 or 10 inches is not too deep if the walk behind can be lowered enough. The walk behind the cows should be 3 or 4 inches lower than the platform the cows stand on. This gives the cows a much better appearance as well as making it easier to clean out the gutters. The platform under the cows should be a few inches shorter at one end of the row so as to accommodate small cows.

Methods of Tying

There are two methods of tying that are generaly adopted today, the swinging stanchion and the chain tie. Either of these will give good satisfaction if properly installed. The chain tie gives the cow more freedom, greater ease in rising and if properly installed keeps her just as clean as the stanchion. The double chain system is much superior to the single chain in that it allows the removal of stall partitions and yet keeps the cow from interfering with her mate. The chain should be fastened to a pipe at each side of the stall, and the cow tied to the centre of this chain, either by another chain or a leather strap. This system is used almost exclusively on the Island of Jersey and is rapidly finding favor in America. It is cheap, light, and best of all, makes very litte lnoise.

Watering System

Dairy cows should be watered in the stable and have an abundant supply of water at al ltimes. The individual water-bowl system gives good satisfaction in warm stables and once installed is perhaps the handiest of all. The continuous trough and the watering manger both give good results and are used in some of the best stables.

Box Stalls

No dairy barn is complete without a few box stalls. The number will depend upon the kind of dairying followed. Whether purebred or grade cattle the handled. At any rate it should have a bull pen, one or two box stalls and a few calf pens. These should be constructed of piping is possible. Patent steel stable fittings are not expensive and give good results.

Ventilation

A stable may be fitted up with every convenience that money can buy but unless it has ventilation it is useless. It has been claimed by one of Canada's leading agriculturists that proper light and ventilation in the stable would produce more milk than five pounds of meal daily. If that is so a proper system of ventilations should soon pay for itself. What is the proper ventilation? That is just the trouble; we have no ideal system, neither have we a system, neither have we a system that works automatically and gives good results. They are all subject to varying conditions of wind, temperature and humidity and must be regulated by hand at al ltimes. Perhaps for Central Canada the Rutherford System gives better results than any other. That system admits cold air a tthe floor while the fould air is removed through ventilators starting at the ceiling and leading out through the roof.

The King system works well in a warmer climate. It removes the foul airs from the floor and receives the old air at the ceiling. Both these systems have their advantages but neither of them are perfect.

Finish of Walls and Ceiling

The walls and ceiling should have sufficient boarding and paper to keep out the cold but they should also have a tier of dressed lumber or v-joint on the inside of the studding and under the joints. This enables the men to keep the stable clean and also allows for white washing without any great amount of work.

Carriers and Trucks

Loading manure directly into a sleigh cart or spreader is the easiest and quickest way of cleaning stables but is not practical at all times of the year. The litter carrier is a great improvement over the old wheel barrow but even the best of them cause more or less trouble at times. Its greatest help is in the spring when it is too soft to use a horse and cart or even a wheel barrow. By using a swing pole a neat, compact silo can be made of the manure with very little extra effort.

For carying feed the large three-wheeled truck is in the writer's opinion the most satisfactory, easiest to

(Continued on page 960)

Central Stock Yards for the Maritime Provinces

Mr. Dan Johnson of the Stock Yards Division, Live Stock Branch, Ottawa, recently toured the Maritime Provinces to get first hand information re the Live Stock situation here, and look over probable sites for the erection of Central Stock yards.

For many years the farmers and stock breeders of New Brunswick, Prince Edward Island and Nova Scotia have been badly handicapped in the sale of their cattle, sheep and swine through the lack of stock yards facilities. Very few farmers ship their surplus stock direct to the stock yards at Montreal and Toronto. The shipping is customarily done by drovers and traders, and conseuentlqy our farmers have not heretofore realized the full value for their stock that they would had they shipped the stock themselves. On the other hand the long freight haul and consequent delays cause a large shrinkage in live stock, which will be eliminated when the central yards become operative.

The Maritime Stock Breeders' Association has been advocating the establishment of such yards for many years and now in response to their request and the unanimous support of the three local governments, the federal government is preparing to comply with their wishes.

Following the organization of the stock yards will probably be the erection of abattoirs and cold storage facilities.

With better marketing facilities in sight our Maritime farmers will be well advised to increase their live stock breeding herds and flocks to their maximum capacity.

On Mr. Johnson's return to Ottawa he reported the urgent necessity for the establishment of the stock yards in the very near future, and summing up all conditions for a site, recommended that they be located in Moncton, where there is a large consuming public and splendid railway facilities for rapid transit from and to all parts of the Maritime Provinces.

The federal Live Stock Branch requested the Maritime Stock Breeders Association, who have been the agitators for stock yards facilities, to choose the centre at which they would like the yards located. In compliance with this request, Mr. F. L. Fuller, the secretary of the Association, issued invitations to the prominent stock breeders of the three provinces to meet in Amherst, N. S., on June 16th. Besides a representative attendance of the stock men, representatives of the City Councils and Boards of Trade of Moncton, Sackville and Amherst were present to press the claims of their respective towns.

A. E. Trites, president of the Maritime Stock Breeders Association, presided. Among those who addressed the meeting were Dr. M. Cumming, Secretary for Agriculture, Nova Scotia; Hon. Murdo McKinnon, Minister for Agriculture, Prince Edward Island; E. P. Bradt, Deputy Minister for Agriculture, New Brunswick; C. H. Reid, President Amherst Board of Trade, Hon. C. W. Robinson, Acting Attorney General for New Brunswick; His Worship Mayor Rogers, Amherst; His Worship Mayor Black, Sackville; His Worship Mayor Price, Moncton; His Worship Mayor Beulley, Kensington; Mr. Fraser of the packing firm of Davis & Fraser; Mr. Crosby, President of the Prince Edward Island Stock Breeders' Association; Mr. Matthew Lodge, Moncton; Fred Magee, M.L.A., Port Elgin; Mr. Samuel Freeman, Amherst; F. L. Fuller, Secretary of the Maritime Stock Breeders' Association; C. C. Avard, Editor Sackville Tribune; Mr. Weldon, Canadian National Railway; R. E. Mutch, President Charlottetown Board of Trade; Hon. Josiah Wood, Ex-Governor of New Brunswick; Mr. A. N. Griffin, New Minas, N. S.; Mr. J. A. Marven, Moncton; Mr. H. J. Logan, Amherst; Mr. W. B. Fawcett and Mr. Chas. Fawcett, Sackville and Hon. Frank Sweeney, Moncton.

The need for the stock yards was apparent to all.

The Prince Edward Island delegates favored Sackville, whose claims was so ably presented by His Worship Mayor Black.

Some favored Amherst owing to the central location and good treatment accorded the Stock Breeders while there in connection with the Maritime Winter Fair.

Moncton's claims for central location, railway facilities and large consuming nd growing centre were advocated.

On motion the final choice was left in the hands of the Directors of the Maritime Stock Breeders' Association, who at a subsequent meeting voted in favor of Amherst, there being only two dissenting voices, viz., W. S. Harding and W. W. Hubbard.

The Federal Live Stock Division may not see eye to this decision, but it will make very little difference which one of the three towns is finally chosen, the main question at issue is to get the stock yards established and ready to do business as soon as possible.

Mr. Fraser of the firm of Davis & Fraser asked some pertinent questions, the majority of which clearly indicated that the great Diana of the Ephesians was about to be jeopardized. Had he remained in the audience long enough to get the answers to his questions, he would have hard some pertinent questions from the farmers' standpoint, ably propounded by Mr. W. B. Fawcett of Sackville and some of the P. E. Island Stock Breeders, who wished to know why live hogs were at times bringing as much per pound on the Toronto and Montreal stock yards as Mr. Fraser was paying per pound for dressed hogs, but Mr. Fraser did not wait. Had he waited he would have soon recognized that the farmers who comprise the Maritime Stock Breeders' Association are just as keen and bright as are the devotees of the packing business and are going to govern themselves accordingly. Farmers will not stand bluffing any longer.

Will Unionism Spread to Farm ?

If the spirit of labor unrest, which has all but paralyzed .industry .and commerce in the Dominion for the time being should spread to farm laborers how would the situation bt met by farmers, or on what basis could a settlement most likely be effected? The mere mention of this subject may probably be greeted with a smile by a good many farmers, who have been in the market for hired help for a year or two without results, and are now almost ready to believe that the hired man has completely disappeared, but no one at all familiar with both farm and city conditions, would attempt to deny that the present distribution of labor is all out of joint with the needs of the moment. The muster roll of unemployed in the big centres of population seems to be steadily on the increase, while the farms throughout the country are badly handicapped on account of labor shortage and all sorts of schemes are being adopted to keep things moving. But the story of the past has shown that situations such as exist at present gradually right themselves; the tide flows from country to city until a certain point is reached when reaction sets in, and the procession turns back in the opposite direction. When this movement begins—and there is every evidence that it cannot be much longer delayed— and the tide which has taken the farm workers to the factory brings them back once more to their places on the farms, with advanced ideas on trades unionism, 44-hour weeks, etc., then the farm labor question will take on a different appearance, and the farmer may have to deal with his help on the principle of collective bargaining. This may sound like a far fetched idea but nevertheless a farm laborers' union has been in operation for sometime in Great Britain, and what has happened in one country is at least a possibility in another.

Why Labour Asks 8-Hour Day

One of the outstanding demands in practically all of the recent strikes has been for a 44-hour week. This means nothing more or less than an eight-hour day with half a day off on Saturday. Could such a time schedule be applied to farm operations? If such a thing as a farm workers' union came into being in Canada would an attempt be made for any such concession on the part of the union members? Perhaps if we could get at the reason why the industrial labor unions involved in the present strike demand an eight-hour day, it might throw some light on the question. The labor men—or at least some of them—assert that the shortening of the day to eight hours is an attempt to relieve unemployment and to make the available supply of work go around. If this really is the bed-rock reason for all the hue and cry that has been raised for the shorter day, then even though farm workers should decide on a union, many a wet day, and many a dry one, will pass before there will be any necessity of resorting to such a measure as this to provide work for all available hands. Just at present farming comes much nearer being a 24-hour-a-day game than a 44-hour-a week proposition, and there is room for a great many more hands without any danger of congestion. .

A 44-Hour Farm Week?

The question naturally arises if a 44-hour week would be a possibility under any ordinary set of condition. Decidedly no. To attempt to carry out such a schedule where mixed farming is practised, or where dairying is carried on would be sheer nonsense. Even on farms whose owners have not the reputation of being early risers, and wheer the amount of help is normal, work starts at 6 a. m., and is seldom if ever over before 6.30 p.m. Deducting half an hour for the morning meal, an hour for dinner and an hour for the evening meal leaves an actual working day of ten hours and a half. This repeated six days per week gives a total of 63 hours—practically one-third longer than the week organized labor is endeavoring to bring about.

Then too the fact that farm operations are very largely dependent upon weather conditions, is another factor which makes it still more difficult to adhere strictly to any set number of hours as a day's work. At certain season's of the year, which scarcely need be enumerated here, a great deal of work has to be put through in a short time, while there are other periods which are correspondingly slack. But the suggestion may come, "Why not pay an excess wage for overtime work during the seasons when there is a distinct advantage in working long hours to hurry things along?" Probably this could be arranged, but some different scheme from the present one for gauging the remuneration of farm workers would have to be adopted.

How British Farmers Do It

In Britain not only the farm servants, but the farmers as well have their unions, and but little friction between the two sets of organizations is reported. The standard day consists of nine hours in the field, plus whatever additional time is needed by the worker to tend his team, or to do whatever share of the stable work may be allotted to him. Workers are entitled to ten legal holidays during the year, and Saturday afternoons off in their turn. Provision is made for the payment of overtime wages during the haying and harvesting season. Special stress is laid on the provision of proper housing accommodations for married farm workers; indeed, so important is this feature that the Government has taken the matter up, and if legislation has not already been enacted compelling the landlords to provide suitable housing accommodation for their men, it is on the way.

A discussion of the possibility of trades unionism extending to include farm labor, and the probable course of events if such happens, may seem premature, but developments in the labor world have been coming forward so quickly of late that a person scarcely knows what to class as possible and what as impossible. Two weeks ago the average man would have classed a general strike big enough to tie up a whole city as absolutely out of the question in Canada. But now we are witnessing the spectacle of simultaneous general strikes in the cities of Western Canada, with the immediate possibility of the movement affecting all the principal cities of the Dominion. To be forewarned is to be forearmed, and although the matter of trades unionism has not as yet actually reached the farmer's doorstep, it would seem to be the part of wisdom, judging from the present trend of events, for him to at least give the matter some thought, so as not to be caught napping should the unexpected happen.—Ottawa Farm Journal.

A good test for determining when clover or alfalfa hay is ready for the mow is to twist a few of the stalks, and if no moisture can be squeezed out, it has cured sufficiently to keep in storage without moulding, and is in the right condton to prevent loss of leaves during handling.

Nothing looks better than smooth, clean carpet of green grass covering the yard and surrounding the home.

Under-drainage Insures Crops

The Experiences of two Large Farmers

"Farming is becoming more difficult every year," said an exasperated and overworked farmer to a representative of a Farm Journal the other day. Asked what the trouble was, he could not say, although he pointed out that help was scarce and wages high. Last fall was so wet that little plowing had been done upon his farm, and this spring the continued rains had delayed seeding several weeks, with the result that the fields weer rapidly becoming overrun with grass and weeds. Moreover the roads were almost impassable in his district and it was a daily occurrence to be called upon to help some unfortunate traveller out of a mud hole. The country church in this particular district had been closed because the people could not go through the mud! He had to stop shipping his milk to the city for the same reason, and his wife was at her wits' end to find dishes in which to store the large quantities of butter that had to be made at home. This man operates a dairy farm, and his Holstein cows produce several cans of milk daily. What could he do? Truly it was an extreme and pitiful case, but no assistance could be given. Yet this man believed in the farm. He would not forsake the land, and said he was anxious to buy another farm for his son, who was rapidly approaching manhood. He has two sons who are going to be farmers. They are deeply interested in the breeding of pure-bred cattle and horses, and will be heard from later, for such indomitable perseverance cannot go unheeded.

In discussing this very same matter with another farmer in an adjoining county it was surprising to find how cheerful he appeared to be. He had to travel muddy roads and frankly admitted that he could not remember seeing them as bad, but fortunately he had a gravel road from his place to the station, which was passable, although far from good. But that was not all. He had most of his plowing done last fall, and only a few acres of corn stubble remained to be turned over this spring. He had about half his grain crop sown and it was growing fine. His farm was situated not many miles from the first mentioned reader and if anything it was lower and contained less rolling land.

Why the difference? The answer is simple. A number of years ago the latter became convinced to the benefit of under-drainage and has been laying tile every year until the war broke out, when he had to quit on account of the labor situation. The wet weather of last fall and this spring have not dampened his optimism on drainage, but on the other hand has greatly accentuated it, and he is planning to continue the work. Last fall, when it was impossible to plow the undrained land, a tractor was turning over several acres a day over the tiled area. It was the same this spring' The drained land was dry several days before the undrained and sown before the rains started. True, he felt the backwardness of the season a great deal, but not as much as the first mentioned farmer. Why should he? He was better fortified against unfavorable weather conditions. This man had sons growing up also and they were not longing for the time to get away from the farm. No. The good stock and progressive farming methods employed on this farm meant too much to them. They will "carry on" and there is little fear but they will make good use of their rich inheritance; a good farm and an appreciation of good farming methods.

Of course the two cases cited may represent rather extreme instances, but they serve to illustrate splendidly the value, preparedness and fortification against an emergency. The day of "slip-shod" farming methods is over; the day of carelessness is gone, and in its place must come an age of preparation and watchfulness to guard against the unexpected which is the rule rather than the exception in this tumultuous era. Strikes are the order of the day, some are justified, many are not, but if the farmers would strike a blow for better drainage, and carry it out, there would be fewer discontented farmers throughout the country. The unfavorable weather of last fall and again this spring should leave no doubt in the minds of all fair-minded men as to the value of such work. The drained land was fall plowed and was sown early in May and in some cases in April. The crops are most promising at present, while the undrained land is flooded with water. What will happen? If it dries up quickly a fair crop may be expected, but with all the land left unplowed last fall the prospects for a bumper harvest are not very bright.

In view of this there should be no hesitation on the part of farmers as to the value of under drainage. If the wet weather continues much longer the harvest will be greatly reduced except upon well drained farms, and such a loss even for one year would go a long way towards paying for a system of tile drains. Furthermore it would give the farmer a greater guarantee or assurance of a crop. That might not have been so bad in years gone by, when a large part of the crop grown was sold off the farm, and the only loss suffered a shortage in cash revenue, but not so today. Most farmers in Canada aim to carry all the live stock they can feed, and they depend upon a crop every year. If it fails they are in a serious situation. They have the stock on hand, no feed, and what is still worse no money to buy it. The situation is too serious to take the risk, but the remedy is not hard to find. Although it would be foolish to advicate drainage as a cure for all ills yet it will go a long way towards insuring a crop year after year which in the end is what is needed. Prosperity in farming does not come by spurts but by steady, faithful work year after year, and paying careful attention to small details. There is no better time to decide upon better drainage than right now, and it does not require a complete survey and taking of levels to tell the farmer what fields require it.—O. V. J.

The Ravages of Tuberculosis

Tuberculosis is the oldest disease known to science, and is also the most common. It is particularly the disease of the white man, and prevails most virulent in all temperate climes. No less than one-seventh of all mankind perish from one or other form of it, while it accounts for one-third of all deaths during the working age. Most of the animals that are associated with man on the farm are liable to take it. It affects cattle of all breeds, but the percentage of mortality in various breeds cannot be arrived at. Pigs, dogs, cats, poultry, and wild animals in captivity are susceptible. It is plainly evdent that captivity and domestication is the chief medium of its rampant origin. The Ottawa Farm Journal believes had it been as common among animals in their wild state many of the species would have been extinct long ago. The modern efforts of treating domestic animals for the single purpose of production has lost sight of the natural methods of health, and tuberculosis has consequently taken a firm hold.

Predisposing Causes

Although the actual cause is the microbe, there are many predisposing causes, conditions which render the healthy body open to an attack. **The most fertile predisposing cause is domestication. Animals at large, living in the open, year in, year out, are least liable to be affected. Animals which are badly housed, retained in confined space, without sufficient ventilation and air space, and under bad sanitary conditions, are most commonly affected.** To this must be added all causes which weaken the constitution, such as early and frequent breeding, heavy milking, forced feeding, and keeping the stables at a high temperature. The opposite conditions have a similar effect. These are insufficient and innutritious foods, previous existing disease which has lowered the constituton, pneumona, pleurisy, etc. In-and-inbreeding and line breeding also play a part if such breeding is done with animals having the hereditary taint of tuberculosis. Another very important factor is hereditary predisposition which accounts for the disease running in certain families and certain breeds of cattle. The hereditary predisposition, however, operates in the case of most diseases. One might state that children or animals born of diseased parents are, as a rule, more liable to that particular disease than are those born of healthy parents.

How the Disease Enters the System

How does the microbe gain entrance to the system? Infection is mostly due to direct contact or co-habitation. It may occur through a contaminated atmosphere, in which case the germs are haled directly into the lungs, but it is mostly by means of secretions, such as saliva and mucous from the mouth, or by tuberculosis material coughed up from the lung of an infected animal. Such material infects stables, stalls, and food. The calf is often infected by the milk from a tubercular udder, and human beings in the same way. When the organism is eaten it gets absorbed from the intestines, enters the lymphatic system, and is carried and deposited in various parts of the system. In young animals it generally affects the glands along the intestines in the first instance.

Every organ in the body can be affected with the exception of the muscles, and a varied set of symptoms is set up according to whatever structures are attacked.

Symptoms of the Disease

In young cattle the glands of the throat are often attacked, producing the condition known as a "snorer," that is the breathing is accompanied by a snoring sound. It may only be slight, but if it is heard at all, it is to be suspected that the microbe has entered the system. The spinal cord is also a common seat, while many subscribers taking the Maritime Farmer, as indicated in letters addressed to the information department of this paper, find symptoms like paralysis of the fore or more commonly, the hind limbs, due to tuberculosis of the brain. In tuberculosis of the udder, which occurs in about two per cent, of all tuberculous cows there is generally a very slowly developing swelling of one or both hind quarters of the udder. Unlike an ordinary weed, there is no pain nor tenderness in the swelling, and the overlying skin can be pinched up from the gland below. The swelling has generally well defined though irregular edges, and at times one may find numerous individual nodules. The milk for a considerable time remains unaltered in quantity or appearance. This mitigates against early diagnosis, and the milk may be infective to human beings and calves for a time before the diseased gland is diagnosed.

Preventative Measures.

As far as preventative measures are concerned, the broad principles of hygiene and disinfection must be observed. Tuberculosis animals should be kept separate from healthy ones, and all animals which cough, and are in any way suspicious, should be isolated, and if not of particular importance from the breeding point of view, fed for the butcher as early as possible. All unthrifty and emaciated animals should be destroyed.

The most approved system of eradication is that introduced by Prof. Bang, known as the Bang system. This scheme is based on the fact that contagion plays a principal part in the spread of bovine tuberculosis, that the calves of tuberculous cows are generally born healthy, but are generally contaminated with material coughed up from the lung of the infected dam.

A Royal Commission was appointed in Britain to inquire into the relationship between human and bovine tuberculosis, and after a period of work, comprising the ten years previous to the war, they distinctly proved that the two diseases were one and the same, and that human beings are often infected by drinking tuberculous milk. They also showed that 50 per cent. of the children that died from abdominal tuberculosis were directly infected from cows' milk.

The danger is so great from infection that every energy by Government and people should be directed towards its eradication, and for this end every available channel of information regarding its history and methods of infection and preventon, should be made sufficiently clear to every citizen of the realm.

MILLFEED AND ROLLED OATS

Montreal, June 23—A good steady trade continues to be done in most lines of millfeed and the market on the whole is fairly active, with a firm undertone. Sales of car lots of bran were made at $42, and shorts at $44 per ton, including bags, ex-track, and smaller quantities of bran in mixed cars sold at $43 to $43.50, shorts at $44.50 to $46, feed cornmeal at $70 pure barley meal and mixed grain moullie at $62 to $64, mixed moullie at $56 to $58, dairy feed at $48, and oat middlings at $44 per ton, including bags, delivered to the trade. The trade in rolled oats is quiet and prices are unchanged, with broken lots of standard grades quoted at $4.10 to $4.25 per bag of 90 lbs., and Golden cornmeal at $5.25 to $5.35 per bag, delivered to the trade.

THE MARITIME FARMER

And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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DATES OF ISSUE.

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August	5—26
September (Exhibition Reports)	9—30
October	14—28
November	11—25
December (Xmas)	9—23

JUNE 24, 1919

AN AID IN LIVE STOCK BREEDING

For a century now the parallel line to the Agricultural Fair has been agricultural progress. The fair is now recognized as the most important agency in stock improvement. As an advertising medium it has its advantages to individual breeders by affording the opportunity of making acquaintances and selling stock. But these are minor matters to formulation of ideals and the elevating of standards that fairs have given inspiration to, ever since their inception. The history of the national and local fairs in all countries has proved their value in stock improvement, by answering the question that mentally arises in every aspirant to the cult of live stock breeding on the farm, "How is a good animal or sire to be known?" Without the show ring as a guide in the selection of sires, breeders would grope in the dark and progress would be slow.

The times require more constructive breeders and fewer speculators and other parasites of the pure bred live stock industry. Higher costs of feeds and increased necessity for their economical use require that inferior live stock be scrapped as rapidly as efficient stock can be produced to supplant them.

Booming any family or bloodline into notoriety by other methods than those of sheer merit, has done a lot of damage to the industry. Many attempts have succeeded in ultimately lowering the standard and the values and therefore the popularity of the breed. Booms that explode always willl react against the favor or popularity of the family or breed experimented on. They are generally built up on bloodlines that have been unskilfully handled, and generally die the natural death that comes to all operations in breeding similarly conducted.

But the fairs take entirely a different tack and sail for a different port. They have all along made utility and its highest ideals their starting and finishing points. The responsibility of the fair and its judges is great. If errors occur in the type set or in awards made much damage may be done. But they are unusually free from error or partiality and therefore do untold good.

In no other class of showing have showyard verdicts dominated breeding more than with the Clydesdale. Excellent and hige devedopment of type, character and uniformity in the modern Clydesdale are very largely due to the careful judging practiced in Scottish shows, and the acceptance of the showing verdicts as law.

Winning exhibitors and winning animals are always greatly benefited, but he who takes a lesson from defeat, corrects his type, changes his sire or improves his methods of feeding and fitting, is thrice blessed, and will return in time a winner. Fairs benefit those and the young breeders most of all.

HAVE CLEAN-UP ABOUT THE BARN

Any farmer might take a few pointers from his wife about cleaning up around the barn. The average farm barn is not a model of neatness. Refuse of all kinds is stored away in the corners, old hay and chaff litter up the floors and without a doubt there is an accumulation of manure in the horse and cow stalls, or else it is piled up just outside the door.

The housewife is in torment every spring and fall until she has her house gone over and given a general cleaning from the attic to cellar. She looks upon this work as a sacred duty that must be performed before she can face her neighbors, but the farmers are few who follow any kind of a cleaning programme about the barn. The manure may be hauled out in order to keep the horses from having to stand on their heads to get into the feed mangers, but anything like a general clean-up is unusual.

If farmers would make it a regular job to clean the premises once or twice a year, infectious diseases among farm animals could be more easily controlled and the mortality from calf scours, hog cholera, blackleg, contagious abortion and other disease might be reduced to a minimum. And it would make the work round the barn during the rest of the year much more pleasant.

BY ITS HORSES A COMMUNITY IS KNOWN

Where is the vast difference between $15 and $25 stud fee? Mostly in the imagination, for the stud fee is a minor part of the trouble and expense. There is the loss of part of the usefulness of the mare, and the cost of raising the colt, and $10 will bear a relation to the whole of less than 5 per cent. Often there will be good and poor horses etanding at $15, and for $2 or $3 more mares can be sent to good horses. This would prove a remunerative day's work whether the owner did it or hired it.

Breeding to poor, unsound stallions is to give direct encouragement to their owners, and to prevent good horses from coming to the neighborhood. There are all grades of stallioners, and if mare owners are indifferent how can they expect to have good stallions? The class of stallions standing in a district is a direct reflection of the horse knowledge of the community. If the stallions are bad it is a foregone conclusion that the farmers know little of horses, and will have poor stock.

A TOAST TO THE FARMER

Here's health to the farmer, the man of the hour, the man who feeds all the world by his power! His work in the Garden of Eden began; 'tis the God given occupation of man. Independence is one of his blessings most rare; no master has he—he's free as the air. In the early morn to his work he's away, thus gaining the freshness and beauty of day. His ears are attuned to the song of the birds, which lighten his toil as his loins he girds for the work in the field, while the health-giving breeze sings its sweet catin song in the tops of the trees.

The spring with its fragrance of blossoming flowers, the summer with ripening grain and cool showers, the autumn with fruits and foilage bright, and lastly the winter with all its delight—each season to him great joy does impart, for he lives the nearest to Nature's heart; and he looks up from Nature to Nature's great God, learning lessons of faith while turning the sod, and happy is he for he knoweth full sure, that "seed time and harvest shall ever endure."

He tills his broad fields with intelligent skill; with his heart in the labor he works with a will. He spends not his evenings in ways that are strange, but takes wife and children and goes to the grange. Thus in ways "safe and safe sane" his time is well spent. Though he may not have wealth he is quite well content, for he never need look to the future with dread, as he who feeds others is sure of his bread. Of true happiness he never has dearth, so a health to the farmer, the salt of the earth!—Alice E. Wilbur.

UNDER-DRAINAGE PAYS

There is no one thing today that will increase the productiveness, and assist in the development of agriculture in Canada, more than under-drainage. The less humus in the soil the more need of under-draining, because the soil becomes more compact, and retains the water that is not needed for growing plants. The air cannot get into the soil unless the water is out and it is absolutely necessary that plant roots have air.

The season for work is much lengthened by under-draining, for under-drained soil can be worked much earlier in the Spring and much sooner after a heavy rain. The field will be found more even and there will be no wet places, while other aprts are dry. An under-drained farm becomes more fertile every year, as more of the fertility contained in the subsoil is made available.

There is no better investment for money than in under-darinage; it will pay a larger rate of interest than any other investment made on the farm.

In a future issue we will give the experience of some Maritime Farmers with under-draining.

* * *

You cannot hope to make sales of live stock —or anything else for that matter—if you do not get the news of what you have to sell into the hands of the men who are most likely to be in need of them. We can do this for you through the medium of the Farmer advertising columns. How about giving them a trial?

* * *

It is a fine thing to have a farm named. It gives distinction to the place which tends to encourage a desire for community betterment and country life.

* * *

The boy with a calf, sheep or pig of his own today is the livestock amn of tomorrow—provided his father does not beat him out of the money the animal brings.

* * *

Pride never can learn fast or well. The way to knowledge and wisdom is through one's willingness to admit his ignorance.

CANADA'S TRADE OVERSEAS IN LIVE STOCK AND MEAT PRODUCTS

The Dominion Department of Agriculture has launched a vigorous campaign to secure for Canada a fair share of the trade developing in Great Britain and continental Europe for live stock and meat products and with this end in view Prof. H. S. Arkell, Live Stock Commissioner, has left again for overseas where he will spend probably several months on this mission. In this connection the following marketing policy of the Government was discussed and approved of at a meeting of representatives of the various live stock breeders' associations and the Provincial Departments of Agriculture.

1.—The Live Stock Commissioner, in connection with his mission overseas, has meen authorized by the Minister to negotiate with representatives of foreign Governments or through such other channels as may offer, with the view of facilitating the sale of our horses, cattle and other live stock and live stock products.

2.—He has been authorized to invite responsible parties from Canada to join him overseas, in order that business contracts may be immediately concluded.

3.—The Department of Agriculture through the Live Stock Branch, accepts the responsibility of recoginzing officially any companies proposing to do overseas business, the application of any company for such recognition to be approved by a committee consisting of the President of the Western Canada Live Stock Union, President of the Eastern Canada Live Stock Union, the Chairman of the Record Board, and the Live Stock Commissioner, or his accredited representative. The committee will give its approval after investigation of the company's busines integrity, financial standing and practical experience in the handling of live stock. It is to be understood that any company receiving such approval shall be entitled to recognition by the Department and to a share in any contract resulting from negotiations with purchasers overseas.

4.—Exporters desiring to obtain recognition by the Department for the above purpose not already incorporated shall be required to form themselves into companies and to secure incorporation under a Dominion or Provincial charter, in accordance with certain conditions as regards organization, which will be furnished on application.

5.—Any orders offered to Canada through negotiations with overseas purchasers shall be allocated for final contract to recognized companies by the committee named above.

6.—In the case of such orders the department will provide rigid inspection of all live stock exported by approved companies and the submission of their purchases to such inspection shall be imposed as a condition of the transaction.

7.—It is understood that the services of the Canadian Trade Mission in London will be available to facilitate financial arrangements. It is expected that it will be possivle to secure acceptance of stock by overseas purchasers f.o.b. Canadian ports and an effort will be made, so far as possible, to induce all overseas purchasers to send representatives to Canada with the authority to conclude contracts and advise with contracting parties in this country as regards the exact class of stock required and personally take acceptance of it at Canadian Atlantic ports.

8.—It is to be understood that the Department of Agriculture accept no commercial responsibility in connectoin with any contracts which may be concluded, but that it is arranging to furnish every assistance possible to approved Canadian companies in the securing of contracts.

9.—It is to be clearly understood that the foregoing does not interfere in any way with private trading.

The Situation Abroad

In opening the conference Prof. Arkell gave a review of his observations abroad in aMrch and April when he visited Great Britain and the continent, dealing rather minutely with each phase of the live stock industry, and incidentally pointing out that Canada had opportunities now in the development of trade which should be taken advantage of and necessarily would have to be provided if the country was going to go through its period of reconstruction with any marked degree of success both as regards finance and confidence.

Commencing with eggs and poultry he said there were 187,000,000 fewer fowl in Europe now than in 1913. Russia had been swept clean, France and Belgium reduced to the minimum, Denmark and Holland were shipping to Germany rather than the Allied countries, so that it was practically up to Canada and the States to tide over the situation. So far as American competition was concerned, he did not feel any need for alarm. Our eggs were being produced in a cooler climate, had a better body and texture, and were reaching the British consumer in better shape, and were therefore being given the preferenc. The development of this trade would mean an important revenue to the country.

Touching on bacon, he assured the meetinig that Canadian farmers could face the future with every degree of confidence. Statistics showed that the swine population of Denmark had been reduced from two and a half million to seven hundred thousand hogs, and moreover that due to force of circumstances or otherwise the export trade of Denmark and Holland was going to enemy countries. He warned those present that in his opinion it would be a mistake to try to develop a bacon trade in Europe, but that it would be much better to stick to the United Kingdom. The European market demanded a heavier, fatter hog than Canada had been producing, and for this reason the United States was in a better position to cater to that trade. He believed that Canada could now capture the bacon trade in England formerly held by Denmark, for the American bacon was not siutable for the British market—in fact it was held in disfavor there on account of being too fat and dry.

As regards horses the outlook was promising, there being two outlets, one in the United Kingdom and the other on the continent. In England there seemed to be an over supply of inferior horses but high class horses for agricultural use and transport service were scarce. The oportunity available to Canada to meet the requirements of the English market was all that could be desired but any stock sent over had to be right in every way. The English buyer demanded a horse 5 to 7 years old, in good condition, well mannered and broken 1,400 up to 2,000 pounds in weight, well bred, good action, clean limbs, absolutely sound and carrying a good middle. In France, Italy, Belgium, Poland, and the other Balkan countries horses were also in demand, a horse of much lighter weight meeting the requirements of most of these countries. The development of this trade abroad would tend to place the horse industry of Canada on a profitable basis again.

Coming to the beef cattle situation he felt that Canada had more to feel alarmed about than any other branch of the live stock industry. Both as regards price and quality Canadian producers had to face strong competition from Australian and the Argentine. During the war and since the Canadian packer had been introducing beef in the British market at 25c to 27c per pound, whereas beef much haevier and of much better quality could be purchased in the other two countries mentioned at around 11½c f.o.b. their ports. In view of this situation present prices could not be expected to continue in Canada and unless new channels opened up prices here would have to go down to a level with those prevailing in countries to the south where the cost of production was much lower than here. As regards Europe the outlook for a satisfactory market for beef was very uncertain on account of the policy bein gadopted to conserve as much as possible and the question of finances.

However one ray of hope in the United Kingdom was to be found in the fact that with the higher wages being paid labor it was only reasonable to expect that this class of people would become greater consumers of meat than heretofore and if this happened there might develop in time a demand for beef of the weight being bred, fed and marketed in Canada. Summing up the beef situation, Prof. Arkell said that sooner or later Canada might find herself in a difficult position to find a market for her beef catle unless she could develop a special trade for beef of light weight. Of course Great Britain needed more cattle and he felt that it might be worth Canada's effort to try and secure the removal of the embargo which was being favored by labor. Ireland was now finishing cattle rather than shipping them as stores and for this reason Scotch feeders were a little alarmed as to where they were going to get their stores.

The outlet for dairy cattle would be mostly in the direction of cows in milk and heifers bred. The price of wool would likely remain high and Great Britain would require lambs in the fall. There was a distinct shortage of butter and the price in Canada was fully justified as a result of the world situation. So far as cheese was concerned he felt that while there was a greater supply of it than happened to be in the case of butter, the demand was continuing to exist and that our prospects were as good in the open market as at a stated price.

Another Way Suggested

The whole matter being thrown open for discussion the feeling at first seemed to be that the Dominion Government should undertake the task of financing the proposition so as to insure the entire safeguarding of the farmer and seller here in Canada, ending finally in the following resolution:

"That we the representatives of the live stock production interests of Canada here assembled at the call of the Federal Minister of Agriculture, respectfully recommend to the said Minister that the Live Stock Branch of this department should endeavor to arrange, at the earlies possible date, for a definite sale of live stock (horses cattle or sheep, or any of these animals) to such Europeon countries as mae be in the markyt for the same, and with whom credits have been arranged.

"That the provincial departments of agriculture, co-operating with the live stock associations, arrange for the assembling of this stock at convenient marketing points within the respect-ve provinces, and that the Dominion Government make arrangements for the financing of such purchases.

"In the eyent of the Federal Department of Agriculture finding it impossible to bring European buyers to Canada to inspect and purchase such live stock, it is further recommended that the Federal Government arrange for the purchase and delivery to European markets of a substantial shipment of horses, cattle, sheep or any of these animals as a demonstration to these countriese of the classes of live stock available."

Later the above resolution was presented to the Acting Premier, Sir Thomas White, and the Minister of Agriculture, who pointed out that the Dominion Government was not in a position to and would not under any circumstances, undertake the financing of sending stock abroad, although it was prepared to advance credit to certain countries, Belgium having already been given credit to the extent of twenty-five million dollars.

The policy advocated by the meeting having failed to meet with the approval of the Government, the governmental offer was then taken up again and with a few minor changes, adopted, as indicated in the fore part of this article.

Want Embargo Off

Other resolutions passed by the meeting were:

"That we, the representatives of the live stock production interests of Canada, here assembled at the call of the Federal Minister of Agriculture, resolve, that in view of the importance of the cattle breeding industry of Canada, the embargo now existing against the importation of Canadian live stock into the United Kingdom should be removed, provided that a satisfactory guarantee be given to the British Board of Agriculture that Canadian cattle only will be exported.

"That the Department of Agriculture of the different provinces be asked to make a survey of their respective provinces for the purpose of ascertaining the numbers and classes of horses, cattle and sheep suitable and available for the proposed export trade.

"That this conference recommends to the Federal Miniister of Agriculture that representatives of the horse and catlle industry, one from western Canada and one from eastern Canada, be sent overseas to assist the Live Stock Commissioner in his negoiations for trade in Great Britain and Europe."

NEW RULES GOVERN EVERY LIVE STOCK YARD

On the recommendation of Hon. T. A. Crerar, Minister of Agriculture, new regulations relative to the operions of stockyards in Canada have been authorized by order-in-council. The regulations cover construction and equipment, operation and maintenance of stockyards, and their chief purpose is to provide improved connection with the handling of stock.

The regulations governing construction and equipment provide that every stockyard must be so equipped as to afford adequate accommodation for the transaction of business with safety and despatch. No subsequent alteration or addition shall be made to any stock yard until the approval of the minister has been obtained. Ample provision for the proper handling and feeding of live stock must be made, including a supply of running water.

Operation and maintenance regulations provide that live stock must be handled in such a way as to prevent injury or bruising. The proprietor shall see that no live stock suffers from want of feed or water while in his charge. In the case of live stock to be fed for maintenance only, the proprietor shall supply the amount of feed prescribed by the Live Stock Commissioner. Charges for feed and supplies for each calendar month shall be determined by adding to the wholesale market price for the preceding month a percentage plus a fixed charge for handling. The proprietor shall file with the minister not later than the tenth day of each month a statement of the average wholesale market price of feed and supplies during the preceding calendar month and a statement of the charges in force during the current month, suported by documentary evidence.

It is provided that acocmmodation shall always be given in preference to stock for storage. There shall be kept a register of all sales of live stock in such form as the minister may prescribe, and this shall be available for inspection by the public.

HORTICULTURE.

EFFECTS OF PRUNING ON THE TREE

The results that follow any kind of pruning are very complicated. Thus, a pruning given during winter or winter or spring may have the effect of reducing the yield next summer, but of increasing it the second after the pruning is done; or it may have the effect of reducing the yield during several years, but still be profitable because it prolongs the life of the tree. In pruning to shape the tree, the effect of a system of training adopted when the tree is young may not be known in a climate like that of New York for fifty years, even if the same system is followed during the life of the tree. Sor this reason, our knowledge concerning the best methods of pruning is very meager indeed. Thus, if we are to learn by experimenting what are the best methods of pruning, those experiments must extend through a very large proportion of the life of the tree, with the apple certainly thirty to fifty years in training experiments. None have been conducted through so long a period. For the same reason the experience of growers gives less conclusive guidance. In this locality would consider such practice, where the effects are more quickly seen.

On acocunt of this chaotic state of our knowledge, even what we do know with certainty about pruning does not seem to be made use of very generally in practice. It would seem, then, that a discussion of the subject of pruning in which what we know is carefully separated from what we must do without adequate knowledge as to what is the best method, would be well worth while.

Concerning the immediate effects of cutting away parts of the tree top in pruning, we can speak with more certainty than concerning the effect of any particular shape on the bearing of the tree. Thus, it is common knowledge among people who have had experience in pruning that cutting away part of the top of a tree during the dormant season increases the vigor and growth during the following season of adjacent twigs that are left. The new shoots will be longer, the canes larger, and growth will continue later in the season. It is also true that this new growth is generally stockier.

In spite of this increase in vigor, the effect of pruning is to reduce the total amount of growth. Although the growth following pruning is more vigorous there are fewer growing points. Not only is the new growth insufficient to replace what has been removed, but in actual fact less growth is made than on the unpruned tree. In other words, in case of two trees, one rather severely pruned and the other unpruned, the unpruned tree will be larger than the pruned tree by more than the amount of growth that has been removed from the pruned tree. The explanation of this is the fact that the pruning, by removing buds that would open into leaves, reduces the foliage. In our own pruning experiments, we have found a marked reduction in the total leaf surface of those trees that have been pruned with any degree of severity. When it is remembered that the material from which the entire tissue of the tree is built is elaborated in the foliage it will be seen that this reduction in growth would be expected to follow a reduction in foliage unless an improvement in the water supply or other conditions of growth should be associated with the pruning.

Thus, with some one-year-old apple trees in the nursery where the leaves were removed early in the summer to a height of about twenty inches on fifteen trees, at the end of the season the weight of the roots was 38% less and that of the tops 40% less than those of the unpruned trees that were no larger at the beginning of the experiment. It will be seen, then, that the foliage even on a branch that must come out later may be of value to the tree by increasing the growth of the roots and the size of the trunk.

Reduces Early Bearing

Not only does pruning reduce the size of the tree, but even more markedly it reduces the fruitfulness during the early years of the life of the tree. In the experiments done by Pickering, which are by far the most extensive in this line, the fruitfulness of severely pruned trees was reduced during the first fifteen years of the life of the tree by more than 100%. Of course, no one than with other phases of orchard severe pruning as Pickering was doing, but in our experiments we find that the relatively small amount of pruning necessary to shape a tree to an open head reduces the fruitfulness, at least during the first few years. In this pruning, few of the trees had more than two pounds of wood removed in a year, and yet the effect has been appreciably to dwarf the tree and to reduce the fruitfulness; though, of course, not to anything like so great an extent as when they were pruned as severely as Pickering pruned.

CULTIVATION DESTROYS PERENNIAL WEEDS

The successful eradication of weeds depends upon a knowledge of two important points. First, how long does the plant live and secondly, how does it reproduce and spread? With respect to the duration of life there are three classes of plants, annuals, biennials, and perennials. The first comes up from seed, bears flowers and seeds, and later dies; all within one year. A biennial grows from a seed but produces only leaves the first year. The root and sometimes the leaves live through the winter, but the second year a flower stock comes up, seeds are produced, and the plant dies. A perennial is one whose roots live year after year unless killed in some way, and the plant may or may not produce seed every year. Practically all an-

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nual plants reproduce themselves by seed only. Biennials also, except for the one winter through which the roots live, reproduce themselves by seeds. Perennials may propogate by means of the roots as well as from seeds. The importance of knowing the habits of any weed lies in applying this knowledge to eradicaton of the plant. For instance, it would be useless to summer-fallow a field in order to kill an annual weed like the wild mustard which can be kept from spreading by any method that will prevent it from bearing seed. On the other hand it would be equally unwise to attempt to control quack grass by preventing it from bearing seeds since in many cases it is propagated from root stocks.

The control of annual and biennial plants call for practically the same treatment, namely preventing them from bearing seeds, but perennials must be treated in an entirely different way. Therefore, in view of the fact that Central Canada is more or less troubled with perennial weeds the Maritme Farmer has deemed it advisable to discuss a few of the more prevalent of these. Although there are many perennial weeds and possibly some more serious ones, the most common are quack grass, perennial sow thistle and Ox-eye Daisy.

Quack grass is a tall growing grass with fine fibrous roots as well as underground stems or root stocks which give this plant its noxious character. These underground stems are nearly white and the joints are close together, usually not more than one inch and often less. At each joint new roots are thrown out and at many of them new stems start. In this way the grass spreads rapidly and a piece of the root stock with one of these joints on it will produce a new plant although it may be not over one-half inch long. It ripens its seed in July and unless cut before that time it will be gathered in as hay or in the grain and is bound to spread by the seeds finding their way back to the land, either in manrue, or seed grain.

Perennial Sow Thistle is a tall, coarse growing perennial weed with deep roots and numerous thick underground stems, or root stocks, commonly spoken of as "roots." Upon these, at intervals of a few inches, are borne buds which develop into new plants. The stems are smooth and hollow, and the whole plant is filled with a bitter milky juice. The leaves are pointed, 4 to 12 inches long, deeply cut with segments pointing backwards, and the flowers are abot 1 to 1½ inches across, and bright orange in color. It is rapidly and widely spread by means of its numerous seeds, which are blown around by the wind, and also by its abundant root stocks, which produce a plant every few inches. If these roots are cut or broken each piece then sends up a plant, and the result is that there are now two plants where there were only one before.

Ox-eye Daisy is a shallow rooted plant with numerous stems, simple, and branched and growing to a height of from 1 to 3 feet. The flower heads are solitary on long, naked stems 1½ to 2 inches across, with 20 to 30 rays to each flower, and are pure white with a yellow centre. A single plant produces from 5,000 to 8,000 seeds in a year.

Eradication

Many methods have been devised and advocated for the eradication of these perennial weeds; but the success of any method depends largely upon the soil, weather conditions, and the thoroughness with which it is done. Quack Grass is more persistent and more difficult to eradicate than either of the other two, hence any method which will eradicate Quack will surely destroy the others.

The field should be ploughed shallow as soon after the hay crop is removed as possible and cultivated with a spring-tooth cultivator, drag harrow, or similar implement that will bring the roots to the surface. A disk harrow is not satisfactory, because it buries the roots rather than leaving them exposed to the sun. This cultivation should continue at intervals throughout the summer and fall till most of the roots are brought to the surface and dried. They may be then raked up removed, and burned, or thrown into small piles in the field and burned there. The field should be ploughed again either late in the fall or early next spring and after a thorough cultivation planted to corn, preferably in thick rows, and cultivated throughout the summer. If the field is extremely dirty another hoed crop may be necessary the following year, after which it should be sown to grain and seeded down. This method entails a lot of work, but no crop is missed and the after harvest culfivations put the soil in better tilth, thereby producing a better crop as well as cleaning out the weeds.

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Do you know that one Farmer in New Brunswick sold nearly $5000 worth of berries from five Acres? That another Farmer sold over $8000 worth from a little over ten acres? These results are not exceptional, any good farmer can do as well who will give his attention to the most profitable crop that can be grown in the Maritime Provinces. We can supply Plants for the professional Strawberry Grower, for the man who grows an acre or two as a side line to general farming or for the family garden. Good strong well rooted plants are more than half the battle in successful strawberry culture. Start right. Don't take plants from an old bed or from the side of the rows as a gift. All Farmers know that poor seed means a poor crop. Dunlaps, Warfields and Beder Woods, $4.00 a thousand; Sample, Glen Mary and Dr. Burrell, five dollars a thousand.
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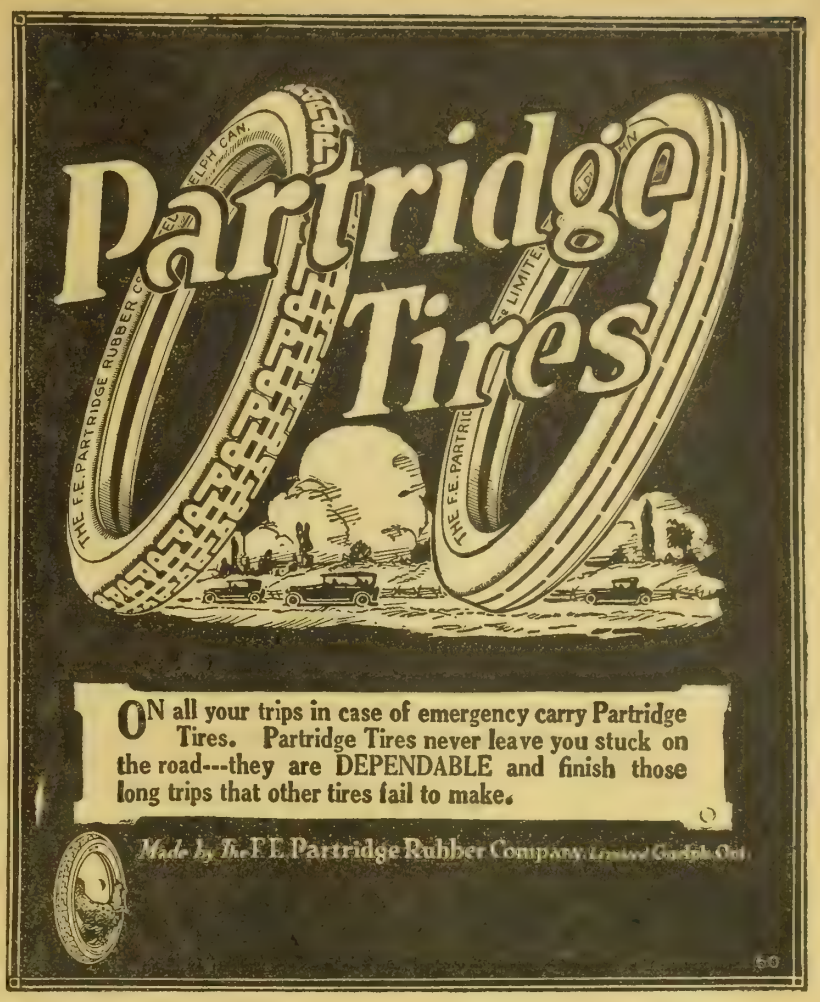
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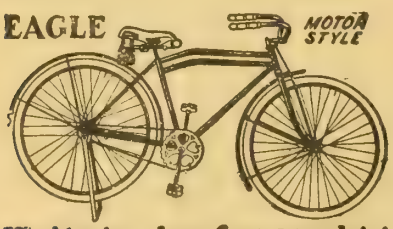

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DAIRYING

THE MILKING MACHINE

(By Geo. W. Muir, B.S.A., Assistant to Dominion Animal Husbandman, Ottawa.)

The object of this circular is to put before the dairy farmer the value of the mechanical milker under the present conditions of labor on the farm.

There has been in the minds of many dairy farmers a great deal of prejudice against the use of a mechanical milker, but the present is no time to let prejudice stand in the way of increased production.

Every dairy farmer with a herd of 12 or more cows should consider seriousIf the installation of a milking machine.

The experience of an ever increasing number of practical farmers, coupled with that of a number of our Experimental Farms and Stations, goes to prove that these machines are decidedly advantageous.

Cost of Installation

The average cost of installation, taking into consideration the five most popular machines on the market, would be $5.00 for an outfit to milk four cows at once.

Such an outfit would be large enough for a 25 to 35cow herd.

For a 20-cow herd a 3-cow outfit would be sufficient. For a 12 to 15-cow herd a 3-cow outfit would be sufficient.

For each reduction of one unit in the installation there will be a reduction of approximately $100 in the cost price.

This brings the average cost price to $16.60 per cow for the large herd; $20 per cow for the medium sized herd; $25 per cow for the small herd.

This in turn goes to show that whlie the cheapest installation for work done is with the large herd, nevertheless the first cost is not excessive in the case of a small herd.

Cost of Operation

The annual cost of operatiion for a 25 to 35-cow outfit, including repairs power, labor in caring for engine and washing machines, interes on investment, and ten per cent. depreciation on machine, would amount to approximately $225.

The above is approximately one-third of what the farmer is at present paying his hired man, where board is not take ninto account.

Divided between 30 cows, this brings the running expenses to two cents per cow per day.

Above Cost Compared with Cost of Hand-Milking

The average hired man will not milk more than seven cows per hour, which at 25 cents per hour, costs 7.2 cents per cow for hand-milking.

One man with a milking machine can milk 20 to 25 cows per hour, which brings the total cost of machine milking including the above mentioned daily running expenses, to 4. cents per cow per day.

This is a saving of considerably over one-third and in a large herd would enable the farmer to dispense with at least one, if not two, men, or it would liberate these men for other important lines of increased production.

It also enables one man to milk many more cows than it is physically possible for him to miilk by hand.

Uniformity in Milking

Not only does a machine deecrease the cost of milking ,but it gives uniformity in milking.

All cows are milked in the same manner every day, and every good farmer knows this is important and that it is hard to obtain with the general run of farm hands.

Reliability of Service

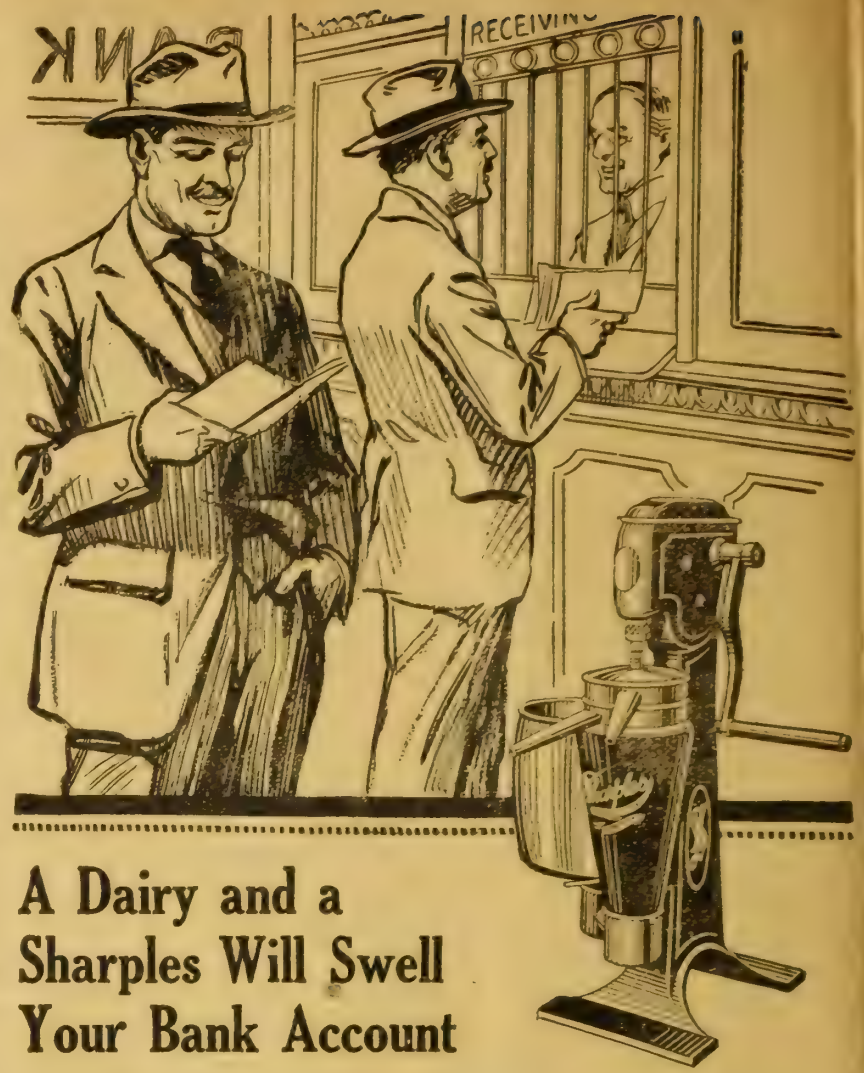
A machine when properly installed and equipped with a reliable source of power is always there ready for work.

Breakdowns are comparatively rare and usually easily remedied.

Wear and tear is not excessive, considering the nature of the machine, and provided the latter is given proper attention.

Effect on Cows

A machine that is properly adjusted and handled will not injure the cows' teats or udder any more than the av-



A Dairy and a Sharples Will Swell Your Bank Account

The reason is simple. You know how profitable a dairy *ought* to be—but perhaps you do not realize how greatly a Sharples increases your profits. Sharples is a *Suction-Feed* separator—all other separators are fixed feed. Now get this: Sharples can be turned at any speed and it *skims* clean. Fixed feed separators when turned *below* speed marked on the handle cannot skim clean—as the flow of milk is greater than the separative force. Some owners of fixed feed separators boast that they always turn at the right speed, but thousands of individual tests prove that fixed feed separators lose butterfat ninety-nine times out of a hundred. There is only one sure way to skim clean all the time at all speeds and under all conditions—use a

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erage farm hand.

Three years' experience of mechanical milkers on the Central Experimental Farm does not show that the cows dry off any more quickly than when milked by hand.

There is no more, if as much, objection to the milking machine on the part of the cows than there is to hand milking.

Old cows used to hand-milking object most, and may not let down their milk readily, but heifers take to machine milking like ducks to water and require hardly any stripping.

AS RELIABLE AS ITS NAME

"Received your churn safely and gave it a fair test; I am perfectly delighted with it," writes one recent purchaser of a "Reliable" Churn—and there is a reason.

You get your butter the easiest, quickest and most profitable way, when you use

THE FAMOUS

RELIABLE CHURN

Its clever mechanism gives that efficient perpendicular stroke, but with a high-geared rotary drive, and it is easier to keep clean, too, just lift out the smooth, white, double glazed jar and rinse.

You can get a book which illustrates every part, gives you full information of hand drive (which can be operated by a child of six,) belt drive and electric drive Reliable Churns.

A POSTCARD WILL DO—WRITE NOW WHILE YOU ARE INTERESTED

GLOBE ENGINEERING CO. LIMITED HAMILTON, CANADA.

Stripping by hand after taking the machines off is advocated by all users, as well as makers, as a precautionary and economical measure.

Effect on Quality of Milk

If the machines are properly handled in the barn, and likewise properly washed in the dairy, the milk produced will be as good, or better, than that produced by hand-milking.

When extra pains are taken with the machines and the care of the milk a very high grade of milk can be produced.

Careless handling results in bad milk and ultimate failure of the machine.

Importance of Efficieincy in Operation

Last, and of far more importance than the cost price or make of the machine, comes the question of the efficiency of the operator.

Handling the machine is a job for the farmer, his son, or some hired man who has an interest in the success of the machine and the cows.

For the best results the operator must be quick and quiet, with an eye for details.

Know the machine and the cows and adapt the one to suit the other, giving each their proper sare of attention at the proper time.

Makes of Machines

Any of the more prominent makes of milking machines upon the market will do good work, provided they are properly handled.

The addresses of the dealers or manufacturers of the various machines can be procured from farm journals, or upon aplication to the Animal Husbandry Division, Experimental Farm, Ottawa.

INCREASE PROFITS IN DAIRYING THROUGH BREEDING BETTER COWS

Heavy and economical production of milk is largeely a matter of individuality in cows, and by that we mean that some cows have the power to make use economically of much larger quantities of feed than others. All cows require about the same quantity of food for maintenance. Above what a cow requires for maintenance, she uses either for milk production, or body fat. Cows that are low producers of milk tend to laying on fat with the excess feed they eat above the maintenance supply, whereas cows of the pronounced dairy tendencies will not take on fat, but will produce with it the supply of milk. From a strictly dairy point of view, feeding these two animals the same quantities is a distinct loss to the farmer. It takes all the profits their heavy milking cows make, to make up for the waste of feed occasioned by keeping the low producing cows. Herein lies the skill in feeding that is based every time, on the individuality of the cow. Without the full knowledge of the milk producing propensities of every cow on the farm it is impossible to tell if the milk production is a paying proposition.

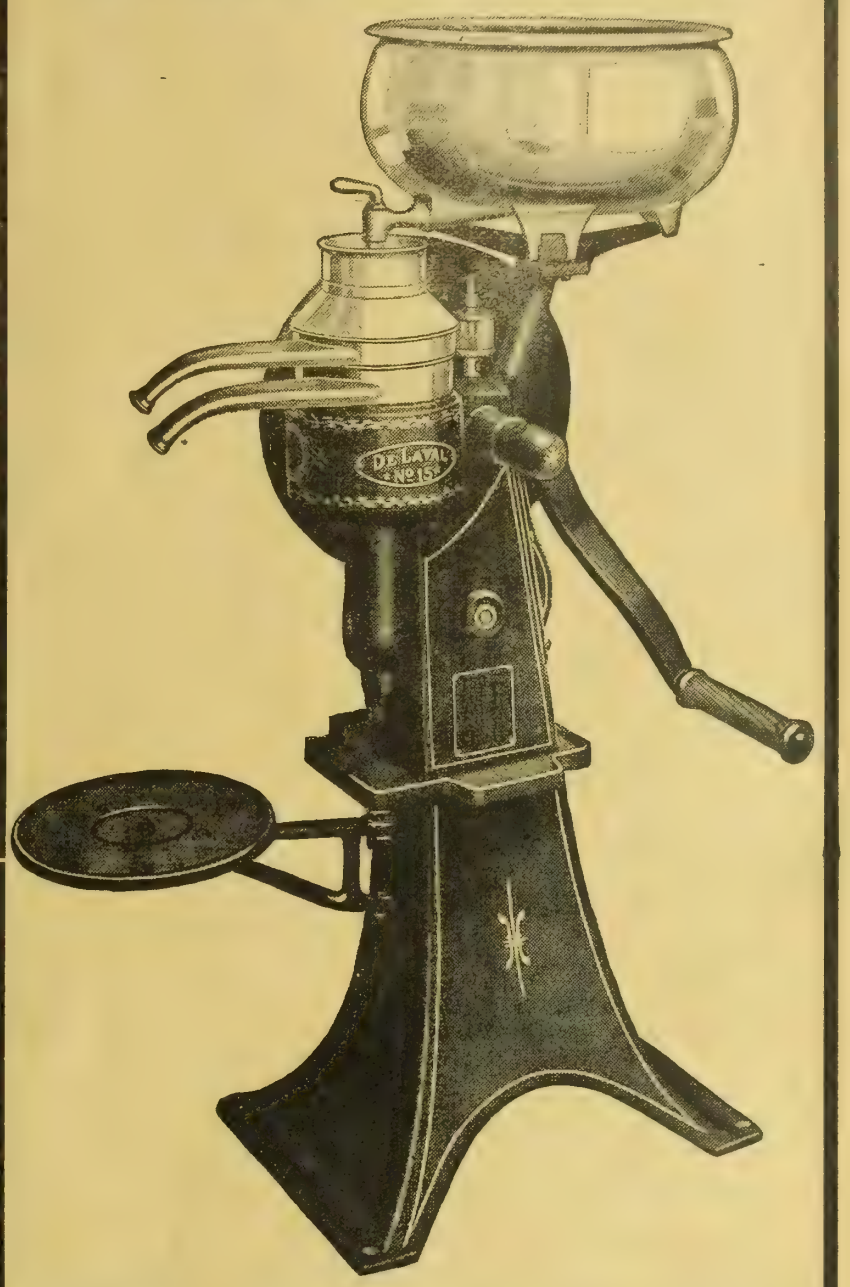
Why is it that on one farm the average yield of milk per cow is 6,000 pounds, and on a neighboring farm 3,000 pounds per cow? Why is it that on one farm the average yiield of potatoes is 300 bushels and the farmer next door gets only 100 bushels per acre? It is the difference in the individual. Both lands were of the same quality, and both cows had used the same quantity and quality of feeds.

Who Steals the Profits?

Therefore, what is wanted in the production of milk, both for sufficient quantity and with a sufficient mar gin of profit left the dairyman, is the elimination of the low producing cow. She stands between the farmer and the consumer as a bugbenr on his industry, drawing upon the profits of his high producing cows, camouflaging her real position of feed waster and profit stealer.

Continued on page 960)

Now is the best time to buy a DE LAVAL CREAM SEPARATOR



THESE are the days when the farmer is getting the most milk, and with butterfat at its present high price he should be sure to get all the cream.

Many "claims" are made for various cream separators, but the most convincing proof that the De Laval is the cleanest skimming machine is the fact that 98% of the large creameries the world over use the De Laval.

Even if you do not separate as much cream as the large creameryman, you can no more afford to waste cream than he can.

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Hamilton Carhartt, President

Hamilton Carhartt Cotton Mills. Limited

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LIVE STOCK.

THE TUBERCULIN TEST IN CATTLE.—SOME FACTS BREEDERS WILL DO WELL TO CONSIDER WHEN TESTING

Is the tuberculin test anywhere near a sure thing? Are cattle that react sure to be diseased, or will they react sometimes when there is nothing wrong? Will cows due to calve in a few weeks' time react when free from tuberculosis Will cows that are free from the disease react just after calving Are there any causes that will make cattle react when free from disease Are some breeds of cattle more apt to have tuberculosis than others?

The tuberculin test is just like anything else. It is not infallible, and its work is determined very largely by the efficiency, honesty and commonsense methods by which it is applied. Cattle that show typical reactions are quite sure to be diseased, provided conditions under which they are tested are normal. Many veterinarians claim that because a cow is shortly due to calve, or because she has very recently calved need not be considered in administering the test. This may be true; but if a cow under either of these conditions or under abnormal conditions shows a reaction, she should be considered merely suspicious. Then she should be isolated from the remainder of the herd for not less than 60 days, and re-tested to make sure. Any condition that causes a cow to be in a feverish condition, is liable to render the test doubtful. It is but good common sense to recognize this, and give the cow the favor of the doubt as suggested above. Whenever a large percentage of a herd reacts, the owner should follow the cattle to the butcher. If tuberculosis is present the veterinarian can point out the lesions, proving the accuracy of the test. The accuracy of the test intelligently applied, with the use of a liberal amount of common sense, is not to be questioned. In accuracy is more to be feared from the standpoint of failure to detect the chronic case. Quite often cows far advanced in the stages of tuberculosis will fail to react to the test, and by being left in the herd they continue to infect healthy animals. Breeders will do well to consider this fact, rather than to doubt the accuracy of the test on the other hand.

The dishonest veterinarian who misreads the test, and deceives his client by making him believe that his herd is entirely healthy when there are reactors present, is far more to be avoided than the one who is so overly strict that he occasionally condemns a healthy animal. The honest veterinarian who uses common sense and efficiency is a benefactor to the community he serves. Such—and only such—a representative of the veterinarian profession should be permitted to even live in a community. All others should be ostracized. Then—and only then—will there cease to be doubters of the tuberculin test.

All breeds of cattle are susecptible to tuberculosis. No one breed can be considered more susceptible than another. It is not a question of breed. It is a question of tubercular germs being present, and especially in barns that are poorly ventilated, dark and damp. It is very largely a question of foolishly refusing to permit foul air to leave and fresh air and sunshine to enter the cow's barn.

Particular breeds of cattle are not more susceptible to tuberculosis than other breeds. No matter what breed a cow belongs to, no matter how big and strong of constitution she may be, she will get tuberculosis if she is subjected to tuberculosis germs, and it won't take long if she is kept in a dark, damp, foul barn where there is little light and fresh air.

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A REMEDY FOR STERILITY IN COWS.—PRINCIPLES UNDERLYING THE DISEASE.

I have read with much interest the information on contagious abortion which has lately appeared in your columns and would like to get your opinion about the cause of sterility, or cows failing to prove in calf though berd repeatedly, a circumstance that is causing loss in many herds today. Is this due to the presence of contagious abortion?

There are many erroneous ideas about barrenness, the commonest being that the animal is not open. Contrary to the genital structure of a mare, that of a cow cannot be tampered with by any artificial "opening." Any attempt to operate on a cow in order to make her conceive is bound to result in failure or may end in the death of the animal. Likewise breeding powders, and similar preparations or concoctins administered into the genitals, or given in any other manner will not overcome the diseased condition of the genitals, which is largely responsible for sterility. Barrenness is a common sequel of contagious abortion as either the abortion germ or the germs that enter the uterus as a result of retained afterbirth are capable of maintaining the uterus in a serious state of ill health. Other condition, in addition to infection of the genitals, that are responsible for barrenness are diseased

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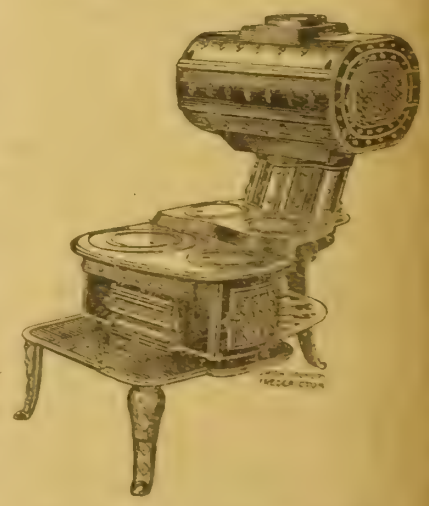

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ovaries and occasionally disease of some other part of the female genitals. The handling or these conditions demands an intimate knowledge of anatomy and pathology, and vast experience. The novice, and even the expert, is bound in some cases to be disappointed in the results obtained.

Getting rid of abortion by the methods advocated in the articles appearing previously in these columns is the safest method of lessening sterility. A man who will not follow a definite plan of herd improvement need expect no help, for no help can be given. There is no easy way of getting rid of this disease. Its suppression is dependent upon a realization on the part of the owner of the principles underlying the disease, and the thoroughness with which he carries out the details of sanitation.

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Dominion Shorthorn Breeders' Association

W. A. DRYDEN, President, Brooklin, Ont.
G. E. DAY, Secretary, Box 285, Guelph, Ont.
22

DEMAND REMOVAL OF CATTLE EMBARGO

The Scottish Chamber of Agriculture recently held several meetings to discuss the question of the embargo on Canadian cattlee, and by a substantial majority the directors have decided to demand that the embargo be removed. At the meeting where the final resolution was adopted the president of the chamber made some pointed observations on present conditions between Scotland and Canada. He scaid: "Canada has for the moment completely shut out Scottish cattle from the Dominion, though there is no disease in Scoltand, nor ha sthere been for many years. This leaves a somewhat nasty taste in the mouth when we, in Scotland, proceed to consider the matter of admitting Canadian cattle. The wrong-doing, if wrong-doing it is to be celled, is not all on one side. Let both sides play the game, or not play at all. If Canada is free from disease, so is Scotland, and until Canada lifts the embargo on our cattle, the question of admitting Canadian stock to Scotland must necessarily lie over. And if there are to be open ports, let the conditions be alike. If there are to be quarantine and test regulations on the one sidefi let the same hold good on the other. No doubt a substantial period of quarantine might reduce the risk of admitting live cattle from other countries to a minimum, but, of course, in the interests of the valuable breeding stocks of this country there must be no risks."

A TONIC FOR ALL LIVESTOCK

Stock of all kidns need salt. Experiments with milk cows have often showed that there is an increase in the milk production when salt is added to the ration, and a decrease when salt is taken away. Chickens and fowls of all kinds reslish an occasional pinch of salt in their ration, while the need is equally great with the horse.

Ecpecially in pig culture salt, charcoal and ashes are great aids in promoting bone growth as well as to correct acidity of the digestive organs and prevent worms. In saving ashes for hogs we always rake in as much of the charcoal as we can. Some farmers mix sulphur and copperas with the ashes, but others prefer to give these drugs in slop, unless animals are readily sick and require individual treatment. In the latter case those that are serious should be kept separated from the herd, and the medicine administered according to directions.

SELECTION OF STOCK

The inexperienced sheep raiser should begin with grade ewes of the best class available and a pure-bred ram. The raising of pure-bred stock and the selling of breeding rams can best be undertaken by persons experienced in sheep-raising. The selection of the type and breed should be made by considering the class of pasture and feeds available and the general system of farming to be followed, along with the peculiarities of the breeds and condition and kind of feeding and management for which each has been especially developed.

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MONTREAL PETERBORO WINNIPEG VANCOUVER

GOOD NEWS FOR MARITIME STOCK MEN

Some weeks ago it was announuced through the Press that a strong movement was afoot, originating with the Maritime Stock Breeders' Association, to secure Federal aid in providing cold storage and marketing facilities at one of our eastern ports. This implied also the erection of stock yards and abattoir, not necessarily at the same point, but in a convenient locality for the whole area.

An expert was sent down from Ottawa to look over the whole situation and report. His report is a most favorable one, and the request has now come from Ottawa to the Maritime stock interests to select the location for the stock yards and abbatoir. It is taken for granted that the best point for the cold storage and shipping plant is Halifax.

A meeting is now being called at Amherst on the 17th June to decide this matter. It is hoped that all parts of the territory will be presented and an amicable and wise decision will be arrived at. In the meantime the men who have been pushing the whole enterprise are to be congratulated on the prospect of success.

A calf should not have more than two gallons of milk a day—this will be about 20 younds. Of course, when he grows older he may handle as much as 25 pounds per day. Start the calf out with not more than one gallon or eight pounds per day during the first week. This may be increased to 10 pounds the second week; 12 the third week and 14 the fourth week. The feeder must watch the calf and see just how he is thriving. The most important point in feeding a calf is that the amount of milk fed should be uniform—not a great big feed in the morning and a small feed at night, or vice versa.

Calcium and phosphorus, the two most important minerals required by swine may be supplied by feeding bone meal, wood ashes, corn cob meal or charcoal. These two elements are especially deficient in corn, seeds, cereals and cereal produces. Skimmilk and tankage occupy first place sa sources of mineral nutrients for the grain fed hog.

No animal appreciates sunshine more than young lambs. To shut them away from it is cruel and unprofitable. Any ailing sheep or lamb or sheep and lambs, for any reason shut away from the main flock will always eeat better and do better if allowed a sunny yard during a part of the day.

A good way to teach a young calf to eat grain is to take a little of the grain the hand and place it to the nose and mouth of the calf immediately after he gets done drinking. This grain will adhere to the moist surface causing a ticklinsh sensation, and the calf immediately begins to lick the grain into his mouth. In this way he gets a start. If there is a little fresh grain in the manger he wil son begin to nibble at it himself.

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THE HORSE

THE DANGER OF FEEDING MUSTY AND INFERIOR HAY OR GRAIN TO FARM HORSES

Ill fares the horse that is fated to become the dump for all inferior hay or other feed stuffs during the comparative idle days of winter. Because the horse is not doing much many farmers think they are economizing by continuing this practice. There are no farm animals whose organs are adjusted by nature to digest feed that has been badly handled in harvesting or storage, and the horse is the most sensitive of all to its evil effects. Evidently it is considered economy to make the horse the open sesame for such hay as has been spoiled. "It will do for the horses," is a common remark, and the manger is filled to the full and the horse is supposed to pick out the best of it.

I visited a farm some time ago where this practice was in force and it was put down as "economy" in feed. There were 15 cows in another barn—an average bunch of the 4,000 to 6,000 pounder type—and they were receiving all the best clover hay and concentrates they could eat up. The arrangemeent was a continuation of the economy idea, and readers can judge the results of a few years' practice at throwing away expensive feeds on cows that were not paying for it; and starving the horse that supplied the motive power required to carry on this non-paying business. But this is a digression from the fate of the "economized" horse.

Risks Taken in Feeding Inferior Hay

No farmer can help, some years, in having more or less spoiled hay, caused either by wet weather, overripe sunburned timothy or scarcity of labor. And what to do with it is a problem, but it is very risky feeding t ogive horses. In my experience in Scotland, in feeding horses where the climate is so much against the making of good quality of hay, I found that well harvested oat straw made a more superior and safe feeding. Oat straw, when the crop is cut before it becomes too ripe, is far better feed for horses, in my estimation, than over ripe fibrrous timothy hay that is so often fed to them. The oat straw also had the advantage of being free from dust, as all the threshers used in Scotland put the straw through a fanning mill, separating dust, chaff, weed seeds and similar rubbish, while moldy, fibrous hay retains all its objectionable features.

It is the unmarketable hay that is generally kept for the farm horse, and unfavorable harvesting seasons are followed by much sickness in the stables. The horse's stomach is a comparatively small organ, and it is very unwise to overload it any time, but more especially if the feed is of inferior quality. Bulky feed of poor quality deranges the digestion, lessens energy, interferes with the functions of the lungs and endangers life.

The absence of colicky pains that may follow the eating of moldy hay by some horses is no criterion that the horse is not suffering, or that his usefulness is remaining unimpaired. His digestive organs are being highly taxed all the time and digestion is weakened, and the horse is losing energy and flesh. There is a mistaken idea that a grain ration given will tone up the inferior hay. It will certainly help to keep the horse in better vigor and flesh, but it will never allay the evil effects of feeding large quuantities of inferior fodder, and the full benefit of a grain ration is lost when fed along with dusty or moldy hay.

How to Diminish the Risks

If the hay supply is such around the barn that no other can be had than that which has been somewhat spoiled, its condition can be improved so as to avert some of the baneful effects. Shaking the hay to remove the dust before feeding is always a safe procedure as well as dampening it after the shaking. Lime water is one of the best solutions to dampen the hay with. It is prepared by slaking the lime in water in some large vessel and allowing the lime to precipitate to the bottom, then using the clear water on top to dampen the hay. If this practice was followed there would be less cases of heaves, a malady among horses that follows in the wake of bad hay harvesting seasons, and feeding horses dusty hay under ordinary conditions of hay feeding in the spring time.

The care in feeding clean, fresh good quality hay must also be carried out with the other feeds as well. Damaged grain and grain largely made up of weed seeds are equally as detrimental to the health of horses. So also are the roots that have molded or heated in the cellars. Neither grain or roots that are spoiled should be fed to horses under any circumstances. They are even of doubtful value to the cow or the steer, but the anatomy of this species of farm animal can withstand much more than the horse.

Suitable Mangers and Feed Boxes

With the endeavor to get the best of feed to the horse there must also be exercised a watchful care in not wasting it. Many mangers and feed boxes are so crudely arranged that waste can be written in large letters over them in describing their use. The man who feeds his horses poor

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a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.

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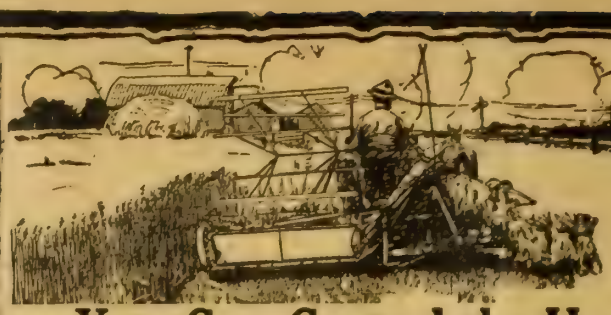

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hay generally does it too generously, and the horse in searching for some of it that is palatable, tosses the most of it out of the manger in the operation, and it goes for bedding. The horse has therefore been taught the trick, and when he gets good hay it is subjected to the same treatment. Over head racks have the same wasteful fault. Most horses are fed too much hay rather than too little. Mangers built just a little extra deep are money-savers, for the horses cannot throw out so much hay.

Feed boxes for the grain are on the average too small. Nine out of every ten feed boxes around the stables are so small and shallow that no one can blame the horse for spilling the feed. The very operation in feeding by the horse wastes about one-fourth of the feed. It is spilled into the manger and on the stable floor. It may not be altogether lost in the manger, if it does not fall on to six inches of dust and weed seeds that are often allowed to gather there. Anyway the feed box is the place intended, and a proper one should be supplied. It is poor economy to fail to provide a proper feed box. It is the normal thing for horses to shove and throw their feed about with their noses while feeding. The spilling operation going on three times a day for a whole year, soon runs into money at the price grain is at present. It is rank waste at any time, and remodelling the feed boxes is the only way to cure it.

Curing the Horse that Gulps His Feed

Have the feed box from which the grain is fed at least 18 inches long, 15 inches wide, and 15 inches deep. Build such a box into one end of the manger, so that the top of the box is level with the top of the manger. This may shorten the manger but on the average mangers are apt to be too large, inducing the feeding of too much hay.

This arrangement may not totally eliminate waste of grain, for there are exceptional horses, but as a rule it will, for when the horse once gets his head into a feed box of this depth he will not manage to force the grain so readily as from a shallow box.

However, some horses have the habit of taking a large mouthful and then droping part of it on the floor at his feet. I have successfully stopped this, in many cases, by putting 2 or 3 smooth stones about the size of an apple in the bottom of the box, before pouring the grain over them. Horses that take big mouthfuls, and do not take time to masticate their feed or are liable to choke in their hunger and hurry, will be prevented by using a few smooth stones in the bottom of the feed box.

Winter is the opportune time to see after this detail in horse management. There are many idle moments in which to adjust the feed boxes, which operation, when completed with a little attention to the quality of the hay and other feeds given, will conserve the desired motive power for spring work, and save many veterinary bills.

THE INFLUENCE THAT PROPER ATTENTION OF BROOD MARE HAS ON THE HORSE INDUSTRY

Under ordinary conditions spring is the natural time for the young foals to arrive. Much of the success that attends horse breeding opertaions is due to the care and management of the brood mare. This care will aid her to produce a strong, healthy foal and will also fortify her own condition to raise it to full vigor. It has been made clear from time to time in these columns that the scientific study of the problems of breeding possesses a great national interest, but the success of these depend on the management of the pregnant female. It is obvious that any means by which disease and accidents connected with breeding can be checked, and the capacity to bear young of the most approved types, is of great commercial value.

Feed and Exercise

The brood mare that is sucking a foal or developing a foetus, should get feeds that correspond closely to those required by a growing animal. In view of the large amount of nourishment that the growing foetus requires, foods for the mother must contain a considerable amount of protein, and in order that her system be kept in good physical bloom, these feeds should have a cooling effect. Feeds which meet these requirements well are oats and bran. The bran keeps the bowels open and tends to keep the body and legs free from skin diseases. Roots, when they are available, form a very valuable addition to the ration, if fed in limited quantities. The amount of grain that a brood mare requires is about one pound to every 100 pounds of live weight, with about the same amount of good fresh mixed clover hay. In order to keep her doing well, she will need considerable exercise, for it is impossible to feed her as heavily as the above ration, and keep her in condition without exercise. There is however, the happy medium in balancing the feeding and exercise.

Some farmers never take any particular thought about the brood mare, and work her as they do an ordinary gelding. But they are taking great risks in doing so. Some hardy mares may pull through without an accident, but it is at a loss to the young foal, and will have a detrimental effect on its life history. **Doing team work in the wabon, ff there is much backing to be done, is bad practice. A brood mare should never be called upon to do this class of work.** Again on the other hand, there is as much danger ger of a lack of exercise, and the most experienced and successful horse breeders are the farmers that work their mares judiciously and regularly up to the time of their partri- tion.

At the Time of Foaling

The mare carries her foal about eleven months, but living foals may be born at ten and a half months to a year. **Between the sixth and eighth months they are most liable to cast or abort the foetus, if put to too heavy work on wet and heavy land, especially as one of a team in a wagon.** Every care should be taken at this period that they are not unduly strained at work.

Before foaling, the udder becomes filled, is hard, and sometimes tender. The pelvic ligaments become slackened as can be seen in the depressions at each side of the tail. Generally some wax shows at the point of the teat, or milk may escape from the teat for a considerable time before foaling. None of these indicate the exact time that parturition will take place. It is impossible to tell the exact period. Parturition comes on very quickly, often without warning,

(Continued on page 960)

PRICE 35c

Horsemen, Attention !

These are the Preparations which have helped to make Canadian horses famous.

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Ask for and demand.

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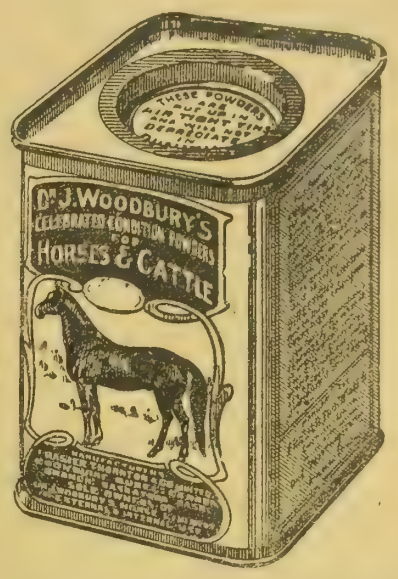

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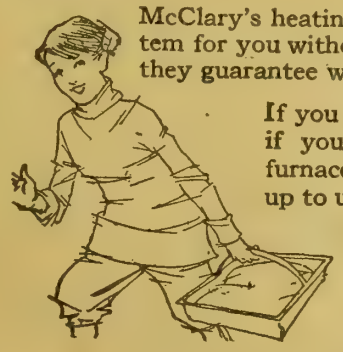

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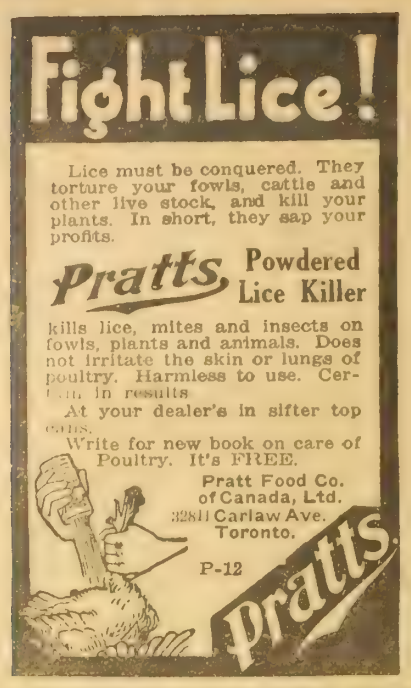
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POULTRY.

COTTON SEED MEAL AS A POULTRY FEED

(By B. .F. Kaupp, North Carolina Experiment Station.)

Work on several series of evperiments conducted over a period of five years at the North Carolina Experiment Station, have recently been completed. The following summary and conclusions seem justified at this time.

Cotton seed meal contains a substance called gossypol. This gossypol contains two pigments, one a brownish resinous substance, and another a yellowish crystalizable substance.

The pigment of gossypol is stored to a more or less extent in the fat and in the yolks of eggs by those hens consuming the meal. Some hens have a tendency to store more than others. These brownish-yellow yolks are objectionable to the consumers, though they are perfestly wholesome so far as our knowledge goes, but are thought to be spoilt by the consumer.

Gossypol to the amount contained in one ounce of cotton seed meal, consumed daily by adult fowls, produces injurious effects as pedulous crops, depraved appetite, the latter leading to the eating of sticks and pieces of litter as straw, resulting in impaction and death of the fowl.

If the total feed consumed consists of 30 per cent. cotton-seed meal, there is likely to be ill effects and some deaths due to the meal.

If the cotton seed meal be given in the mash alone, and the birds are given a morning and evening scratch feed and in addition allowed more or less range so that they can forage an additional amount of feed, it will be noted that the effects are not nearly so bad from the fact that if they get sick of the cotton seed meal they will have a chance to "lay off" for a while and later return to it. That, in our estimation, partly acocunts for the different opinions given on the feeding of cotton seed meal.

Birds eating excessive amounts of cotton-seed meal or its gossypol, apparently die from emaciation and starvation owing to the fact that they refuse feed.

Twenty per cent. cotton-seed meal in broiler fattening proved satisfactory, and likewise the same results obtained in cram feeding work of old hens.

In two of the three-year feed tests the highest percentage of deaths was from cotton-seed meal lots (pens 23 and 36). It is generally conceded that a high percentage of cotton-seed meal and of linseed meal cause a higher death rate than many of the other concentrates.

There are marked differences in individuals as to their tolerance of cotton-seed meal. Heating the cotton-seed meal to a high temperature has a tendency to lessen its injurious effects.

The feeding of large amounts of cotton-seed meal has no ill effcet upon the progeny of those birds fed on it.

Cotton-seed meal fed to young chicks in quantities not to exceed 10 per cent. of the mash has given good results.

Cotton-seed meal is high in globulin, a protein stimulative to growth and development, also in alkali-soluble protein likewise stimulative to growth.

The limit of safety in feeding cottonseed meal for all purposes to fowls is perhaps about 10 per cent. in mash, allowing the birds grain feed twice daily in addition.

(Cotton-seed meal is a good thing to let alone if other feeds are available.—H. B.)

LET a woman ease your suffering. I want you to write, and let me tell you of my simple method of home treatment, send you ten days' free trial, postpaid, and put you in touch with women in Canada who will gladly tell what my method has done for them.

A MESSAGE TO WOMEN!!

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the side, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me today for free trial treatment.

Mrs. M. Summers, Box 309 Windsor, Ont.

At the Yarmouth Y. M. C. A. Boys' Camp, held at Tusket Falls in August, I found MINARD'S LINIMENT most beneficial for sun buurn, an immediate relief for colic and toothache.

ALFRED STOKES,
General Sec'y.

DOES IT PAY TO KEEP PUREBRED FOWL?

This is the third time my practical experienre has gven an answer to this question.

Why, in the face of all the evidence to the contrary, do so many people persist in thinking that a hen is only a hen, whether thorough-bred, crossberd or mongrel?

The following account of what my small flock of thorough-bred fowl did during 1918 may help to convince some of the people with mistaken ideas, that it pays to keep thoroughbred fowl. You have already published the results secured in 1916 and 1917.

During the first seven months of the year I kept White Plymouth Rocks and Old English Pheasant Fowl. In August I sold the Old English Pheasant Fowls, and since had White Plymouth Rocks only.

The White Plymouth Rocks are a splendid laying strain. May pullets started laying at eaxctly six months old; June pullets a few days over six months; July pullets at six months. They develop well and grow large. Cockerels at six months weighed eight and nine pounds.

The White Plymouth Rocks averaged for the whole flock 144 eggs each, and during the hatching season a nubmer of hens were hatching and brooding chicks for as much as eight or ten weeks at a time.

My fowl are not forced for laying. During the winter months I see them off the roosts on Saturdays and Sundays only, and they are given food only once a day.

Canada's Opportunity On the Highway of Success—What has that to do with GATES? Everything!
PEERLESS LONG SPAN GATES
The gate pictured below is a companion to the Peerless Perfection farm fencing, strong, durable with heavy tubular braces, which stiffens it like a steel bridge. It can be used as an oak door hung by a master mechanic. Lateral and upright wires are securely clasped at all intersections and stretched upon a strong rigid frame of tube or steel electrically welded into one solid piece.
For Looks, Wear and Service
guardian here." For durability its of heavy open hearth steel wire, galvanized and can't rust at any point. For service it is put together to last a lifetime and is the cheapest best gate made. You will be interested in our Catalog. Write Today for Literature describing all our many styles of Gates, also Rods of Farm and Poultry Fencing for farms, parks, residence, park, etc. It will pay you well to get acquainted with Peerless Perfection standard of construction. Write nearest office today. Do it now.
THE BANWELL-HOXIE WIRE FENCE CO., Limited
Hamilton, Ont
Winnipeg, Man.

Average number of hens and pullets during twelve months, 29.

Average profit per head, $1..17.

All young stock raised were from the hens kept, and only cock birds for breeding purposes were purchased, and, of course, charged for in expenses.

Eggs for hatching were sold in season for $2.00 per setting (15). Hens, pullets and cockerels were sold for breeders, prices ranging from $2.50 to $4 each. You will note that prices secured were reasonable, and really below the real value of the stock. As the birds sold weighed (live) from six to ten pounds each, even if they had been disposed of as dressed poultry at the prevailing market price (40c to 60c per lb.) there would have been nearly as great a profit.

Jan. 1st, 1918, stock, houses feeds, etc., on hand	$209.00
Dec. 31sta, 1918, expenses	218.68
	$427.68
Deec. 31st, 1918, receipts during year	$375.60
Dec. 31st, 1918, stock, etc. on hand	231.00
	$606.60
Balance profit	$178.92

But do not let any person run away with the idea that such results can be secured with any kind of a hen, or through indifferent and careless marketing methods, for they are certain to invite a failure. From my experience and from observation of the methods and results secured by others, I am convinced that success can only be secured by keeping thoroughbred, bred-for-a-purpose fowl, combined with the best busines methods of conducting the business.—W. C. R., New Brunswick.

It is natural for chicks to thrive and develop very rapidly, and if they do not it is because of some unnatural condition. The well hatched healthy

KING COLE
ORANGE PEKOE
TEA
"A Cup of Rare Delight"
FRAGRANT and full of flavor. The quality of KING COLE Orange Pekoe is well expressed in the phrase "The 'Extra' in Choice Tea." Always ask for it by the full name KING COLE Orange Pekoe.
Perfectly packed in bright lead foil and price marked on every package.

chick does not need doctoring any more than does the healthy well born child. With the baby chick there are many unnatural conditions which commonly hinder its natural development, first and foremost of which isa lack of vigor in the parent stock, and this is sometimes due to breeding from immature pullets hatched late the previous season.

TEN HENS—10,000 EGGS

The common teaching is that pullets are so much more profitable than even year-old hens that it is advisable to change the flock each year. There is one successful egg farm on the Atlantic Coast, however, which goes on the assumption that a Leghorn at least is profitable as long as she lives. We doubt if even this farm could furnish as remarkable examples of productivity as has been furnished by 10 White Leghorn hens owned at the Ohio Experiment Station which have produced 10,000 eggs. Two of the hens are nine years old, six are eight years old, and two are five years old.

The "ace" of the lot, C-34, has 1179 eggs to her credit; she is followed closely by C-38, with a total of 1147. The other eight follow closely in production. Two of the hens are from an original lot of pullets purchased in 1909—when the poultry investigational work was begun at the Ohio station.

None of the hens show any particular effects of old age. While their annual production is less than during the earlier laying periods, they still lay regularly during the spring and summer months. Each of these hens has produced approximately $25 worth of eggs, at ordinary market prices, at a feed cost of about $10.

This is not an argument for keeping old hens in the farm flock. Even in the good pure bred flock the pullets will be the most profitable and only by the most rigid culling and selection will it be good business to carry more two-year-olds than are necessary for the breeding flock. The Ohio results do hold out a hope, however, of a possibiilty through breeding and selection of developing a strain of fowl that will be profitable over a series of years.

HOME GROWN FEEDS FOR YOUNG CHICKS

There are numerous combinations of feeds that will make satisfactory rations for chicks. However the feeds that are available or that can be readily secured, may determine to a large extent the make-up of the ration.

Keeping that in mind the Ohio Experiment Station recently conducted an experiment to find out the advisability of feeding home-grown grains to chicks, and the results have been highly successful. The chicks used were single comb White Leghorns, hatched in an incubator, and kept in a brooder house 10 by 12 feet, which was heated by a colony brooder stove. The feed consisted of cracked corn of good quality and a mash mixture of two parts by weight of ground corn, three parts bran and one part fine meat scrap together with a few boiled eggs at the beginning and water and grit. They were fed five times a day for the first three weeks, after which the mash was placed in hoppers and the chicks allowed free access to it. At the beginning of the test there were 239 chicks, and six weeks later there were 227, which goes to prove that a satisfactory feed can be made up at home. The mortality was light and the chicks are reported to be doing remarkably well. This ration will serve as a general guide in making up the feed for chicks, but it should not be assumed that this is the only ration that will give good results.

Candy a Splendid Food

One of the most attractive forms in which food can be eaten—is candy.

Candy is composed principally of sugar, nuts, fruits, some fats such as butter, and chocolate.

All these ingredients are recognized by eminent medical authorities as food products, which the system craves and demands.

Let us examine their food values separately.

We all know that sugar is a body-building essential; about one-quarter pound of sugar being required by an adult every twenty-four hours.

Nuts and fruits yield a high percentage of nutritious materials.

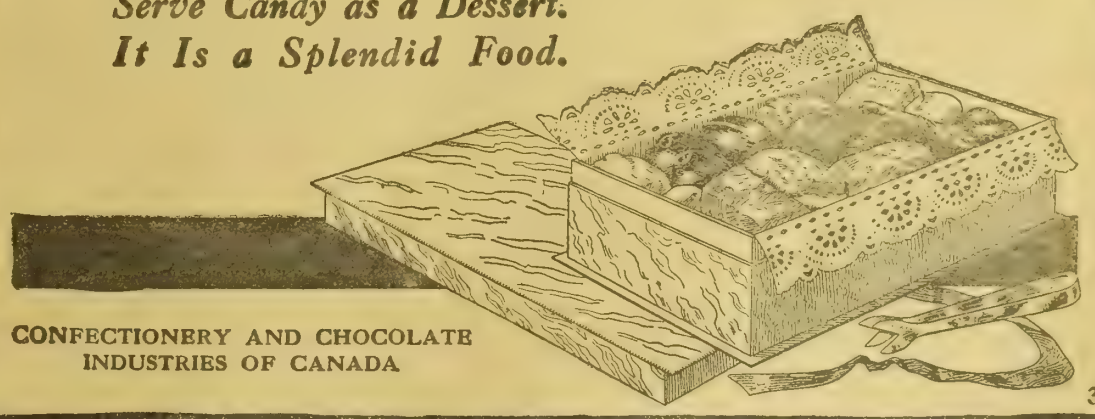
Fats supply the bodily fuel and should be used in every dietary.

Chocolate is a delightful stimulant, especially valuable in restoring energy.

Combine these ingredients and are they not still food?—satisfying, nutritious, essential and in a most delightful and properly balanced form.

Eat more candy. Candy is beneficial to all and harmful to none.

Serve Candy as a Dessert.
It Is a Splendid Food.



CONFECTIONERY AND CHOCOLATE INDUSTRIES OF CANADA

3

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

DO IT NOW

If you've found a task worth doing,
Do it now.
In delay there's danger brewing,
Do it now.
Don't be a by-and-byer
And a slugglish patience-tryer;
If there's aught you would acquire,
Do it now.

WHEN JOHNSON WAS MADE TO SEE

The new horse proved more unmanageable than anticipated, and when Johnson returned it was in no pleasant frame ot mind. As he left the country road and turned into his own lane he passed a field where some of the men were at work. One of them called to him inquiringly: "Ain't it 'bout time for the dinner bell to ring?"

"Why, yes, of course. Ain't it rung yet?" He looked at his watch. "Ten minutes of 1," he called to the men. "Drop your tools an' come to the house." Then to himself: "I'll soon have an understandin' 'bout this thing. Farm hands can't let their work wait on wimmen's laziness. Git on there, Dan." He did not go on to the barn with the horse, but stopped at the kitchen door and strode in furiously. "What's all this meana—"

Then the unnatural stillness made him pause and glance around. There was no fire in the stove, no signs of food being cooked and in the sink were the unwiped dishes of the morning. What did it mean? An unreasoning terror of the silence began to possess him. In his long remembrance of the room he had known nothing like this. It had always been a scene of busy cheerfulness and order during his married life, and durng the days of his boyhood, when his mother had presided over the kitchen. He caught sight of a letter addressed to himself and he opened it eagerly.

"Dear Husband," the letter began, "I am going away for a week or so to give Mary a rest. The poor child is worn out and a little trip will do her good."

"Huh!" he grunted ,breaking off suddenly. "Little trip, indeed. Seems like she's a millionaire, sure enough. Gone to that sister Mary of hers, of coure. Well, I'll send Jake after her with the lumber wagon," grinning spitefully; "that'l jounce some sense into her."

Then he read on: "You might get Jake or Bod to help you some with the cookin'. But, of course, it won't be much work, as you often tell me, so mebbe you can do it all youreslf, at odd times, when you ain't busy. Only don't forget the settin' hens an' the cheese curd, an' the cowcumbers to pickle, an' to scald the milk pans when you wash 'em, an' to gather up thte eggs every day, so they'll be fresh; an' remember the cat craves her milk an' that the dog must be kept shut up or he will kill the young chickens; an' please don't forget to use hot water in washin' dishes like you did when I had that bad spell, an' Mary was down with measles, an' you had better use the self-risin' in making bread as the yest might bother you. An' that reminds me, don't forget to clean out the stove twice a week; if you don't it'll stuff up an' smoke. An' then there's——" "What fool rigmarole's she tryin' to git off, any how?" he snorted wrathfully. "Don't she suppose I know as much about what's to be done as she does? An' I won't send for her neither. not by a long shot. That's just what she's fishin' for. Seems to think the world can't move 'cept she's turning the crank. Huh! they can stay till doomsday for all I care!" He shook the letter in an imaginary face, and laughed maliciously. "That's jest the very thing. Keep quiet, like I don' scasely know they've gone away, an' theen 'bout tomorrow night they'll soce sneakin' in like hungry chickens fors omething to eat. She an' that sister Mary of her's can't git along together no how.'"

"Hey!" Nothin' to eat inside there yet?" and burly Jake backed by the other five hands, lumbered wonderingly into the kitchen. "No fire in the stove! Wher's the wimmen folks? What's up?"

Johnson started, then drew himself together huriedly. "Just run up to Mary Brown's for a day or two," he answered gruffly. "The visit was—er—pretty sudden, an' they had no time to git dinner. But I guess we can patch up one among us, eh Jake?" —trying to pass it off lightly. "Git jest as good dinner's the wimmen folks, an' a might sight quicker."

"Course we can," cried Jake, with alacrity, and pleased at the thought of so novel a task, "an' one we'll like better, too. Men folks know jest what men folks want. We'll have inyuns an' tatters, an' coflee that's strong enough to taste."

"An' biled cabbage," reminded one of the men earnestly.

"An' tripe," "An' baked beans," "An' greeen corn," chimed in the others, moistening their lips in anticipation of favorite dishes.

"Come, come, we can't have everything at once," expostulated Johnson ompatiently. "Here, pitch in, all of you, an' help what you can. The field's got to be hoed 'fore dark."

But in spite of the superabundance of assistance the dinner progressed slowly and it was 2 o'clock before the men drew their chairs to the table, red faced and fuming at the stupidity of each other. And in spite of the fact that the dinner was of their own cooking they tasted suspiciously of one dish and another and pushed their plates back, then tried again, grimacing and scowling, and at last rose sullenly and shuffleed from the room.

Johnson glanced at his watch as the last disappeared. He had work of importance to look after, so the dishes and food were left on the table and cooking utensils on the stove and floor, wherever they had been dropped in the hurry. It would be time enough enough to attend to them when he returned.

But long before that the sun had fallen behind the apple ochard and the kitchen was so full of shadows as to call for artificial light. He was tired and cross, and this did not facilitate dish washing and supper getting. When the men came in from their late chores he was bristling with angry impatience, and his face and clothing were spotted with the grease and soot of reckless contact with dish water and cooking uuten sils. Again they were called on for assistance, and again—after some of the unsatisfactory supper was forced down—the dishes and food were left upon the table to await the time when it would be necessary to remove them

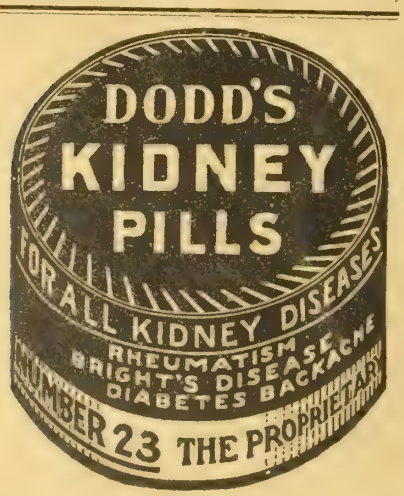
One day longer the "menfolks'" cooking was persisted in, but by that time the pleasant kitchen had been transformed from a place of orderliness to a den of chaotic neglect. No dishes had been washed and many conflicting foods had been cookeed on the same utensil without the separating use of soap and water. Jake was fond of "iniyuns an' taters," but decided he did not care to have them flavored with chocolate, while the lovers of "biled" cabbage were equally firm against their favorite dishes being disguised with the odors of ooking which hd gone before. Moreover, Jake declared that all the bies of the whole county had come to feast with them and that he, for one, was going to take his meals henceforth over at Neighbor Gould's. Bob and another man agreed with Jake, while the other two guessed they could pick up a few days' living in the apple orchard and off the huckleberry and blackberry bushes. But they were agreed with the rest in having no more to do with menfolks' cooking.

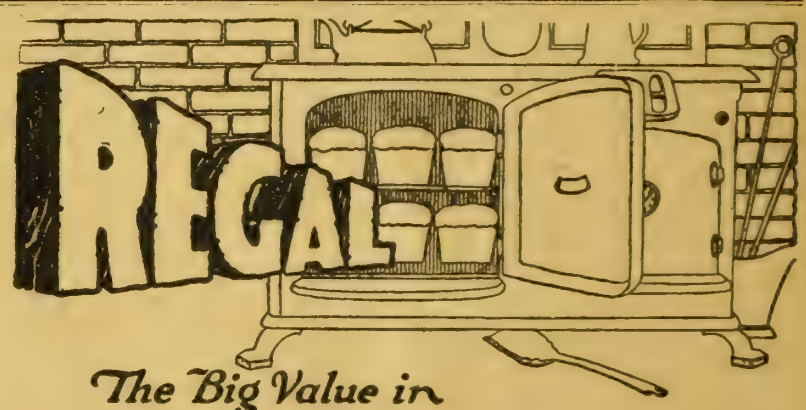
So the next morning Jake was sent unceremoniously to Mary Brown's with orders to bring the womenfolk's home, whether or no.

"Jest tell 'em we're too busy with the hoein' now to bother with cookin'," Johnson snarled. "If 'twas any other time we wouldn't care a continental whether they come or stayed. It's jest their aggravatin' way to pick out a time like this."

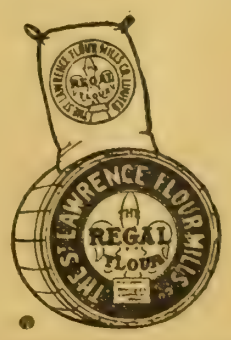
But when Jake retuned with the informotion that Mary Brown had neither seen nor heard of them his anger gave place to wonder and then to dismay. What was he to do? In the end he sent for one of the Gould girls, and after two days sent her back and tried one of the Cady girls. But she was no better. Against his will he compared their work and his wife's. Then he tried it again himself, but with less satisfaction than before. In a week he was so far humbled as to acknowledge to Jake in private that he would rather hoe corn sixteen hours a day than prepare a single meal of victuals.

"Then why don't you git the womenfolks back?" Jake demanded. "We can't stand this much longer. If ye don't do something mighty quick this farm's bound to go to everlastin'





The Big Value in
FLOUR



OF all the products of the oven, there is none so important as a good loaf of bread. This test of "REGAL" has established its reputation as the big value in flour.

THE ST. LAWRENCE FLOUR MILLS CO.
Limited
MONTREAL

ruin. That's my say."

Another two days brought Johnson to the limit of his endurance, and then came relief in the shape of a letter from the city, which read:

"Dear Husband: "We've been havin' a pretty good time, but things here do cost awful. I wanted to buy some new dresses an' books for Mary, but can't for we'll have only jest enough to pay for our fare home after stayin' here another week."

"Another week!" groaend Johnson. "How'll we ever get through it?"

Then he continued. "We tried to find that machinee place that humbugged you, but couldn't. It's a fraud, jest as I thought. I hired a lawyer an' he hunted round some an' went to the post office an' got hold of a lot of letters. One of 'em was from you, which you must have sent after we left. It had $1,500 in it. But don't fret. We've got it back all safe."

He drew a quick hard breath and then read the short postcript. "I forgot to say that the lawyer cost me $5. Don't forget the things I wrote you about. We'll be home a week from Saturday. Good bye."

He dropped the letter and leaned his head on his hands. Thinking was something unusual to him, but this time it was to good purpose, for it ended in his writing, in a cramped, laborious hand:

"Dear Wife: I take my pen in hand to answer your welcome letter. We-'ve been havin' an awful time an' want you to come beack jest as soon as you can. All the men will be glad to taste your cookin' again and I won't never say nothin' more about it bein' easy. I'm sorry 'bout Mary's dresses. You better take a hundred out of that fifteen hundred an' buy whatever you want. An' I'm free to say I think it a good ideer to have a hired girl. One of the Gould or Cady girls might do with some one to go ahead. But you jest pick out whoever you want. I don't want anything more to do with the kitchen. Only come home soon."

STAINS

Greease Stain.—Wash in warm water and soap. If dust collected on stain, on cotton or linen, use javelle water; if on wool or delicate fabrics, use ether, alcohol, benzine.

Ink Stain.—Use potassium permanganate and oxalic acid; or salts of lemon, or peroxide or sour or butter milk.

Printer's Ink.—Removed by Hudrochloric Acid and borax added in water. Simpler methods, citric acid and cream of tartar, salts of lemon or lemon juice and salt.

Machine Oil.—Remove by washing in soap and cold water, or rub it with turpentine until it disappears.

Medicine Stains: Soak in alcohol. Alcohol is solvent for most drugs.

Mildew.—When fresh, wash in cold water; if not, use Permanganate and oxalic acid, or javelle water; wash.

Paraffin.—Warm iron and blotting paper; or rub with benzine, having blotting paper underneath.

Perspiration.—Wash in warm water and soap, then bleach in sunshine; or use javelle; or bleach if in cotton or linen; is silk or wool, use sodium hydrosulphate.

Pitch or Resin.—Benzine is best.

Scorch Stain.—Hopeless on silk or wool; but on cotton or linen hang in sunlight or wash in warm water and hang in sunlight.

Spanking Doesn't Cure!

Don't think children can be cured of bed-wetting by spanking them. The trouble is constitutional, the child cannot help it. I will send **FREE** to any mother my successful home treatment, with full instructions. If your children trouble you in this way, send no money, but write me to-day. My treatment is highly recommended to adults troubled with urine difficulties by day or night. Write for free trial treatment.

Mrs. M. Summers
BOX 309 WINDSOR, Ontario

"Congratulations, My Daughter, You Are Looking Fine"

"AND why shouldn't I look well after using Dr. Chase's Nerve Food?"

"Is that what has made such a change in your appearance? You were so pale and thin, I was rather anxious about your health."

"Why, I have gained fifteen pounds, and I feel so well, too."

"And you have such a good, healthy color. Your blood must be rich and red."

"I knew you were suspicious of anything that our doctor did not prescribe, so I said nothing about it to you."

"Well, I will not have any doubts about Dr. Chase's Nerve Food in the future after what a healthy looking girl it has made of you."

"Yes, and I feel so differently, too. I was so nervous and irritable that I was very easily annoyed and upset. Then I would have those fearful nervous headaches. But, thank goodness, that is all over, and I know what to give credit to for the change."

"I am very glad you are so well again and think Dr. Chase's Nerve Food a very valuable medicine, since it has done you so much good."

Miss Gertrude M. Burrell, Clementsport, N.S., writes:

"I have used Dr. Chase's Nerve Food with splendid results. For a number of years I was afflicted with nervousness, and six years ago had a complete breakdown. I had no control of my nerves and had terrible hysterical spells. I could not sleep, had night sweats, awful dreams and nightmare. My physician gave me medicine to put me to sleep every night, and another kind to take every two hours during the day, but it did not seem to do me any good only while I was taking it. I never really expected to get well. Reading about Dr. Chase's Nerve Food one day, I gave it a trial, and the results from the first box encouraged me, so I continued its use, and found my nerves getting steady and stronger. My appetite improved and I gained in strength, ambition and flesh. Now I am able to do considerable work, and can highly recommend Dr. Chase's Nerve Food as a good tonic for the whole system."

(Alonzo W. Daniels, J.P., says: "It gives me great satisfaction to vouch for the testimony of this young lady and the benefit she has received from your wonderful discovery.")

Dr. Chase's Nerve Food, 50 cents a box, 6 for $2.75, all dealers, or Edmanson, Bates & Co., Ltd., Toronto. On every box of the genuine you will find the portrait and signature of A. W. Chase, M.D., the famous Receipt Book author.

Shoe Polish.—Black—rub with lard or grease, wash in warm water and soap. Bronze—use HCL. Tan—oxalic acid, wash, ammonia, wash.

Varnish.—Wet stain with turpentine and alcohol; sponge with vinegar to restore color removed by alcohol.

Wax.—Absorbent paper and warm iron.

Wine.—Cover immediately with salt and boiling water or pour boiling milk over it.

Acid.—Ammonia, then sponge with water.

Analine Dye.—Use javelle water, then boiling water, and rinse well.

Blood.—Warm water, or warm water and ammonia and naptha soap, or raw starch, on delicate fabrics.

Blueing.—Boiling water or javelle water.

Brass.—Rub with lard, then wash.

Chocolate.—Borax and cold water.

Coffee.—Boiling water.

Cream.—Cold water, then water and soap.

Fruit.—Boiling water as for coffee. Borax will assist. For cottons and linens, use javelle solution and boiling water in equal quantities. For woolens, silks and colors, borax and ammonia may be used.

Glue.—Warm water will usually dissolve glue; if not, apply vinegar with cloth.

Grass.—Wash fresh stain with cold water; rub with molasses, let stand a few minutes and wash with warm water. Alcohol and ether will dissolve the green coloring matter when material can not be washed.

VOL-PEEK
Mends Pots & Pans
Cooking utensils, Graniteware, Aluminum, Enamelledware, Tin, Copper, Brass, Iron, etc. Easy to use, no tools required, ready for use in 2 minutes. Saves a pot for 2½ a cent. 15 cents at your Dealer, or postpaid by Vol-Peek, B-Co., Box 1034, Montreal

DIARRHOEA
COLIC
AND
CRAMPS.

These and many other bowel complaints such as dysentery, cholera morbus, cholera infantum, or any other looseness of the bowels, may be quickly relieved by a few doses of Dr. Fowler's Extract of Wild Strawberry. It is without a doubt one of the safest and most reliable remedies in existence. It has been a household remedy for the past 74 years.

Its effects are instantaneous, and it does not leave the bowels in a constipated condition

Mr Joseph Dale, 730 10th St., Saskatoon, Sask., writes:—"Having used Dr. Fowler's Extract of Wild Strawberry for many years, I am in a position to strongly recommend it for diarrhoea, colic, and cramps. In violent cases of alkali water poisoning it has proved a remedy of superlative quality, and many a time some poor harvester or laborer has blessed me for the administration of a dose of this valuable and highly efficient remedy. I would advise every homesteader and thresherman to keep a bottle on hand."

If some unscrupulous druggist tries to talk you into taking some other preparation when you ask for "Dr Fowler's" refuse to take it, as these no-name, no-reputation substitutes may be dangerous to your health. The price of the genuine is 35c a bottle, and put up only by The T. Milburn Co., Limited, Toronto, Ont.

BRINE CURING MEATS AND CORNING BEEF

Bine-cured meats are beset for farm use, for the reason that a suitable place for dry curing is not usually obtainable. It is also less trouble to pack the met in a barrel and pour on a brine than to go over it three or four times to rubu in the salt. The brining method also gives better protection from insects and vermin. Trouble is somtiimes experienced in keeping brine, but if pure water is used and directions followed in making the brine there should be no difficulty n keeping it for a reasonable length of time. During warm weather brine should be closely watched. If it becomes "ropy" likie syrup it should be boiled, or new brine made. A cool, moist cellar is the best place for brine curing. Dry curing may be done successfully in a cellar also, though even more moisture is needed to effect a thorough cure. The cellar should be dark and tight enough to prevent flies and vermin from damaging the meat.

Corned Beef

The pieces commonly used for cornnig are the plate, rump, cross ribs, and brisket, or in other words, the cheaper cuts of meat. The loin, ribs, and other fancy cuts are more often used fresh, and, since there is more or less waste of nutrients in corning, this is well. The pieces for corning should be cut into convenient-sized joints, say five or six inches square. It should be the aim to cut them all about the same thickness, so that they will make a neven layer in the barrel.

Meat from fat animals makes choicer corned beeef than that from poor animals. When the meat is thoroughly cooled, it should be corned as soon as possibe, as any decay in the meat is likely to spoil the brine during the corning process. Under no circumstances should the meat be brined while it is frozen. Weigh out the meat and allow eight pounds of salt to each 100 lbs.; sprinkle a layer of salt one-quarter of an inch in depth over the bottom of the barrel; pack in as closely as possble the cuts of the meat, making a layer five or six inches in thickness; then put on a layer of salt, following that with another layer of meat; repeat until the meat and salt have all been packed in the barrel, care being used to reserve salt enough for a good layer over the top.. After the pacakge has stood over night, add, for every 100 pounds of meat, four pounds of sugar, two ounces of baking soda, and four ounces of saltpeter dissolved in a gallon of tepid water. Three gallons more of water should be sufficient to cover this quantity. In case more or less than 100 pounds of meat is to be corned, make the brine in the proportion given. A loose board cover, weighted down with a heavy stone or piece of iron should be put on the meat to keep all of it under the brine. In case any should project, rust would start and the brine would be spoilt in a short time.

It is not necessary to boil the brine except in warm weather. If the meat has been corned during the winter and must be kept into the summer season, it would be well to watch the brine closely during the spring, as it is more likely to spoil at that time than any other season. If the brine appears to be ropy or does not drip freely from the finger immersed and lifted, it should be turned off and new brine added, after carefully washing the meat. The sugar or mollasses in the brine has a tendency to ferment, and, unless kept in a cool place, there is sometimes trouble from this source. The meat should be kept in brine 28 to 40 days to secure thorough corning.

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Keeps your house full of pure, warm air.
Uses very little fuel, is easy to operate and does away with all heating worries.
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THE ENTERPRISE FOUNDRY CO
SACKVILLE N.B

SOLD BY LEADING DEALERS EVERYWHERE

HANDICAPPED CHILDREN

Children who stammer, children who squint, children who have any other remediable defect, are chilrden whose parents should at once act to correct that defect. Otherwise they will be allowing their children to grow to manhood and womanhood cruelly and needlessly handicapped for life's battles.

What such defects may involve is strikingly indicated by the pathetic lament of an adult stammerer:

"I realize that I am abnormally sensitive, diffident, self-conscious, taciturn, and seclusive. But how could I help being thus?

"People have treated me as an inferior from childhood, when I first began to stammer. They have continually wounded me, they have forced me to be self-conscious, they have made me taciturn and seclusive.

"My school days were an agony because of the way playmates teased and mocked me. Even the teacher found it hard to be patient with me. I realized this, and it did not improve the state of my mind.

"If I avoid people, is it to be wondered ? At best it is hard for me to talk, and odubly hard when people stare at me and snap at me, as they often do when I am obliged to ask questions.

"No doubt I should show more courcourage. No doubt I should control my feelings better than I do. I admit all this. But is it possible when all the while I am made to feel that I am looked upon as a strange, exceptional being?

"Do not blame me for my shorcomings. Blame society, which has forced me to take refuge within myself."

The blame, in fact, should go back to the parents who thoughtlessly permit the continuance of conditions which might be remedied if taken in hand soon enough.

Themselves quite free from speech, eye, or other defect, and perhaps of a stolid temperament, they do not sufficiently appreciate the mental suffering which by their negligence they are imposing on their children.

Or it may be that they take it for granted that nothing can be done to correct the defect they deplore.

"The poor child will have to put up with it ," they say to themselves. "It is something that cannot be helped."

If the defect really is irremediable, their attitude is the same one. And they cannot be too zealous in training their unfortunate child to bear its burden patiently. But first they should make absolutely sure it is a burden which must be borne.

Modern medical science can do some wonderful things, even as regards seemingly hopeless defects. For the sake of the child's later happiness and success it should, therefore, be promptly given the benefit of a careful medical examination.—By H. Addington Bruce.

MINARD'S
"KING OF PAIN"
LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

THE BANK'S POSITION

As at 30th November, 1918

Paid-up Capital - - -	$15,000,000
Reserve Fund - - -	15,000,000
Loans - - - -	2[illegible],151,984
Deposits - - - -	353,158,816
Total Assets - - - -	440,310,703

THE CANADIAN BANK OF COMMERCE

5RA

IS YOUR HEART WEAK?

TEST IT OUT.

The way to find out if your heart is weak is to put your finger on your pulse.

The average heart of the average man or woman should beat 70 times to the minute. If it beats much below or above this average there is something wrong. There may be palpitation, shooting pains through the heart, sleeplessness, shortness of breath, faint and dizzy spells, waking up in the night as if smothering, a feeling of oppression, the feet and hands become clammy and cold, a bluish tinge appears about the lips, the blood rushes to the head, or there is a sensation of "pins and needles". If any of these symptoms arise take Milburn's Heart and Nerve Pills, and you will find they will fix up the weak heart in no time. They do this by regulating the heart's action and invigorating the nerves.

Milburn's Heart and Nerve Pills are 50c. a box at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

LT.-COL. W. J. OSBORNE

after four years of war service in England, Belgium, France and Canada, has again taken over the management of the

Fredericton Business College

FREDERICTON, N. B.

The college will be kept open all through the summer.

FALL TERM BEGINS SEPTEMBER 2nd

Write for full particulars.

No Summer Vacation

this year, as some of our students cannot afford to lose time.

Our classes have been considerably crowded, but, vacancies now occuring give a chance for new students who can enter at any time.

Tuition Rates, mailed to any address.

S. Kerr, Principal.

Launching Out In Life

is what you'll have to. Are you ready for the launch? If you would reach the harbor of success, you must first launch on the sea of preparation. It will pay you to get this preparation at the

SUCCESS BUSINESS COLLEGE, Ltd.

The Accredited School

Moncton, N. B. Truro, N. S.

Advertise in the Farmer

DAILY CARE OF HAIR

The hair needs a certain amount of brushing—not the hundred strokes once considered vitally necessary, but only enough to smooth out the looser snarls and to induce a fresh supply of oil into the hair. The best sort of brush is one of stiff bristles mounted on a rubber cushion — there are several makes like this—for the cushion gives as the bristles are pulled through the hair, and the pressure on the scalp is never harsh in one spot. Such brushes are easily kept clean, too.

Following a few brisk strokes with the brush, the hair can be combed and arranged for the day. At night, it should be shaken down, three times a week a tonic should be massaged into it, every night the scalp should be massaged with the fingers. This is done by moving the scalp in small circles over the skull, to loosen the skin and allow a greater flow of blood to the roots. Then hanks of hair should be prasped in the hand and pulled from the head—literally pulled until the scalp is drawn a little way from the bone. This weeds out the weak hairs, for new strong ones to grow in from their roots, and it brings the blood into the scalp. The hair is brushed then, ending with a few strokes of the brush with a piece of absorbent cotton over the bristles. The idea here is to wipe off the dust from the hairs themselves and to give it the much desired gloss. I have found using the absorbent cotton so as effective as using a bottled hair polish.

DON'T LET YOURSELF GO TO SEED

The days when the woman of forty was considered passe are the days of long ago. The woman of forty in the summer of 1919 can look like a woman of thirty if she wants to. She need not go to a beauty specialist to accomplish this camouflage if she will spend a little time on herself every day, using the many little home helps that are within the purse possibilities of every woman.

So many women ask, "Is powder harmful o the skin?" Most assuredly it is not harmful if you get a standard make and know how to use it properly. Surely it is better to see a woman with soft, velvety skin rather than one whose face is shining in the summer sun. But before applying powder, rub a good cold cream into the skin. A good cold cream means one made without animal fat, an ingredient which induces a growth of hair on the face. Select a cold cream made from vegetable oils. Ask your druggist for a cream WITHOUT lanolin in it. That is sheep,s fat, found in many of the poorer grades. Having rubbed the cream into the pores of the face. wipe off well with a soft, old towel, then dust the face with powder, using a shade that suits your complexion. Face-powders come in four shades, white pink, Rachel, and natural. At night, before retiring, wash the face with warm water and a pure soap, thus opening the pores and givink the skin a chance to "breathe."

A Cure for Sunburn

As a cure for sunburn the use of powder is also invaluable. If you have acquired a coat of burn that is going to smart, do not wash with water, no matter how dirty the face may be. First wash with witch-hazel to get the dirt off. Then apply a coat of vanshing cream and finally dust with a good talcum powder. If you do this, you will have no bad effects from the longest and hardest automobile rides you've ever taken. If you give your face this little bit of care when you come from bathing in salt water, your skin will be soft and smooth. But if you let the salt water dry on the face and then go into the sun, your pores will become coarse, and your skin will bt rough.

Many women prefer a bottled lotion which is healing in cases of sunburn. This to must contain non-hair growing oils.

Here isa little secret I learned from a French beauty specialist who made a big charge for a simple remedy any woman can appy at home. So many women have a little dark fuzz on the upper lip, and if you keep pulling out these hairs they only come back— oftne times at the rate of two to one.

There is but one way to get rid of these hairs permanently, and that is by the electric needle, which should only be handled by experts . But it is possible to bleach them out so that they will barely show.

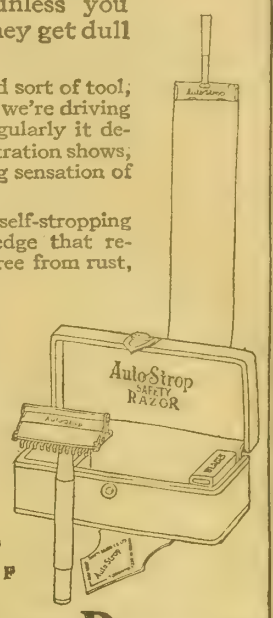
Mix an equal quantity of ordinary household ammonia and peroxide in a small bottle. Now take a piece of absorbent cotton in a pair of tweezers, dip in thic mixture, and apply to the upper lip, meanwhile holding the nose with the other hand, so that the fumes will not bother you. It will evaporate in a moment and you can breathe comfortably through your mouth. Repeat this application every night and morning for a week and you will be delighted with the result. When the lips get dark again repeat the treatment—it is perfectly harmless.—By Alice Lane.

Do you shave with a saw?

THAT question may sound funny, but you know how it is with tools; unless you hone or sharpen them regularly they get dull and lose their cutting edge.

After all, a razor is a tool. A very refined sort of tool; it is true, but still a tool. And the point we're driving at is unless a razor blade is stropped regularly it develops an edge very like a saw, as the illustration shows, and causes that pulling and after-smarting sensation of which you complain.

Not so with the AutoStrop Razor. For the self-stropping feature, you see, reforms the saw-like edge that results from shaving, it keeps the blade free from rust, and it provides you with a keen-edged blade for every shave. The beauty of it is you don't have to remove the blade from the holder to sharpen it, nor do you have to take the AutoStrop Razor apart to clean it. From first to last—stropping, shaving and cleaning—the blade remains in the razor.



Razor, strop and 12 blades complete, with money-back guarantee, $5.

AUTOSTROP SAFETY RAZOR CO., LIMITED
AutoStrop Building, Toronto, Canada

AutoStrop Safety Razor

Fresh, rich, full-flavored tea
—the same every time

RED ROSE TEA "is good tea"

Sold only in sealed packages

123

HINTS FOR MOTORISTS

by ALBERT L. CLOUGH

Editor Motor Service Bureau Review of Reviews...

UNDILUTED CHARGES FOR THE ENGINE

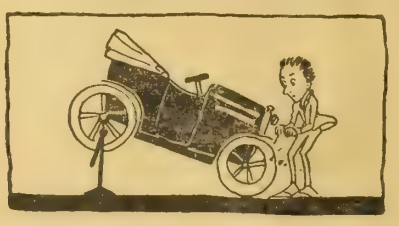
If Your Engine Misses When Idling, Look For Air Leaks

When the piston of an engine starts downward on the intake stroke, it creates a partial vacuum in the cylinder space above it and the full atmospheric pressure, acting at the carburetor air intake, pushes carburetted air through the carburetor, intake piping and inlet valve into the cylinder. This is the way the cylinder gets its charges. The supposition is that nothing enters the cylinder except by this path—air through the carburetor air intake and vaporized gasoline through its fuel nozzle. If gas enters the cylinder in any other way, carburation is interferred with, with a tendency toward a diluted or polluted mixture and perfect engine operation is prevented. The following are some of the points through which stray air or exhaust gas may accidentally enter the cylinder if anything is wrong: A badly seated carburetor auxiliary air valve; a throttle valve stem worn in its bearing; an imperfect gasket between the carburetor and intake pipe; a leaky manifold branch connection to the intake port; a defect in a manifold casting; an intake valve stem which has worn loose in its guide, leaving a free passage from outside air between these parts; a leaky cylinder head gasket; a bad gasket under a valve chamber cap; a spark-plug leaky around its shell or at its core packing; a badly seated valve cage or a priming cock with leaky valve or threads. At all such points the outside air is always ready to crowd in, when there is a partial vacuum in the cylinder. Exhause gas from the crank case may enter to pollute the incoming charge past ill fitting piston rings and undersize pistons or from the exhaust piping past a badly seatng exhaust valve. At full throttle, the cylinder vacuum is slight and the leak areas are small compared with the intake pipe area, thus minimizing the stray air that enters, but at nearly closed throttle the cylnder vacuum is high and the amount of air entering through leaks may become large as compared with the volume of charge, diluting the latter until its combustibility becomes uncertain. In fact, the most common cause of irregular operation, at idle or very low spreads, is air leaks, and engines that have been long neglected are very likely to operate "raggedly" on this account.

TO TELL WHEN VALVES ARE CLOSED

A. M .A. asks: (1) How can I tell when both valves of a cylinder are closed so that, when I put in carbon remover, it will not run out? (2) Why is it that, in cold weather, I can hardly crank over my Ford engine unless I jack up the rear wheels?

Answer: (1) When a valve is closed, it can usually be rotated rather easily by turning its stem with the



fingers. If both valves of a cylinder can thus be turned, they are both of them free from their push rods and thus in their closed position. Another method of determining this is as follows: Remove the tmer cover and note which contact the roller is on. The cylinder that is sparker from this timer contact has its valves closed. (2. Your clutch is dragging and, when you crank the engine, the whole car would move if the brakes were not acting. When you jack up the wheels, the engine and transmission can be turned over wtihout moving the car. This dragging may be due to faulty high-speed clutch adjustment, which can be corrected by changing the setting of the clutch lever screw, or it may eb caused by the use of oil, which becomes too sticky when cold, so that the clutch plates cling to each other, even when in the released position.

VOLTAGE OF FORD MAGNETO

W. A. B. asks: How many volts does a Ford magneto develop and is an alternating current voltmeter the instrument to measure it with?

Answer: The voltage generated increases with the engine speed and, according to a recently published curve,

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7A

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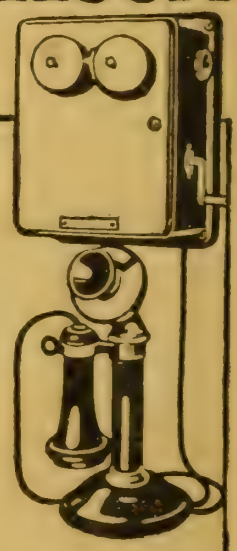
Stromberg-Carlson Telephones



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Enable you to talk and hear easily no matter what the distance. Are equipped with the big five bar generators that are bound to ring every bell on the line every time.

Both Desk and Wall Telephones have the same standard equipment and are equally strong and durable.

We illustrate the simple, convenient desk telephone which can be moved about the room and so is always at your elbow ready to answer.

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It describes all Stromberg Apparatus. Explains how to install and take care of your telephones. Tells how to organize and equip a party line among your neighbors and explains just why the experience gained in building over 2,500-000 Stromberg Telephones guarantees the kind of service you need.

Send for this Free Book and put your problems up to our engineers—they will plan your system and furnish estimates without cost.

Stocks carried at Toronto, Regina and Seattle.

Stromberg Carlson Telephone Mfg. Co.

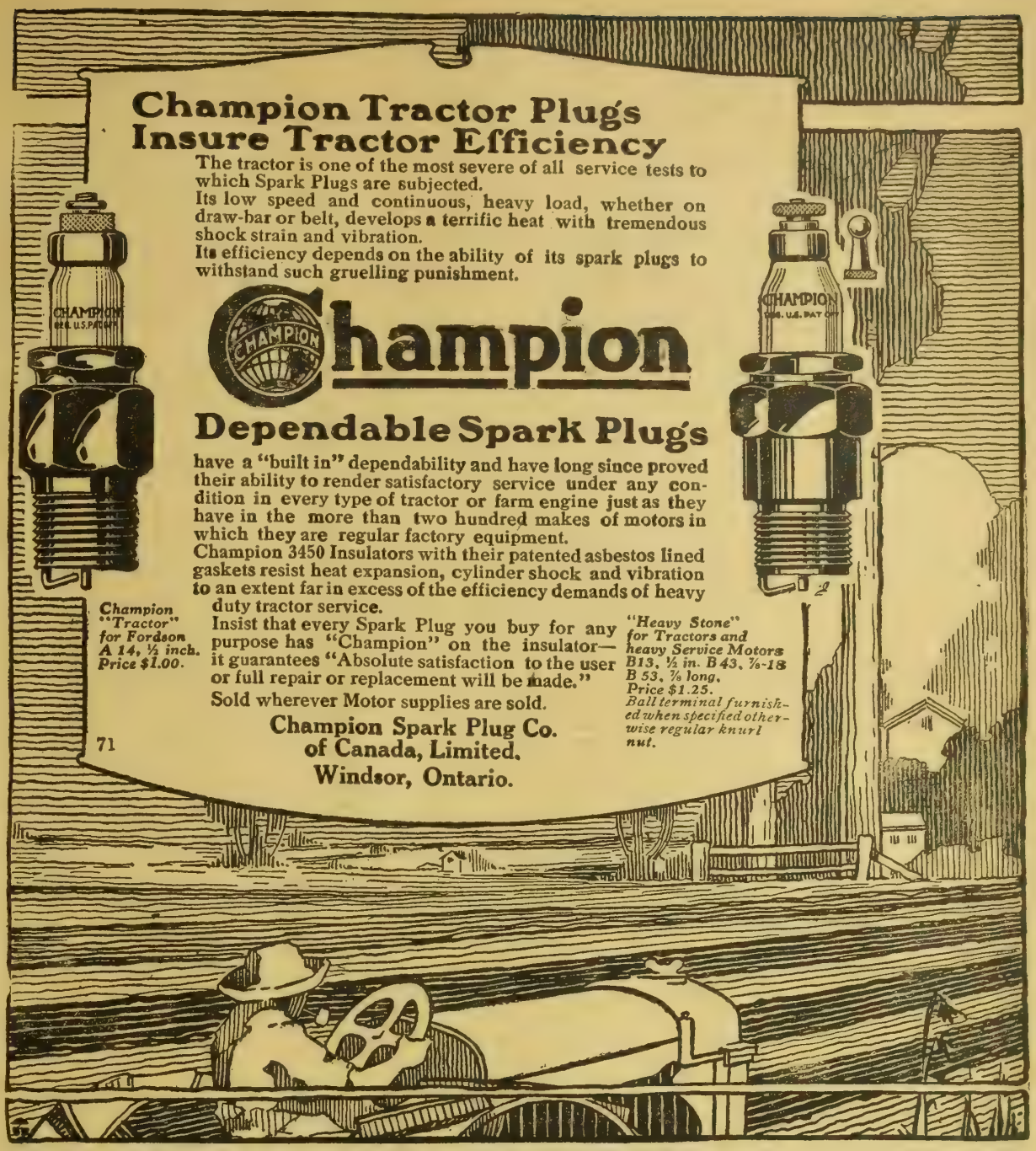
10 FRONT ST. EAST TORONTO, CANADA

it is about 15 at 500 r. p. m., 24 at 1000 r. p. m., and 30 at 1500 r. p. m. These figures probably refer to the votlage when the magneto is furnishing ignition current only, or at least when not heavily loaded, as with the headlights. The headlights are fitted with 8-9 volt bulbs and are wired in series, so it is evidently expected that the effective voltage will be 16-18 at the ordinary engine speed. With increasing loads the effective voltage is considerably less than the total voltage generated, on account of the higher resistance caused by the increased frequency of alternation, as speed increases. An alternating current voltmeter containing no iron, would be the best instrument. Many commercial voltmeters contain iron and are fitted for giving accurate results only when used within a narrower range of frequency than that at which this magneto operates.

UNINTENTIONAL "AUXILIARY AIR" .—AIR LEAKS LEAD TO WASTE OF FUEL

So long as an engine is not taken

apart, the air leaks which develop are mainly those resulting from wear of parts, of which the most common and most likely to escape early notice is the wearing of the inlet valve stems in their guides. So much air often comes to enter in this way as to cause an engine to miss on certain cylinders or even to stall, if slowed down very low. Reaming out the guides and putting in new valves with oversize stems, that fit properly, is the usual remedy. If the throttle stem wears very loose, replacement of certain carburetor parts or a new carburetor will restore normal conditions at this point. When the pistons become very leaky or the exhaust valves loose their tightness, the remedy is the same as that for poor compression at these points. There is not much likelihood of a leak developing in the intake system or parts connected with the cylinder head, unless an engine is disassembled and puut together carelessly. Occasionally, a manifold branch connection or the carburetor flange connection may jar loose, but this very rare. After an overhauling, however, almost any kind of an air leak, even to one sufficient to prevent the engine's being started may be discovered, these usually being due to faulty gaskets or otherwise imperfect joits at such points as the carburetor flange connection, manifold branches, valve chamber caps and cylinder head. In case an air leak is suspected, if a little gasoline is squirted about the supposed point of entrance, with the engine running, the fluid will usually disappear very rapidly and skips from too lean a mixture will temporarily cease. As above stated, air leaks are especially bothersome when an engine is fully throttled down. Their effect can be overcome by increasing the amount of gasoline delivered by the carburetor, but when this is done, the result is to make a mixture wastefully rich at larger throttle openings, at least with very many types of carburetor. This is perhaps the worst result of air leaks and the low fuel economy of many old or neglected engines is attributable to this cause, the temptation to secure regular low speed operation by feeding excess gasoline, being too strong to be resisted. While the effect of one small air leak may not be sufficient materially to affect engine operation, the combined effect of many is serious and the way to avoid this is to stop all such leaks as soon as they are discovered, or the flexibility of the engine, at the lower end of its speed range, will be greatly reduced.


Champion Tractor Plugs Insure Tractor Efficiency
The tractor is one of the most severe of all service tests to which Spark Plugs are subjected.
Its low speed and continuous, heavy load, whether on draw-bar or belt, develops a terrific heat with tremendous shock strain and vibration.
Its efficiency depends on the ability of its spark plugs to withstand such gruelling punishment.
CHAMPION
Champion
Dependable Spark Plugs
have a "built in" dependability and have long since proved their ability to render satisfactory service under any condition in every type of tractor or farm engine just as they have in the more than two hundred makes of motors in which they are regular factory equipment.
Champion 3450 Insulators with their patented asbestos lined gaskets resist heat expansion, cylinder shock and vibration to an extent far in excess of the efficiency demands of heavy duty tractor service.
Insist that every Spark Plug you buy for any purpose has "Champion" on the insulator—it guarantees "Absolute satisfaction to the user or full repair or replacement will be made."
Sold wherever Motor supplies are sold.
Champion Spark Plug Co. of Canada, Limited. Windsor, Ontario.
Champion "Tractor" for Fordson A 14, ½ inch. Price $1.00.
"Heavy Stone" for Tractors and heavy Service Motors B13, ½ in. B 43, ⅞-18 B 53, ⅞ long. Price $1.25. Ball terminal furnished when specified otherwise regular knurl nut.
71

CLUTCH INQUIRIES

T. G. W. writes: The clutch of my ————car makes a ringing sound, when it is thrown out. Why is this and can it be prevented? Also, when it is disengaged, as in going down hill, and the car hits a "bump," I sometimes hear a sound as if some heavy part were loose in the clutch and striking something. What causes this?

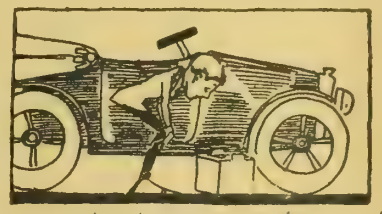
Answer: This clutch consists of two sets of saw steel discs with cork inserts. Saw steel is a very resonant metal, but as long as the discs are pressed together in engagement, they

are prevented from vibrating. When, however, the discs are slightly separated by disengagement, plates of one set occasionally "tick" against or lightly touch plates of the other set and, being free to vibrate, give out the characteristic ring of the metal. We doubt if this can be prevented. It is not good practice to coast with the clutch disengaged. It is not clear how the blow-like sound you hear can be produced by the clutch. It may be due to looseness in the torque member connection to the axle housing, the noise being transmitted forward along the drive shaft, so that it seems to come from the cluutch. Play at the torque rod end makes little ncise, when power is being applied, but often is pronounced when the clutch is out and the torque system is slack.

HYDROMETER MAY BE INACCURATE

W. T. writes: My battery cranks the engine finely and keeps the lights burning at full brilliancy, but no matter how much I charge it, I cannot make the solution in the cells test more than 1,270, while the instruction book says that it should test 1,280 at least. What does this indicate?

Answer: It may be that your hydrometer reads lower than it should and we suggest that you borrow one of proved accuracy and check up yours by it. Even if you find that your hydrometer is correct, there is



no occasion to worry, so long as the several cells of your battery test about alike and you continue to obtain good results. Most likely your battery has lost some acid by "spraying" or was set up with electrolyte that was slightly weaker than normal. If, when charging at the final (minimum rate), each of your cells shows 2.5 volts you can safely increase the acid in the electrolyte so as to make it test 1285 or 1280.

PILES Do not suffer another day with Itching, Bleeding, or Protruding Piles. No surgical operation required. Dr. Chase's Ointment will relieve you at once and as certainly cure you. 60c. a box; all dealers, or Edmanson, Bates & Co., Limited, Toronto. Sample box free if you mention this paper and enclose 2c. stamp to pay postage.

MARKETS.

CHARLOTTETOWN

Beef, Ox, carcass, 20c to 22c; Cow, carcass, 18c to 20c.
Veal, carcase, 14c to 16c.
Hogs, Live, selects, 19½c.
Lamb, 30c to 35c carcase.
Mutton, 18c to 20c, carcase.
Beef Hides, 17c.
Sheep Skins, slots, 40c, pelts, $3..00 to $5.00.
Calf Skins, 35c lb.
Potatoes, 80c to 90c per bushel.
Carrots, none.
Turnips, none.
Parsnips, none.
Oats, 80c to 82c.
Cornmeal, $4.00 to $4.50 per bag.
Bran, $2.35 to $2.45 per bag.
Oatmeal, $5.50 per bag.
Middlings, $2.50 to $2.60 per bag.
Cotton Seed Meal, none.
Oil Cake, $3.60 to $3.75 per bag.
Buckwheat, none.
Ontario Flour, $12.00 to $12.25 per barrel.
Manitoba Flour, $12.25 to $12.50 per barrel.
Chickens, none.
Fowl, none.
Turkeys, none.
Geese, none.
Butter, Creamery, 54c to 58c.
Butter, Dairy, 48c to 52c.
Cheese, none ready yea.
Hay, pressed, $30.00 per ton.
Straw, pressed, $12.00 per ton.
Eggs, 40c per dozen.

THE PROVISION MARKET

Montreal, June 23.—A more settled feeling prevailed in the live hog situation today owing to the fact that the labor strike at the packing houses here has been practically settled, but on account of the above the offerings of hogs today were smaller than usual, and this, coupled with the stronger undertone to the Toronto market on Tuesday, tended to keep prices very firm. The demand from packers for what stock was available was good and a fairly active trade was done in selected lots at $22.50 to $22.75 per 100 lbs. weighed off cars. A steady trade continues to be done in dressed hogs and as supplies were none too large to meet the requirements, the tone of the market is stronger, with sales of city abattoir fresh-killed stock in a jobbing way at $30 to $30.50 and in some instances as high as $31 was realized per 100 lbs. In the Toronto market yesterday live hogs were quoted at $22.50 to $23 per 100 lbs. weighed off cars and at $22.25 to $22.75 fed and watered.

Owing to the extreme heat prevailing of late, the consumption of all lines of smoked meats has steadily increased and this, coupled with the fact that supplies on spot have been none to large to meet the requirements on account of the smaller production, due to the trouble at the packing houses, a firmer feeling has prevailed in the market, but there is no actual change in prices to note as yet. The demand for domestic consumption is good and an active trade is reported in a jobbing way, with sales of 8 to 10 lb. hams at 41c to 42c per lb., 12 to 15 lbs. at 39c and 40c and heavier weights at 37c to 38c, while breakfast bacon sold at 44c to 45c, Windsor selected bacon at 47c to 48c and Windsor boneless bacon at 49c to 50c. A firm feeling prevails in the market for barreled pork, but the demand is quiet, with Canadian shortcut in a jobbing way quoted at $58 to $60 per barrel.

There were no further developments in the market for lard, prices being firmly maintained with a good steady demand for supplies for local and country account and an active trade was done in a jobbing way in Canadian pure leaf grades at 38c to 38½c per lb. in 20-lb. wood pails and at 39c to 39½c per lb. in 1-lb. blocks.

The receipts of provisions today were 1,040 packages lard, 2,699 boxes hams and bacon and 4,571 packages tinned meats.

THE BALED HAY MARKET

Montreal, June 23—There were no new developments in the condition of the market for baled hay today, prices being still maintained uunder a good steady demand for all supplies coming forward, and sales of car lots of good No. 2 timothy hay were made at $40 to $41, No. 2 timothy hay at $38 to $39, and No. 3 timothy hay at $35 to $36 per ton, ex-track.

THE CATTLE MARKET

Montreal, June 23—At the Canadian Pacific Live Stock Market today the offerings amounted to 100 cattle, 375 sheep and lambs, 625 hogs and 1,300 calves. One of the features of the trade at this market was the demand for calves for shipment to the United States, and seven carloads were shipped, and a dealer remarked that if it had not been for this demand prices would have slumped, as supplies coming forward were far in excess of the local requirements. The top price realized today for choice lots of calves was $12 per 100 lbs. and the lower grades sold from that down to $8. Another feature of this market was the demand for selected hogs for shipment to Toronto and seven carloads were forwarded, and the dealer stated that none of them cost more than $21 per 100 lbs. weighed off cars here, while at the Montrea Stock Yards, West End Market, today, sales of selected lots were made freely at $22.50 and in some instances as high as $22.75 was realized. The labor troubles at the packing houses being practically settled, there was ample demand to absorb all the cattle offered and the best steers and heifers offered sold at from $11 to $13 per 100 lbs. cows at from $9 to $11 and bulls at from $8.50 to $10.50, while a few grass fed cattle in poor condition sold at prices ranging from $4 to $8. The quality of the sheep offered was also poor and in consequence low prices had to be accepted for them at from $8 to $10 per 100 lbs., and spring lambs sold at $16 per 100 lbs.

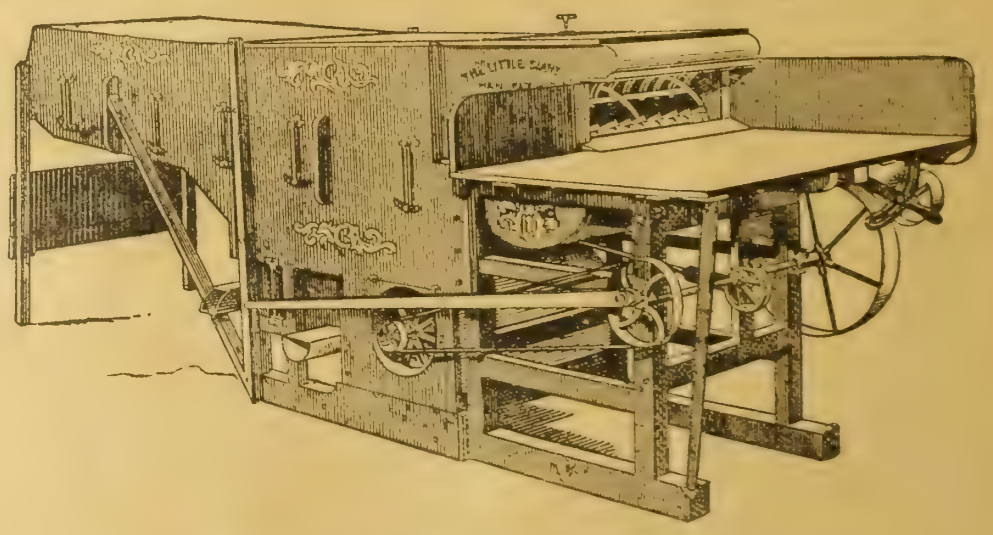
THE LOCAL GRAIN MARKET

The option grain markets today were strong under good buying for both short and long account and prices for corn in Chicago scored an advance of 3c to 4c per bushel, barley 2½c to 3c, rye 1¾c to 2, and oats 1½c to 1¾c, while in Winnipeg oats sold 1⅜c to 1½c higher, and barley 1⅝c. In sympathy with the above the tone of the local grain market today was strong, but there were few changes in prices to note. There was some demand from exporters for barley and sales of car lots of extra No. 3 Ontario were made at $1.45 per bushel, extrack, and one or two round lots of sample barley changed hands at $1.35, ex-store, while car lots of the former to arrive for shipment to the country were quoted at $1.49½ and No. 3 Ontario at $1.48. The trade in oats for local and outside account was rather quiet, the demand being somewhat limited, and only sales of odd cars of extra No. 1 feed were made at 91c, and No. 2 feed at 89c per bushel- extore, while to arrive by water extra No. 1 feed were quoted at 90c, No. 1 feed at 88c, and No. 2 feed at 83c, and Ontario No. 2 white to arrive by rail at 91½c. The demand from over the cable for barley today was quieter and the volume of business small. Sales of No. 2 yellow corn were made in the Chicago market today at $1.72 per bushel, while figure shows an advance of 3c per bushel.

Announcement

Having purchased the Farm Machinery plant from the Sussex Mfg. Co., Ltd., we are now manufacturing the complete line of Farm Machinery previously made by them, including SUSSEX LITTLE GIANT THRESHERS, Wood Cutters, Feed Cookers, Root Pulpers, etc.

We respectfully solicit your orders and enquiries.



Sussex Little Giant Threshers
"The Proven Best"

Wallace Machine Works, Limited, Sussex, N. B.

DR. GRISDALE'S APPOINTMENT

In the appointment of Dr. J. H. Grisdale as Deputy Minister of Agriculture for Canada, Hon. A. T. Crerar has acquiesced to the desire so often expressed at meetings of agriculturists, that a man with a thorough knowledge of agriculture should be at the head of this important department. And for the position no better man could have been chosen by the Minister, for Dr. Grisdale brings to his new office a wealth of practical experience possessed by few other men in Canada. Moreover, the farmers from coast to coast have absolute confidence in his ability, which will undoubtedly result in helping to place the Department of Agriculture on a higher plane in the general estimation of the public.

Dr. Grisdale's promotion to the highest position in the servce, serves to remind those who have followed his career, that his march up through the ranks has been most marked. First farm boy, then school teacher, on to the Ontario Agricultural College, where he graduated with honors, next appointed Professor of Animal Husbandry under the Experimental Farms' system, and finally its director upon the resignation of the late Dr. Sanders eight years ago. This connection with the Experimental Farms' system for nearly twenty years brought him into close touch with prominent live stock men and farmers in all provinces of the Dominion, which gave him a splendid opportunity to study all phases of the work, and the needs of the industry. The observations gleaned will serve him well now in developing a policy, that will lift agriculture, the most important of all our industries, on to a higher level than it has heretofore occupied, promote harmony in all branches of the service, and eliminate that nasty, restless spirit of discord, that has had a tendency of late to spring up between urban and rural life.

The new Deputy Minister of Agriculture takes charge of the Agricultural Department at a most opportune time, just at a period when careful, sane leadership is required, because on account of industrial and economic conditions both at home and abroad, the industry of agriculture is facing a most critical situation. For instance such momentous problems as increased production and greater profit therefrom so as to hold people on the land, the eradication of contagious diseases of live stock, the acquisition of more skilled farm labor and the proper development of an export trade that will take care of our surplus live stock, grain and meat products demand immediate and vigorous attention. As a country we cannot afford to trifle with these matters any longer, and success or failure as meted out to us in the future will largely depend upon the action initiated now by Dr. Grisdale and sincerely followed by his officers in charge of the varous branches of the department. And in addition to all these things there needs to be a stronger chain of co-operation between department, farm press and people, without which we cannot possibly hope to attain the goal of our ambition.

The Maritime Farmer firmly believes that Dr. Grisdale fully realizes that there are weaknesses in his department, defective links which have held it back from developing full strength in the past, and that moreover, if given an absolutely free hand, he has both the ability and the courage to place it on a plane above criticism. The agricultural interests of Canada look to him to make an early start, and when he does he may count on loyal support and encouragement from every quarter.

THE NEW DIRECTOR OF FARMS

The new director of Experimental Farms, Prof. E. S. Archibald, assumes his position with the assurance that, backing him in the work, will be a Deputy Minister, who having himself been a director for eight years, fully understands what is really needed to make the system what it ought to be—a leader in the advanced movement for better agriculture. This should go a long way towards placing the Central Experimental and branch farms on a better working basis, and more able to cope with the growing demands of the country.

The appointment of Prof. Archibald will be popular throughout the country, and particularly with live stock men, in whose interests he has labored for some years with a great deal of success, as head of the Animal Husbandry Branch of the Experimental Farms' system. This line of work has taken him to all parts of Canada year after year, so that he is not only thoroughly in touch with the activities of the various branch farms, which now come directly under his supervision, but he also has a deep knowledge of farming conditions as they exist in the different provinces, whch will enable him to carry on the work effectively and efficiently. Coupled with this is the fact that he has always been a close student of rural requirements from an agricultural standpoint, so that his qualifications seem to eminently fit him for the work.

The farmers of Maritime Canada know Prof. Archibald's true worth and will congratulate him on his appointment.

CHEESE MAKING IN NOVA SCOTIA

The cheese factories should now be fairly under way for the season's work. A survey of the Province of Nova Scotia discovers only one factory in effective operation this year, the Malagash Point Cheese Factory, Cumb. Co., which has now been doing business some twenty-five years. This factory has been the means of developing one of the most prosperous sections of the Province. According to reports tabulated by the Provincial Department of Agriculture the average earning per patron in 1918 was $300.00 for the five months operation. The average earning of the Creamery patron over the Province for the whole year was $217.50. While it is to be borne in mind that there are detailed facts which modify this comparison, the figures are very striking, especially when the short season at the cheapest feeding period of the year is considered. The Provincial Dairy Division is satisfied that at present prices for dairy products cheese will give a higher net return than butter. The profit to the patron will be affected by the use made of the skim milk.

There can be no doubt that the major portion of the Province is better fitted for creamery work, but there are many sections where conditions are similar to those of Malagash, with a large cow population in a comparatively small area situated at a distance from the railway. In these localities, where there are, say, 300 cows within a radius of four or five miles, a cheese factory could be successfully operated during the summer months. It would take more than twice this number to make a successful creamery business. The initial cost of plant and machinery is much lower, and, in short the experience and knowledge of this Department go to show that a number of cheese factories could be successfully carried on in localities where there is now nothing doing. Any one who is interested and wishes further information should write to Mr. W. A. McKay, Dairy Division, Agricultural College, Truro.

THE MARKETING OF WOOL

The Canadian Co-operative Wool Growers, Ltd., was born at Toronto in February, 1918. It has proven a very vigorous child in the short period of its life to date. Last year it marketed upwards of 4,500,000 lbs. of wool, or about one half the total product of Canada. The prices paid ran from five to ten cents higher than those paid by other dealers, although many of these strained a point in order to bacle and discourage if not to kill the youngster organization. It is bidding for a bigger business this year, and it will pay every farmer who has wool to sell to remember The Canadian Co-operative. There is a depot somewhere within easy reach, and somebody who can give full information.

The explanation of the higher prices is not far to seek. The wool is prepared carefully for the manufacturer, thus commanding the highest prices obtainable, and middle men's profits are cut out. The method of payment to date is to advance about two thirds of the price at the time of delivery and to forward the remainder as soon as the wool is marketed, deducting only the actual selling charges. The wool is graded by Government graders, and is bought unwashed. The sole direction given out for the preparation of wool for this organization is to roll it up unwashed in separate fleeces tied with paper twine.

The capitalization of the Canadian Co-operative Wool Growers, Ltd., is $200,000, divided into $10.00 shares. Some of the stock is still on the market, and sheep men would be wise to take at least one share, so that they would have a real interest in the marketing as well as the growing of their wool. By the way, the organization guarantees 6% interest, and asks only 20% of the payment with application.

Mr. S. A. Logan, vice-president of the Co-operative and director for Nova Scotia, would be glad to correspond with interested parties. The warehouse for the Truro district is the Curling Rink, Truro, and letters may be addressed to Mr. Logan at the College, or simply, Truro, N. S.

STRIKING

An Irish soldier invalided home from the front was asked by a friend what struck him most about the battles he took part in.

"What struck me most?" said Pat. "Shure it was the number of bullets flying around that didn't hit me!"

Get a new Binder this year

It will be a real economy!

In these times of good prices for farm crops you should equip yourself with a Frost & Wood Binder to make sure of getting the utmost possible percentage of your crop.

It will be your best, most willing, most capable "Harvest Hand" for many years to come.

The easy working FROST & WOOD

Famous all over Canada for its light draft—due to the fine roller bearings at every friction point— its big capacity elevators and its ability to cut any kind of crop, light or heavy, tangled or straight. Drop into our nearest dealer's, sit on the seat of a F. & W. Binder, note the easy reel adjustments that bring every possible straw to the knives. See how accessible and easily understood every working feature is. Note its strength and splendid materials, and you'll say, with thousands of other successful farmers, "This is the Binder for me."

Write for illustrated Folder today.

THE FROST & WOOD COMPANY, LIMITED

Truro, N. S. ST. JOHN, N. B. Charlottetown, P. E. I.

THE IDEAL DAIRY BARN

(Continued from page 937)

operate, convenient, easiest to keep clean, cheapest and durable of any system yet devised.

Cost of Barns

The cost of building has advanced ni recent years but it costs no more to build a good barn and stable today than to build a poor one. The roof, walls and flooring are the same, but the difference between good and bad convenient and not convenient, all depends upon the planning of the interior arrangements. What then is the best way to go about it? That, of course, wil ldepend upon the individual, but the writer would urge all who are contemplating building a new or remodelling th eold barn to observe the following suggestions and act accordngly:

1. Obtain all the plans and information you possibly can. Write to the various barn equipment companies asking them for information and literature on the subject.
2. Visit all the good dairy barns you possibly can. Go out from your district and see what they are doing in other parts.
3. Don't be afraid to spend time getting the barn planned; it means much to you later on. 50 extra steps three times per day means 10 miles per year. Many barns have several of these 10 miles of walk built right into them. Don't you do it. There is plenty of work even in the most convenient barn.

INCREASED PROFITS IN DAIRYING THROUGH BREEDING BETTER COWS

(Continued from page 945)

Though some Canadian dairymen are far ahead of those in the Old Country in the work of producing high record cows, they fall behind when it comes to a matter of high average in a herd or the quantity of milk each acre of land can produce. A high average for the whole herd is their chief desire; the cow they pick out for testing is the one that is suspected of giving the quantity of milk that is not paying for her food and if she is found wanting she is fitted for the beef market.

The Cow's Individuality

It does not need an expert accountant to tell the dairy farmer that there is vastly more profit in one cow producing 300 pounds of butterfat per year than in two cows each producing 150 pounds butterfat during the year.

The most profitable cow is the one requiring the smallest percentage of feeed for maintenance purposes. The more milk producing the tendency of the cow is, the less quantity of feed given her will she use for maintenance; reserving that duty to her short dry period.

Individuality is instanced by two cows which were bred so that they calved only a week apart and kept under conditions which made a comparison of their performance most reliable. They were fed rations of the same composition and the amount of feed eaten by each was recorded. They were kept farrow and at uniform weights, and their production was recorded as well as the composition of the milk. The amount of feed required for maintenance was also recorded as wel as the percentage of feed digested by each. It was found that the better cow produced 8,522 lbs. milk during the year and 469 lbs. fat. The pooer cow produced 3,188 lbs. milk and 169 lbs. fat. Each required practically the same quantity of food for maintenance, and each digested equal percentages of the feed consumed. The better cow, however, consumed much alrger amounts of feed so that the percentage required for maintenance was only 35 per cent., while the poorer animal required 55.8 per cent. of her feed to keep he alive. In fact, the better cow ate 2.64 times as much as the poorer cow and produced 2.77 times as much butter-fat. It will be seen therefore that each cow made equally good use of her feed, but the better cow was a more efficient milking machine and was, in consequence, able to utilize a greater quantity of feed above maintenance than the poorer cow. The poor cow did not pay for her feed, while the good cow was a very profitable producer.

This is the crux of the whole question. Settle the fate of the scrub cow and the whole question is ended so far as profit in dairying is concerned.

Here is a Cletrac Fact — Kerosene Fuel!

IN operating the tractor fuel is an important item.

Gasoline is 36 cents a gallon. Kerosene (coal oil) is 18 cents.

The Cletrac Tank-type Tractor works on kerosene. Not just goes—but *works*—100%.

And the Cletrac uses no more kerosene than other tractors use gasoline.

On this cheap fuel the Cletrac will do a hundred things around the farm—do them quickly and well—save man-power and horse-power—save time and money.

Plow at 3½ miles an hour—the best plowing speed.

Pull a disc, harrow and drag over even muck land to the tune of 40 acres a day.

—*and never pack the soil.* The track-laying *Cletrac rides on top*—your seed-bed is perfect.

You'll want the active, dependable 12 h.p. of the Cletrac to haul stones and logs, grade roads, pull mower, binder, hay-loader and manure-spreader, or a string of wagons.

And you'll want the 20 h.p. of the Cletrac belt pulley to run your feed chopper, ensilage cutter, threshing machine, cement mixer, wood-saw.

Now is the time to find out about the Cletrac Tank-type Tractor. Write the Cletrac dealer or us for our book, "Our Owners Say," the story of what the Cletrac is doing for other farmers—told in their own words.

Ontario Experimental Farm,
Ottawa, Ont.

Messrs. Beach Motors, Ltd., 186 Albert St., Ottawa, Ont.:
Gentlemen—

I take pleasure in stating that the work done by you with the Cletrac Tank-type Tractor recently, on the Experimental Farm, Ottawa, was entirely satisfactory, either on plowing, discing or on belt work.

I might put particular emphasis on the satisfaction it gave in driving a No. 3 Massey-Harris Blizzard Blower in filling one of our silos; the power delivered was very even and the motor handled the work apparently with very little effort.

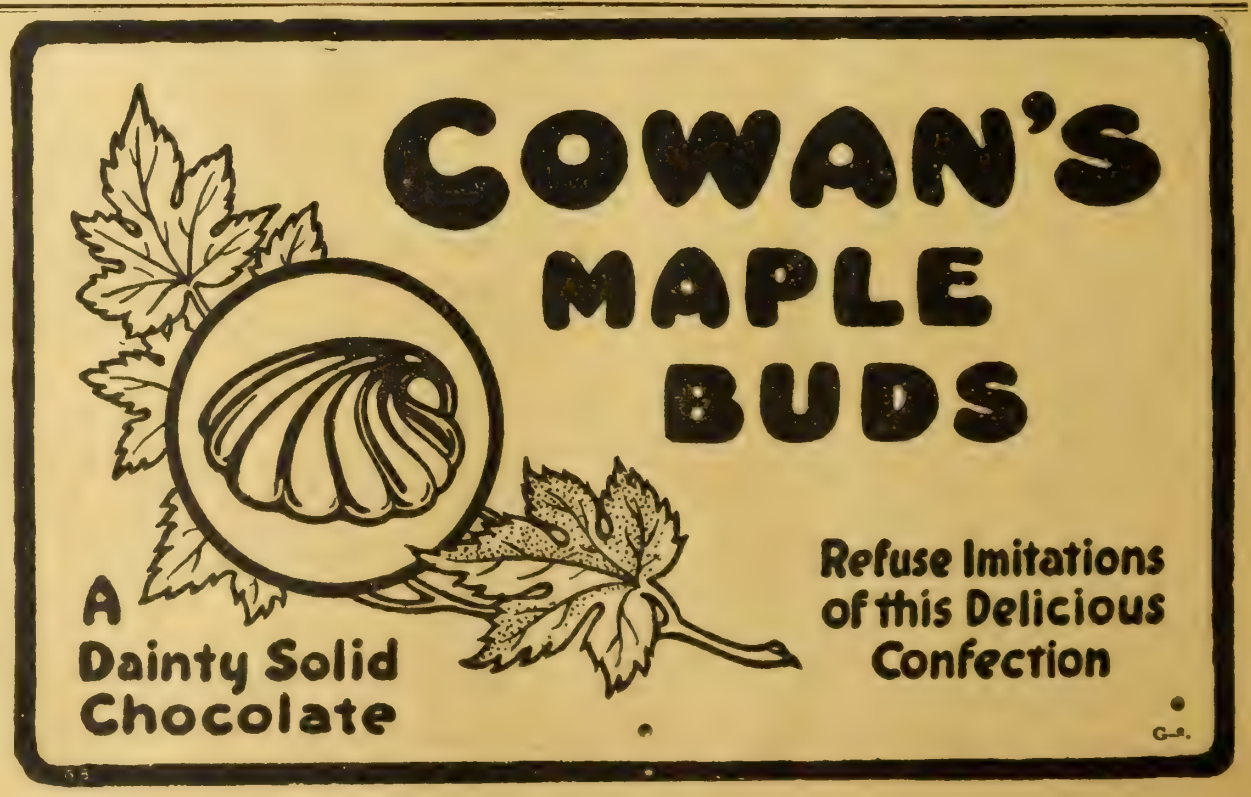
(Signed) D. D. GRAY,
Farm Superintendent.

Cletrac
TANK-TYPE TRACTOR

The Cleveland Tractor Co., of Canada, Limited
Windsor, Ontario

TWO OR THREE MILKINGS

For Holstein cows giving less than 40 pounds daily not enough is to be



gained by milking three times a day over twice daily to warrant the change. Cows giving 40 pounds or more will work more persistently, produce somewhat more largely of milk and test a little higher if milked more frequently than twice daily.

THE INFLUENCE THAT PROPER ATTENTION OF BROOD MARE HAS ON THE HORSE INDUSTRY

(Continued from page 949)

and the whole act only occupies five to fifteen minutes; and the animal is often eating quietly right up to the time of foaling.

It is very important to watch the behaviour of the mare at the first foaling, and to note all the preliminary symptoms already described, as it enables one to gauge more nearly the time she will foal subsequently. Mares should always be placed beforehand in a box stall, carefully disinfected, and the best way to have it bedded is to place six inches of good sawdust on the floor, and trusses of straw should be placed in the corners to prevent the mare lying down too near the corner and getting jambed. Seeing that parturition comes on so quickly it is always necessary to watch mares during the last day or two continually. The reason for this is a double one. The foal is frequently born with the membrane intact in which the foal is inclosed, and if not immediately released it will become suffocated. The mare, if in a loose box, and not too sick, will, generally, instinctively tear the membrane and liberate the foal. The second reason is that, if the foal is in a wrong position, the pains are so severe as to force the animal int othe pelvis in the wrong position, and it is with great difficulty that the foal can be removed. The foal must also be delivered within one or two hours after foaling begins, as by that time the membranes will have lost their connection, the circulation to the foal thus becomes disconnected, and death of the foal follows. A foal will rarely live through a three hours' period of foaling.

A pecularity among mares is, that some will not give birth to their young in the presence of persons if they can help it. If the birth is easy and normal, let both mare and foal alone. They wil come through the ordeal all right. The caretaker should always be on the watch to render assistance if need be, but the mare must not know of his presence.

PROPER WAY IN TREATING WOUNDS

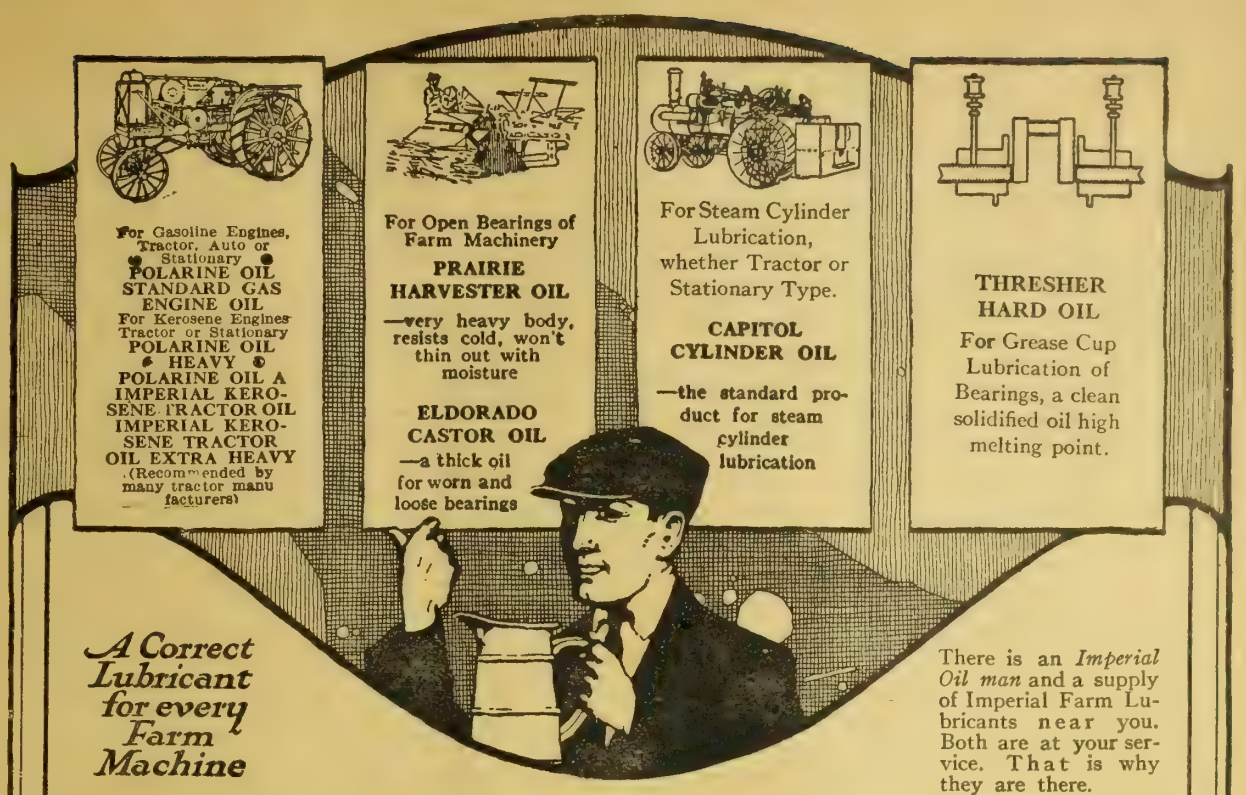
The treatment of wounds must vary according to the nature and severity of the injury. Simple lacerations of the skin may be washed and cleansed by the use of a preparation of chloride of zinc, 10 grains to each ounce of water No bandages should be applied to simple skin injuries unless they are necessary to keep flies out of the wound.

A more serious and rather common injury results from the puncture of the foot by a nail, wire, or other sharp object. Should an accident of this nature occur the nail, if still in the foot, should be removed as soon as possible. A qualified veterinarian should be called promptly to explore the wound and proceed with suitable treatment.

Injuries to the skin in which the deeper tissues are involved, and from which abscesses or ulcers may or may not have developed, should be carefully washed out with a disinfecting solution for which 3 per cent. of carbolic acd, 1 to 1,000 bichloride of mercury, or 1 per cent. solution of potassium permanganate may eb used. Flaxseed poultices are sometimes of advantage on abscess formations after they have opened. After the wound is well cleaned a healing dressing, such as carbolized vaseline, or picric acid 2 parts, alcohol 40 parts, and water 400 parts, may be applied upon a pad of absorbent cotton, supported by a bandage. The bandage in these cases should be readjusted twice daily until healing has become established.

Medicines intended for fowls should always be prepared in suuh a manner that they can be given in a grain mash or in drinking water. Even those that have a disagreeable taste or odor will often be taken by fowls in their feed or water without hesitation.

Attention given to providing clean, dry staples for stock during those seasons of the year in which they are stabled continuously will have much to do in preventing such troubles as thrush and foul feet. Careful attention to feeding will prevent most cases of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This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

YORKSHIRE PIGS for sale. Registered and not registered. Write HENRY McINTYRE, Box 525, Campbellton, N. B.

FOR SALE—Nine Yorkshire Pigs, three weeks old, registered, $10.00 each Apply to WENDELL WARD, West Bathurst, Glou. Co., N. B R. R. No. 1.

FOR SALE—One pure bred Holstein Bull, dropped last August, two more dropped in January, good stock.—W. G. CAMPBELL, Salisbury, N. B.

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One mare, five years old. One stallion, rising two years. One stallion, rising one year. Dam, "Dixie Grey," (1593). Sire, "Muster," (4313) (53324.) Good size.

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Box 652, FREDERICTON, N. B.

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Females, all ages. Also a number of bull calves ranging from one month to eight months. Sired by the prize winning bulls "Morton Mains Amanth" Imp. and "Cherry Bank Cicero."

McINTYRE BROS.

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We are also offering Karakule-Arabi rams and ewes, producers of the finest Persian Lamb Fur.

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Jersey Offerings for the Summer of 1919—

One 4-year-old Grade, heavy milker, due to freshen from pure bred bull, Oct. 11th, 1919. Several pure bred calves, male and female.

Shorthorn Offerings for Summer of 1919—

One young bull (pure bred and registered), dropped March, 1918, of splendid parentage.

One 2-year-old heifer, due to freshen Dec. 1st, 1919, from imported English sire of milking strain.

Two yearling Heifer Calves, very thrifty.
One Bull Calf, dropped Jan. 16th, 1919.
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Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

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Barry P. Hill, Great Village, N. S.
T. D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B.

Ayrshire Cattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co,, N. S.
C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE PIGS

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Milking Shorthorns for Sale

We are offering some choice young Shorthorn bulls of the milking strain, ages 3 months to 15 months.

Also a limited supply of heifers, one and two years of age.

For particulars apply to

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett
Upper Sackville, - - - N. B.

bloating in adult cattle and scours in calves. Many feeders make the mistake of giving their young calves feed that has not been properly warmed, and troublesome diarrhoea results.

MARITIME FARMER'S AUTO SERVICE

If you're a Maritime Farmer subscriber we would suggest to you the advisability of availing yourself of the excellent auto service we are running. If you are like other auto owners, you have troubles, little ones and big ones. The Maritime Farmer places the services of Mr. Albert L. Clough at your disposal. It will not cost you a cent to place your problems before him and he will help you solve them. Mr. Clough is the editor of the motor service bureau of "Review of Reviews." Not only does he deal with your case, but in every issue of the Maritime Farmer he discusses other people's difficulties and his articles are doubtless applicable to your cast. Anyway, Mr. Clough is YOUR AUTO EXPERT and it is for you to avail yourself of his experience, if you care to. Write us and we will see that you are advised.

Not only are we doing that but when you want tires for your car, drop us a line. We can save you your subscription price many times over in a set of tires. We HANDLE NOTHING BUT FIRSTS. DO NOT CONFOUND THE TIRES WE SELL WITH THOSE ADVERTISED WITHOUT GUARANTEE AND WHICH ARE REALLY SECONDS. EVERY TIRE WE SELL HAS A STRAIGHT GUARANTEE OF 3500 MILES BEHIND IT, BY ONE OF THE LEADING MANUFACTURERS OF CANADA. There is NO STRING TO THIS OFFER. If you are a Maritime Farmer subscriber, the service is yours. Be wise and use it. DON'T DESPISE IT BECAUSE IT COSTS YOU NOTHING, BUT REALLY SAVES YOU MONEY.

THE CREAMERY PICNIC

What shall it be this year? A "blow-out" with all money gathered up going to supplement the finances of the Creamery, or a good social time, of which we have too few, coupled with some demonstration work in connection with the business. Some of the best picnics we have known took place in the neighbourhood of the plant which was kept running all day, with extra help from the Department to explain the different processes, and a strong social program interspersed with bits of information on Dairying and such topics. The meals were served in true picnic style. There was a fine, friendly, social atmosphere and everybody had a good time.

SHEEP DISEASE SPREAD BY TICKS

Over thirty years ago Principal Williams, of Scotland, agreed that louping-ill or trembling in sheeep was spread by means of ticks. For some time that theory was discrediteed. It is now brought into prominence by Sir Stewart Sockman. He has found that when a female tick has gorged itself with blood from a diseased sheep the larvae developed from the eggs of that female can infect new sheep with a disease marked by high fever, which sometimes ends in death.

A HANDY FARM BOOK

"The Veterinarian", by Prof. Charles J. Korinek, V.S., of the Veterinary College of University of Toronto, is a work that every farmer should have in his home. It is splendidly illustrated and deals in simple language with diseases of horses, cattle, sheep and swine. It tells a farmer what to do in a pinch and its possession may mean the saving of many dollars on hundreds of farms in the Maritime Provinces. The Maritime Farmer offers this fine work to its subscribers for seventy five cents, postage paid. We have hundred of requests coming to us every year for information as to treatment of live stock ills, which are fully dealt with by Prof. Korinek. Seventy five cents will help you greatly in becoming your own veterinary.

Glenrane Farm Holsteins!

We have a nice bunch of well grown Bull Calves for sale. These are well bred calves, fit to head any herd.

For particulars apply to

ROBERT C. HICKS

WEST BATHURST - - - N. B.

FOR SALE !

We have an exceptionally fine litter of 13 (living) of our large Berks for sale @ $12.00, four to 6 weeks old. Ready first of June.

Owing to scarcity of labor and we not being able to see eye to eye with certain Gov. officials, as to the type of Shorthorn to raise, we have decided to go out of the breeding and raising of pure bred live stock. Therefore our herd of 40 head of Shorthorns will be sold between now and fall for either breeding or for beef. Parties wishing to buy, please come and see them. We have seven very nice bulls, 10 months to two years.

L. M. ANDERSON, Sackville, N. B.

KEEP Holstein-Friesian Cows

1. The Holstein-Friesian is a large vigorous cow, full of energy and abounding in vitality.
2. Her physical organization and digestive capacity are such that she is able to turn to the best advantage the roughage of the farm, converting the same into merchantable products.
3. She yields large quantities of most excellent milk, fit for all uses and especially suited for shipping purposes.
4. Heredity is so firmly established through her long lineage that she is able to perpetuate herself for the production of strong, healthy calves.
5. When for any reason her usefulness in the dairy is at an end, she fattens readily and makes excellent beef.

If you can't buy a herd, buy a heifer

Information from the Holstein-Friesian Association

President. Dr. S.F. Tolmie, M.P. Victoria, B.C.
Secretary. W A. Clemons St. George, Ont.

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20 Rosecomb Brown Leghorn one year old hens ank cock at $1.50 each or $25 the lot, from Galloway and English best stock, good laying strain.

Eight White Grant Rabbits nine months old, A1 condition for breeding, best imported stock, $5 each..

Six weeks old White Grants, same strain, $1.50 each, $2.50 per pair, $3.50 for three, one buck and two does.

Black Siberian hares, six weeks, same prices. Also mature stock with young and one registered Black Buck.

WALTER G. STEVENS
Chatham - - New Brunswick

FOR SALE !

Eggs for Hatching and Live Stock

Get a setting of eggs from our O. A. C. Bred to lay Barred Rocks, Rhode Isalnd Red or White Wyandotte hens. We get eggs every day in the year. 10 cents per egg, $8.00 per hundred.

Extra well bred Holstein calves, both sex for sale.

Booking orders for Chester White pigs.

N. W. Eveleigh

"TheOrchards" Sussex, N. B.

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
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Volume 24. SUSSEX, NEW BRUNSWICK, JULY 8, 1919. Number 19.

FEEDS FOR SEASON 1919-20

The Maritime Farmer Has Arranged for Adequate Supply of Feeds for 1919-20--Get Busy and Have Your Society Buy Co-operatively

The Canadian Feed Manufacturing Company, of Fort William, the pioneers in the manufacture of feeds from elevator screenings, is preparing for a big year of "big business" in 1919-20. The comprehensive plant of the concern, a cut of which is published herewith, is now fully equipped to handle the great volume of business which was unexpectedly thrust upon it in its initial year. While the company's products were something new on the Canadian market, the demand for feeds last year induced live stock owners to try them out, and so gratifying were the results that the offerings of business came in faster than the mill could produce the goods, in its early stage of development. That condition, however, has disappeared and now any quantity of feed can be readily secured on short notice.

The Canadian Feed Manufacturing Company has behind it men who have grown with the grain trade of Canada. They are of the type that put Canada on the map in the grain business. They saw an opening for the manufacture of balanced feeds at moderate cost and they have invested a million dollars on their faith. The result is a manufacturing concern with one of the finest plants in America. More than that, it has behind it one of the greatest grain handling concerns in Canada. An auxiliary, in the shape of one of the largest elevating plants in Fort William, enables the Canadian Feed Company to do its business in a big way. It is doing that and the arrangements for this year's trade will enable it to cater to every want of the live stock man. Cattle, horses, hogs, poultry, etc., can all be fed from the mills of this enerprising Canadian concern, and it is Canadian.

At the invitation of the Canadian Feed Manufacturing Company, a representative of the Maritime Farmer went to Fort William to give the plant the "once over." He found a thoroughly equipped, modern factory. More than that the outfit is in the hands of men who know their business and in every department there was evidence that things were moving and in the right direction. The elevator capacity enables the company to carry raw material well in advance of its requirements. It is a big buyer and therefore protects its own interests and those of its customers. The plant is designed from an economic standpoint. There is no handling of raw material or finished product. From the time the grain arrives on either the sidings of the Canadian Pacific or the Canadian National Railways, until it is bagged and weighed, human hands have no part in the operation, except running the machines. Electricity is used for power purposes and the appearance of the plant at once suggests cleanliness and sanitation.

The production of the various brands of feeds put on the market by the Canadian Feed Manufacturing Company is attended by rather interesting processes. But the feature in which the Maritime aFrmer was most interested was that connected with the cleaning of the elevator screenings, which are used in the manufacture of Pioneer Feeds. The screenings are treated to a process of re-cleaning which removes all noxious weeds and foreign matter. Mustard seeds are parctically eliminated by this process. But if that were not sufficient the raw material is ground in specially designed machines which utterly destroy any possibility of germination.

When Pioneer feeds first came on the market every fellow who was interested got his axe sharpened. And each used it. All sorts of misrepresentation was indulged in. The feeds were represented as being made from weed seeds; they were alleged to be capable of every crime in the calendar that criminal feeds could perpetrate; but despite that they found sale and so excellent were the results that hundreds of farmers in the Maritime Provinces used them and intend to continue doing so. From men who have experienced the splendid milk and flesh producing qualities of Pioneer come testimonials of the highest character and these were backed up by orders for more of the same much maligned goods. But possibly there is no higher form of flattery than imitation and already some of the hardest knockers are getting ready to TRY and imitate Pioneer feeds. One thing that has been clearly demonstrated by the recent shortage of feeds is that animals will live and thrive without middlings, shorts or bran. Not only will they do that but they will perform their functions to better advantage on well balanced rations. This has been established to the satisfaction of not only those who have used a balanced feed within the last year, but has been demonstrated time and again by exhaustive tests conducted with the herds of the experimental farms of the Dominion. It has been proved beyond question that the most economical feed today offered on the market is elevator screenings and it is from this commodity that Pioneer feeds are being made.

Not only is this true but the Canadian Feed Manufacturing Company is producing for the live stock branch of the department Standard Stock Feed made from screenings. This feed is being sold to farm organizations at cost, but so great is the demand for it in Quebec and Ontario that none has found its way to the Maritime Provinces. And more than that, the department af few weeks ago had orders on hand which would keep the two mills going to capacity for days. This branch of the live stock department's work will be dispensed with when the stocks held by the government is exhausted. The Canadian Feed Manufacturing Company, however, will continue to manufacture from the same formula, their Standard Pioneer. The Maritime Farmer is pleased to announce that it can supply this and other feeds manufactured by the Canadian Feed Manufacturing Company to farm organizations. Last year we handled over 100 cars of these feeds in the Maritime Provinces. We have no hesitation in saying THAT THE RESULTS WERE HIGHLY SATISFACTORY. IF YOU HAVE ANY DOUBT ON THIS SUBJECT WE WILL FURNISH YOU WITH NAMES OF THE BEST FEEDERS IN THE MARITIME PROVINCES, WHO WILL GLADLY TESTIFY TO THE FINE RESULTS OBTAINED BY USING THESE FEEDS.

NEVER MIND THE KNOCKER. The only people who had complaints to offer last year about Pioneer Feeds were people who did not see them, or dealers whose profits were cut so law that the operation hurt. Every effort has been made to defeat co-operative buying among farmers but the thing will not down and all the knocking will not detract one iota from the feeding values of Pioneer feeds. If your are interested the Maritime Farmer will furnish you with full particulars as to how to buy, prices, etc.

Selling Pioneer Feeds

This is one of the features of Canadian Feed Manufacturing Company's business which must commend itself to every wise buyer of feeds. These feeds are offered with a guaranteed analysis as to protein and fat. They are sold on their actual feed values and not on any fictitious or imaginary content. If you are a well informed buyer of feeds you will always insist upon knowing just how much protein and fat are carried in any feed you contemplate purchasing. Don't be misled by THE APPEARANCE OF FEED. That will tell you nothing of its real feeding value. Last winter farmers in the Maritime Provinces paid hundreds of dollars more for single cars of feed than the stuff was worth. The Canadian Feed aMnufacturing Company is not afraid to have its feeds bought and sold on the basis OF ACTUAL FEEDING VALUES.

Elevator screenings Standard feed as supplied by the Department of Agriculture, Ottawa, tests as follws:

Chemical and Botanical	
Protein 14%	Broken Wheat..46.1 %
Fat.... 5%	Oats..... 1.0 %
Fibre.. 8%	Flax ..... .1 %
	Wild Oats 10.65%
	Wild Buckwheat 35.15%
	Mustards ..... .7 %
	Other seeds.... .65%
	Chaff 5.65%

While the botanical composition may vary to a slight extent, the percentages of protein, fat and fibre will remain almost constant and, consequently, the feeding value will change but very little.

Other feeds supplied by the Canadian Feed Manufacturing Company are Pioneer Hog, Pioneer Horse, Pioneer Molasses Dairy and Pioneer Fat Maker. The latter is intended for beef cattle raisers and is specially manufactured for their use. Ground Special is another produce of this mill. It is a lower grade feed. Some feeders prefer it to any other feed they bought last season but it is better to mix it with other feeds. It is slightly bitter in taste but its low cost and its comparatively high protein-fat content have induced many well known dairymen to use it in large quantities. Many are outspoken in their preference to it, as compared with bran.

Other Feeds Available

It will be possible to secure mixed cars of all the above mentioned feeds, together with any kind of whole grain, barley meal, corn meal, cracked corn, poultry feeds and supplies, oil cake, etc. All oats will be sold subject to standard samples. The Company proposes to reclean all oats sold and will stand behind their goods. The prices of feeds of standard quality are almost fixed, but they will vary from time to time. Other commodities are sold subject to price confirmation on date of order.

The Maritime aFrmer is now preparing to supply feeds for 1919. From time to time announcements of interest will be made in these columns. The wholesale prices will be quoted in every issue of the Maritime Farmer's market report. It will be at these prices that you can buy. We would again impress upon readers the reliability of Canadian Feed Manufacturing Company's products. Our representative has been there and knows whereof he speaks. The Maritime Farmer is willing and anxious to help farmers get their car-lot supplies at cost. We can help you do that. WE SAVED TENS OF THOU-

(Continued on page 992)

Gleanings From the N. S. Department of Agriculture

CLOVER SEED GROWN IN N. S.

For several years the N. S. Department of Agriculture has consitently followed a policy of encouragement to the growing of clover seed. A huller was purchased and offered for use to any community which would produce a reasonable quantity. This was supplemented by an offer to pay 50% of the cost of any hullers bought by private parties or local organizations. A group of farmers here and there took advantage of these offers and attained satisfactory results. Last year a field crop competition in clover growing took place in the County if Inverness, and some very high scores were recorded. But, over the Province as a whole, there has not been a very general response to the Government policy until this year. Last Spring clover seeed was 60c and over per lb., and difficult to obtain at any price. The natural result is a light sowing of clover, and that in the best season for some years for a good catch. So farmers all over the Province are realizing that something must be done to meet the situation, and numerous enquiries have lately come to the Department.

Now the growing of clover seed is a very simple matter. Two methods are followed with success. One is to allow the first crop to mature without interference, to cure and store it in the usual way until thrashed. The other is to cut the first growth early, about the last of June or the first of July, the earlier the better after a fair stand of grass has developed. Then the second crop is allowed to mature. It is cut when the blossom has turned black, which in this case may be in October, and stored in the usual way. This latter is the more satisfactory method. There is less alien matter and usually a heavier yield of seed. In selecting a field, if the first crop is to be matured a lighter stand should be selected so as to avoid too much bulk of other matter. If the second crop is determined on, the richest plot should be selected so that the growth may be as rapid as possible. Very little loss in fodder is suffered, and the yield of seed runs from 100 lbs. to 600 lbs. per acre, at this year's prices a value o ffrom $60 to $360.

It is not the direct financial return, however, that should be the chief factor in the case. Clover, as is well known, is one of the best soil builders we have, in addition to being one of our best fodder plants. There will never be enough sown until it is grown at home. Persons wishing further information should write to the Department of Agriculture at Truro.

ORCHARD PESTS

The Forest Tent Caterpillar has appeared in immense numbers in the northern sections of Colchester and Cumberland Counties. This is a large hairy caterpillar about two inches long when full grown, and marked with a row of cream colored spots along the middle of the back. When numerous, as on this appearance, these will strip whole trees, then descend in an army and treat adjacent trees in the same fashion, and it is not strange that they should be mistaken by the uninitiated for the "Army Worm." The caterpillars are at this time of year almost mature, and wil soon spin their silken cocoons in curled leaves or other sheltered situations, emerging after three weeks as small brown moths with two dark bands acros the front wings. In another month these moths will be seen flying about lighted windows at night. They, in turn, lay their eggs in masses of 150 to 400 in the form of a ring around twigs of trees and shrubbery, covered with a greyish froth. The caterpillars emerge in the Spring when the leaves are breaking out.

Orchards that are regularly sprayed have little to fear from the Forest Tent Caterpillar. In this invasion it is confining its attention to forest trees for the most part. Where special measures are necessary, however, spraying with arsenic of lead should be resorted to. For the newly hatched caterpillars a strength of two pounds to forty gallons is sufficient, but when they are half-grown or more double this strength is necessary. To protect uninfested trees from migrating caterpillars, banding with tree tanglefoot is the recognized remedy.

A first cousin of the above variety is the Orchard Tent Caterpillar, which is distinguished from the other in appearance by a yellowish stripe down the back in ploce of the row of dots, and in habit by its weaving of its tent in the fork of a limb. This pest is much in evidence this year. It may be destroyed in a similar manner, or by cutting out and burning the tents, or by burningout with a torch when all the caterpillars are at home.

The "Canked Worm," a looping caterpillar, at first green in color, later turning dark, is also the cause of much complaint this season. It has not only stripped many orchard trees of their leaves, but also such wild trees as oak and maple. Light infestations are easily handled if taken in time, the 2 lb. mixture as above being sufficient if applied before the blossoms open. The strength must be doubled or eoen more, up to 5 lbs. to 40 gallons, in case of heavy infestations, or late application.

Such outbreaks as these are always liable to occur until spraying becomes a part of the regular farm practice. Arsenate of lead is the safest poison for general purposes. The cheapest poison at present is arsenate of lime, which, however, should not be used alone on apple foilage, but only in conjunction wfth Bordeaux mixture or five times its weight of water-slaked or hydrated lime. Arsenate of lime can be safely and economically used on potatoes and other trucn crops. Paris Green should never be used on fruit trees.

WOMEN'S INSTITUTES

Many women's societies organized for war work and patriotic purposes are now contemplating carrying on under the Institute plan. This is a good wholesome tendency. There is abundant room for patriotic activity still, deadly foes to be overcome, and greatly needed reforms to be thought through and carried out.

The new Superintendent of Institute work, Miss Helen J. McDougall, who has made a name for herself in the same department in the Province of Manitoba, takes up her work in Nova Scotia the first of September. The Provincial Institute, which has usually met early in the summer, has been postponed until the Autumn so as to have Miss McDougal present. In the meantime the Secretary for Agriculture will be glad to correspond with interested women in any community who think of organizing on the Institute plan.

AN EGG LAYING CONTEST

The contest idea which has worked well in stimulating people to adopt the best methods and secure the best results in other branches is now being carried in earnest into the realm of the hen. One of the humblest of man's servants, she is also coming to her own. Market prospects for her products are very bright to everybody except the consumer. Canada has never been able to do much more than supply her own need along this line, and seldom has she even done that itself. So there is vast room in this granary of the world for new interest and enterprise in this department.

Having in mind the present and future situation,, the Poultry Division at the College of Agriculture, Truro, is arranging for an egg-laying contest to run from the first of November, 1919, until September 30th, 1920. The conditions of the contest have been published in fuller form elsewhere. Any one who is unable to lay hands on the rules and regulations would do well to write Mr. J. P. Landry, Truro, N. S. It is sufficient to say here that plans are being made for 30 pens of fiv efemales each to be kept, fed and cared for at the College, throughout the period mentioned. The first 30 ogering, if they conform to the conditions, will be accepted. The birds will have expert handling and care, and good prizes will be offered for the competition.

Haying

(Experimental Farms Note)

The cutting and curing of hay is an operation requiring the exercise of prompt action and judgment if a maximum yield of hay of suitable quality is to be saved. Toward this end there are several factors which should receive consideration. The time or stage of cutting is of prime importance since it affects both yield and quality. Usually the most profitable yield is obtained when the crop is cut when in blossom or just past that stage, say when about one-thir of the bloom has disappeared. Ordinarily the tendency is to leave the commencement of haying too late for proper curing during the latter part of the season, due to over ripeness of the croj. It is advisable, therefore, to plan to do this work during the period when there is the least possibility of loss. Beginning haying early is good practice. Clover and alfalfa cut slightly immature will make better hay under favorable weather conditions than left until fairly ripe. Besides, an early start will allow for loss of time through broken weather during the haying season and will ensure a heavier second crop which may be utilized for hay, seed and pasture purposes.

With regard to methods of curing, no definite rule or rules of procedure can be laid down to meet all requirements. A successful hay maker so to speak "Knows his business," a knowledge that is acquired only by long experience with vagaries of weather, periods of cutting, conditions of curing, etc. To become efficient in this work requires one viligant and with abilit yto contend with emergencies.

Clovers and alfalfa are more difficult to cure than timothy and other grasses. They are more succulent, absorb rain more readily and the leaves, the most valuable part of the plant, are more easily broken off than the leaf blades of grasses. They should be cut when free from dew or other moisture, and dried for placing in cocks, by the agency of wind rather than sun as far as possible. Exposure to rain or even heavy dew will change the green leaves to dark brown and make them crisp and readily broken og by handling. Rain and dew will also extract the aroma of fragrance, a quality esential in making hay palatable and attractive.

Mixed hay, timtothy and other grasses, cure more readily than clover and are not affected to such an extent by unfavorable weather conditions. Otherwise the general principles of curing laid down for clover and alfalfa apply. Timothy grown for market purposes may be cut at a later period than is recommended for ordinary farm feeding purposes. Market conditions demand well matured. though not over ripe hay.

N. B. Cheese and Butter Board Organize

On Thursday afternoon the 12th ult. an organization was affected in Sussex that will be of far reaching benefit to the cheese and butter makers of New Brunswick and the buyers throughout the Maritime Provinces. It wil lbe known as "The New Brunswick Cheese and Butter Board." Representatives were present from practically all the cheese factories, and it was the unanimous opinion that it would be greatly to the advantage of all interested to have a "Cheese Board" that would meet at regular specified dates, and at which meetings the output of the different factories could be boarded and disposed of to competitive buyers.

After the matter had been thoroughly discused, it was decided to form an organization to be known as "The New Brunswick Cheese and Butter Board" and the folowing were elected as Board of Directors for the ensuing year:

President, T. G. Perry, Butternut Ridge.

Vice-President—O. W. Keirstead, Collina.

Secretary—H. W. Holeman, Sussex.

And as additional members of the Board of Directors—R. H. Pearson, Beleisle, and W. S. Mason, Head of Millstream.

After the organization had been completed, the new Board at once proceeded to business and five hundred cheese were boarded.

These were disposed of at 29.8 cents.

The buyers present were R. B. Colwell, Halifax, N. S.; Mr. Kennedy, of Gunns, Limited, Mr. Akerly of Swifts Canadiian, and representatives from the G.E. Barbour & Co., and Baird & Peters, St. John; and F. P. Reid & Co., Moncton.

The meetings of the Board will be held hereafter in the basement of the Agricultural School Building, Sussex, on the afternoon of the second and fourth Wednesday's of each month.

The formation of a cheese Board will bring factorymen together at regular intervals to discuss affairs, and will greatly expedite business in general. The old way of doing was for the buyers to write from Halifax or somewhere else to the factory and enquire how many cheese were on hand and the price asked for same; this letter would usually remain a day or two before being answered and by the time it reached the buyer and the purchase completed, the whole condition of affairs might probably be changed

and the markets entirely different.

With a Cheese Board a new condition of affairs is brought about and the slow unbusiness methods of the past will be suplemented by competitive buying and uniformity of prices.

Another great advantage is that it will bring the buyers and the sellers in personal touch and differences can be readily adjusted and future business gone into.

Having the Cheese Board meet in Sussex will be a good thing from a town standpoint, as it will bring here twice a month, representatives from factories all over the Province, and our merchants will no doubt reap quite a business harvest, as will our hotels and restaurants.

Buyers from all parts of the Maritime Provinces and elsewhere will also attend the meetings of the Board.

The New Brunswick Cheese and Butter Board owes its existence greatly to the efforts of H.W. Coleman, the energetic Dairy Superintendent of the N. B. Dept. of Agriculture, who has his headquarters in Sussex. Under Mr. Coleman's practical guidance, the cheese makers of New Brunswick are making rapid strides toward manufacturing cheese of a uniform quality and equal to the Ontario product. He is the right man in the right place and the N. B. Government was very fortunate in securing his services.

SECOND MEETING OF THE N. B. CHEESE AND BUTTER BOARD

The second meeting of the New Brunswick Cheese eand Butter Board was held in the Agricultural School building, Sussex, on Wednesday afternoon, 25th ult. A large number of factory representatives were present and the buyers in attendance were R .B. Colwell, Halifax; Mr. Akerly, of the Swift Canadian; Mr. Bonnel, of Harris Abattoir; Mr. Lyman, of Northrup & Co., St. John, and Mr. Robertson, of F. P. Reed & Co., Moncton.

Mr. Colwell started the bidding and called the Board at 29 cents with no sales. Mr. Akerly made four calls—29.6, 29.8, 29.7, 30. Mr. Robertson bid 30 and got first call. Mr. Colwell also bid 30.

The factories having cheese boarded and the number of cheese were as follows, all of which was sold at 30 cents per lb. f.o.b. nearest Railway station to factory:

Factoriese	No. of Cheese
Havelock	180
Lower Ridge	124
Cornhill Corner	75
Cornhill	285
Newtown	36
Killam's Mills	50
Lewis Mountain i	50
Manhurst	50
Mt. Middleton	50
Carsonville	62
Hd. of Millstream	65
Berwick	60
Collina	120
Pearsonville	77
Belleisle	160
Hammond	35
Total	1479

The average weight of cheese sold was 70 pounds each, so it will be seen that 1479 would make a total of 103,530 pounds, and at 30 cents a pound, would mean $31,059, a tidy little sum that will come into Kings County in the near future.

The buyers bought from factories as follows: R. B. Colwell—75 from Cornhill Corner, 50 Killam's Mills, 50 Lewis Mountain, 65 Head of Millstream, 60 Berwick. 80 Belleisle. Mr. Akerly for Swifts Canadian—124 Lower Ridge, 85 Cornhill, 120 Collina, 35 Pearsonville. Mr. Bonnell for Harris Abattoir—200 Cornhill, 80 Belleisle, 36 Newtown. Mr. Robertson for F. P. Reed—50 Mannhurst, 50 Mt. Middleton, 62 Carsonville. Gunn's Ltd., by request at Board price—180 Havelock, 35 Hammond.

The next meeting of the Board will be held on Wednesday, July 9th.

United Fruit Growers Hold Annual Meeting

(Kentville Advertiser, June 27.)

The most harmonious and satisfactory meeting in the history of the United Fruit Companies was held at their new offices, Webster St., Kentville on June 7th. An unusually large number of delegates were in attendance all of whom seemed well satisfied with the year's business. The turnover of the past year has been the largest in the history of the organization, amounting to about two million dollars and handled at an overhead cost of 1.31 per cent.

President F.W. Bishop was re-elected by acclamation as were the two retiring members of the board of management. The officers of the company now are:—President F. W. Bishop, Vice-President E. H. Johnson, agement C.W. McKeen, T. L. Harvey, V. B. Leonard, F. B. Johnson

It is eight years since the United Fruit Companies were organized. The years during which they were growing from a loose organization of a few companies to the large and well equipped organization of 43 subsidiary companies were dark years for the Nova Scotia apple growers. High costs and poor prices were causing much hardship among apple growers and out of sheer necessity they organized and through cutting costs in buying supplies and selling so as to have as few handlers as possible between them and the consumer have turned losses into profits. During its career many subsidiary companies have temporarily dropped out and Secretary K. L. Pineo, Board of Manmany individuals in turn have temporarily dropped out from the local companies. Almost invariably this company or the member has returned to the organi ation after an unprofitable lesson.

The United has been the main factor in causing the orchards of the Annapolis Valley to now be in the superior condition that they are. Through making profits for them during the hard years since 1912 which would, without their organization, have been losses. The major portion of the success of the United has been due to their fortunate selection of their manager, A. E. McMahon. During his years of service with the United, in various capacities, he has not only proved himself a skilful salesman, but a buyer of unusual ability, as is proved by the fact that the United now sells in many places lines to firms from whom they formerly purchased the same lines. With the membership of the United both in companies and individuals now larger than ever before and knowing that the darkest days for the apple industry in Nova Scotia are now over, and with their organization now in good shape, the future is certainly most encouraging for the membership.

Pig Pastures

The cost of production of pork can be materially reduced by the use of pastures. Under ordinary conditions where a pig is fed on grain alone, it takes careful feeding and a very thrifty kind of pig to make 100 pounds gain from 500 pounds of grain, and more frequently 600 to 700 pounds of grain are consumed. Experiments with pasture and self feeders at Brandon Experimental Farm have shown that it is possiblt to make good gains at the rate of 300 to 400 pounds of grain to the 100 pounds of pork with the addition of pasture. Pasture cannot be used satisfactorily to replace grain, but it may very profitably reduce the grain consumption by one-third . As the pasture can be grown very cheaply and the pigs do the harvesting themselves, the cost of producing a pound of pork may be reduced 20 to 25 per cent. This may mean the difference between profit and loss.

There are a considerable number of crops that may be used for pig pasture . The ordinary grain crops such as wheat, oats, barley and rye are quite suitable. Sown in the spring, these crops are ready for pasturing at the time that spring pigs born in March and April are old enough to use pasture to advantage. Spring rye is the first of these crops to be ready to use. The pigs eat it well and produce good grains on it. However, it soon passes the most palatable stage and becomes more woody as it shoots into head. Oats and barley are about a week later than rye in reaching the proper stage for harvesting but are relished rather more by the pigs and continue in a suitable condition for pasturing for a longer time. Wheat also produces good pasture but is no better than other grains and the seed is more expensive.

For later summer and fall pasture, there is nothing better than rape. Sown in early spring it is ready for pasture about the middle of July, or, if sown later, it reaches pasturing stage in about six weeks from the date of sowing. Pigs like it very well; it produces a large amount of feed and stands pasturing well. It is one of the best plants for hog pasture.

Another good fall pasture is fall rye. If sown in midsummer it is ready to pasture in a month from the date of sowing. It produces a good grade of pasture until severe frosts come and does not head out in the fall.

Perennial crops may also be used as pig pasture. Alfalfa will produce more pasture per acre probably than any other pasture crop. Pigs do very well on it, and produce economical gains. However, it costs more to start with alfalfa as the land must be prepared two years ahead and sown one year ahead of the time it is to be used. Also, its greatest growth is in May and June when on the average farm there are few pigs to use pasture as the spring litters are too small, and very few fall pigs are raised. The second crop of alfalfa comes in well for later summer pasture for spring pigs. Pigs root out alfalfa and soon destroy it if allowed to. It is advisable to put rings in their noses when they are pastured on alfalfa.

The ordinary grasses such as brome and timothy make first class pig pasture in the spring months. But, as in the case of alfalfa, there are usually not many pigs to use pasture at that time. In midsummer and fall when pigs need pasture most, the grass pasture is often dry and harsh and not suitable for piigs. Consequently, better results are usually obtained from the annual crops first described.

Pastured pigs should be confined to pens for a few weeks at the last before shipping to market. While on pasture, they take a great deal of exercise, especialy if of the more active breeds, and as a result grow well and make good frames with plenty of lean meat but may not put on enough fat. By shutting them up for about three weeks at the last, they make amazing gains in weight, thus increasing the profit, and get into a more finished condition for market. Pigs of the more sluggish breeds may be finished on pasture.—W. C. McKillican, Superintendent, Experimental Farm, Brandon, Man.

New Stock Import Regulations

The Dominion Department of Agriculture has found it necessary to amend the regulations governing the importation of American cattle for exhibition purposes.

After July 2nd it will be necessary for all American cattle imported for this purpose to be accompanied by a tuberculin test chart signed by an officer of the United States Bureau of Animal Industry stating that they have been tested by him within sixty days of the date of entry at the boundary.

This amendment was considered advisable owing to the fact that changes have been made in the American Regulations which now require that Canadian cattle shipped to the United States for exhibition purposes, must, after July 1st, be accompanied by a tuberculin test chart signed by a veterinary inspector of the Health of Animals Branch of the Department of Agriculture, stating that they have been tested within sixty days of exportation.

Live stock exhibitors should bear this in mind, and forward requests to the Veterinary Director-General, Ottawa, for the services of inspectors to test their cattle as promptly as possible after they have decided to ship them for exhibition purposes to the United States.

EXHIBITION DATES

St. Stephen	Sept. 9th to 12th
Woodstock	Sept. 9th to 12th
Fredericton	Sept. 13th to 20th
Chatham	Sept. 22nd to 27th
Charlottetown	Sept. 23rd to 27th
Port Elgin	October 1t and 2nd
Maritime Winter Fair, Amherst, N. S.	Dec. 15th to 18th

The farmer and dairyman who uses skim milk as a basis for the protein element of his feed for pigs or calves will not require to purchase so much protein on the market.

THE MARITIME FARMER

And Co-operative Dairyman
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Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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DATES OF ISSUE.

July	8—22
August	5—26
September (Exhibition Reports)	9—30
October	14—28
November	11—25
December (Xmas)	9—23

JULY 8, 1919

BUYING FARM EQUIPMENT

With the market teeming with new or improved types of farm machinery, all designed with the one prpose in view—labor economy; with present values at skyline limits, and a period of more or less uncertainty in prospect, the art of buying carefully, of investing to good advantage, is more than ever essential to the farmer, who is running his business on modern progressive lines. Farmer-investors, good and bad, may be divided into three well defined classes. In the first class is represented the individual, who, when he runs across a piece of equipment that takes his fancy, simply buys it on the spur of the moment without a thought as to the cost, or adaptability to his particular line of work. When he gets it, he behaves very much like a boy with a new toy—super-enthusiastic for a few days and then promptly forgets all about it. This sort of business is satisfactory to neither buyer nor seller, and the reader can form his own idea as to the wisdom of such a method of making investments.

In the second class comes the man who goes the limit in the opposite direction, working on the pennywise principle. He runs across a new machine, which suits him so far as quality is concerned, and gives every indication of being all he has been looking for. He can see quite well where it can be of advantage in his business, but when the price is mentioned—presto! Everything looks different. It does not make any difference, though he may see quite clearly where he could save the cost of the thing several times over—it is all the same—the price is too high, and there the matter ends. More often than not this man falls into the hands of the wily agent, who has an inferior article to sell at a low price, and he winds up by getting an article that suits his purse, but not his purpose.

But in the other class is the farmer who places his money to the best advantage, going about it very differently than either of the other two mentioned. When the proposition of purchasing new equipment of any kind is put up to him, it must be accompanied by all particulars, including cost. If there is a chance to see the machine he is planning to buy at work under conditions resembling those which prevail in his own business, he makes every effort to see it, and judge for himself as to its merits. Then finally before deciding one way or the other, he carefully balances cost against reasonable returns, in order to be sure that his investment will have a sound financial basis. Business transacted after a careful study of this kind is satisfactory to both parties; the buyer is satisfied with his purchase, and the seller gains another good customer.

WANTED—COMMUNITY LEADERS

Every rural community should have one or more leaders of thought and action. There should be at least one intelligent and fairly educated man in each district to accept the responsibility of leadership in all progressive ideas. Around such a man many organizations can be built—fruit-growers, stock-breeders, farmers' institutes, etc., providing he can find sufficient time to act as secretary, and conduct an outside correspondence which will command attention and respect. Men of the desirable stamp are usually to be found in every district, but are geenrally of a retiring and unpretentious disposition, requiring some urging in the commencement to undertake such work.

Of course every community has its would-be leaders and leaders backward—blattant creatures, bigots (religious and otherwise), selfish, vain and ignorant. The noisiness of such should be ignored. Men of firm ideas with such ideas reasonably based, should be chosen as leaders; but when found they should not be smothered in work. It is well to rememoer that such men have their own farm work to attend to, and anything they do for the community is either out of private spare time, or to the detriment of farm work. Every natural leader is a natural worker, and his probable ability in leadershrip can be measured by what he has accomplished on his own place. His services, when rendered should not no unappreciated. If at all possible, some regular monthly money remuneration should be made. If this is not possible, the men of the district could occasionally get up the old fashioned "bees" of Ontario and New Brunswick. These old fashioned gatherings never fail to produce lasting results and are one of the most pleasant forms of social intercourse in rural communities.

Solid worth in the man, sincerity, unselfishness and intelligence are the great essentials in the selection of community leaders. On no account should such a man be condemned on account of either his politics or his religion.

DESTROY THE WEEDS

"A stitch in time saves nine". This is espeo ially true in the case of weeds. When one considers that a single specimen of many kinds of weeds may produce over 10,000 seeds, and that many of such seeds may be blown far and wide by the wind, one begins to realize just what a source of contamination is a weedy roadside, a fence corner of a waste place, says Prof. J. E. Howitt, of the O.A.C.

It is too common a sight in the fall of the year to see a farmer busy with his fall cultivation, attempting to clean his field and preparing a good seed bed for next year's crop. At the same time on the roadside near the field or in the fence corners or some waste place near it, such weeds as perennial sow thistle, Canada thistle, milkweed and wild lettuce are maturing seeds by the thousands, to be blown on to his well tilled field and dresed with enough filth to markedly lessen his crop and increase his labor next year.

When labor is so scarce and when the maximum quantity of grain should be produced from every acre under cultivation, no can can afford to allow seeds to seed anywhere in the neighborhood of his farm. A few hours spent now and again during the summer cutting weeds on roadsides in waste places and fence corners is a good investment for the future, which will pay handsome dividends in labor saved and increased crop.

FEED AND SALT REGULARLY

A cow is pretty much a creature of habit. She becomes accustomed to getting her feed at a certain time each day and if that time arrives without the feed she worries about it and this has a tendency to affect her milk production. For this reason regularity in feeding is very important. Also waterng and salting should be attended to punctually. And the water should be good. It is a mistake to require cows to drink tainted water, for it certainly impairs the health if it does not affect the quality of the milk. The man who provides properly for the wants of his cows has a right to expect that they will repay him in a more abundant milk flow.

DRAINAGE VS. GOOD ROADS

It is possible to make good earth roads but they must be well drained. But for that matter. roads of any kind cannot be made good without drainage. Roads must not only have good surface drainage, but they must also have good underdrainage. Surface drainage is secured by proper grading, adequate side ditches and by keeping the crown of the road properly dragged. Where the road does not dry out quickly lines of tile should be laid. It is important that the earth road be kept in good condition by a liberal use of the drag. To get best results use the drag after each rain. Wait until the road surface has dried slightly but when it is still wet enough that it will not crumble but will smear. Go down one side and back the other. This will drag a thin layer of earth to te centre and give the road a crown that will sed the water. To keep roads in proper condition they must be given constant attention.

PLANT LICE AND SPRAYING SOLUTION

What will destroy the small lice that get on the leaves of apple trees; also where can I get lime sulphur solution for spraying? J. A. B.

There are several good remedies for insects of this type. A very good commercial solution is nicotine sulphate, commercially known as Black Leaf 40. This can be purchased from any seed firm. Full directions for using the remedy are given on each container. Kerosene emulsion also is a remedy, and may be made at home as follows: Mix a small quantity of coal oil with a thick suds of castile soap, made with hot soft water. This solution should be diluted with eight to 10 times its volume of water. In spraying apple trees or any plants for aphis or green fly, be careful to spray the underside of all leaves, as most of the lice will be found there.

* * *
* * *

Every farmer should keep some sort of account system of his business. It should show the profit and loss of all his operations.

* * *

The end of the war failed to bring the slump in the cost of living which most people felt sure would follow.

CANNING :: By Frances Low Smith in Modern Priscilla

The past two years have seen home canning placed on a simple, scientific basis that is as easily followed by the girl of twelve, as by her mother. Before the war, rarely did a woman attempt canning meats or veegtables. To-day she puts her products in the canner with the same assurance that she puts her bread in the oven.

There are several processes in use, but the simplest, safest, and cheapest for home use is the cold-pack or hot-water bath, as it is sometimes called. The outfit may be purchased, or improvised from utensils in hand. It includes the following articles:

A large receptacle such as a wash-boiler, a fifty-pound lard-can, or a large pail with a tight cover; a wooden or wire rack which fits the bottom of canner, and allows the water to circulate freely under the containers; and a jar lifter, or one of the wire baskets divided into compartments for the jars.

Glass jars or containers are the most satisfactory for home use, and preferably those having glass tops, although screw-tops may be used safely by renewing whenever they become defective in any way, and by always using new tops for meats and vegetables. Bottles that have contained olives, peanut butter, catsup, and other commercial goods may be saved to use for pickles, juices, jellies, and similar products. Seal wtih sealing wax or paraffin.

Rubbers should be of the best quality; those that will bear the long boiling without deteriorating. It is said that 75 per cent of spoilage in home products is due to poor rubbers. Use them only once.

Special Directions for Vegetables

Add one teaspoon salt to each quart of vegetables; also two or three teaspoons sugar to such vegetables as corn, peas, and carrots. Cabbage. greens of all kinds, and string beans are often improved by the addition of a slice of salt pork, ham, or bacon.

A cup of vinegar, two or more tablespoons sugar, and two teaspoons pickle spice, added to one quart of young carrots or beets before filling jar with hot water, makes delicious pickles.

A combination of vegetables, such as succotash, corn, and tomatoes, or peas and carrots, may be canned in order to utilize left-overs. or to vary the canned products. Be sure to sterilize sufficiently. For instance, if corn and tomatoes, boil the length of time required for corn.

Vegetable Greens.—This class includes spinach, chard, dandelions, and other greens; and such vegetables as cabbage, Brussels sprouts, cauliflower, and green peppers. Can the day they are picked. Trim greens, and remove old or coarse leaves. Wash very thoroughly in two or more waters to free from sand and dust. Place in cheese-cloth and blanch in steam so as to retain the mineral salts and volatile oils that would be lost if blanched in water. Soak cauliflower and cabbage an hour in cold brine (½ pound salt to 12 quarts water) before blanching.

Root and Tuber Vegetables.—In this class are parsnips, beets, carrots, turnips, kohl-rabi, and sweet potatoes. Scrub well with a vegetable-brush. With beets leave an inch of stem and all the roots, while blanching, to preserve color and sweetness; also with young carrots. Beets will look faded when removed from canner, but in a few days will regain their color. Scrape or pare to remove skin. Kohl-rabi and turnip must be pared on account of the thick skin. Cut vegetables in slices, quarters, or cubes, or can whole.

Tomatoes.—Scald one minute or long enough to loosen skins, and cold-dip quickly. Peel, remove stems, and cut in halves if too large to go in jars. Pack closely, pressing down with a spoon. Add no water. Season with salt and sugar if desired. Complete process as for other vegetables. Imperfect tomatoes may be pressed through a strainer, and canned for soup or sauce. Blanch, peel, remove stems, cut in pieces, and cook thirty minutes before straining.

Corn.—This seems to be one of the most difficult vegetables to can successfully, but with a clear understanding of the process of canning, and the causes of spoilage, it may be canned as easily as any vegetable. The corn shoold be absolutely fresh. In picking, it is important that the corn should be between the milk and dough stage —neither too young nor too old. Remove husks and silk, blanch, cold-dip quickly, cut from cob and pack at once in jar. Add seasoning and boiling water, cover, and put into canner immediately. If working alone, prepare corn for one jar at a time, putting it at once into the canner. To can corn on the cob, follow the same method, but pack whole ears in jars.

Pumpkin and Squash.—Remove skin and seeds, blanch until soft enough to mash, then proceed as for other vegetables, or cut in cubes or sections, and can without mashing.

Pod Vegetables.—This class includes peas, green shell beans of all kinds, string beans, and okra. String or hull according to kind. Cut string beans in inch lengths or leave whole. Blanch in steam if possible.

A cloudy appearance of the liquid in canned peas or shell beans that are keeping well may be due to several cases; to the use of water of high mineral content; to the use of peas that are old; to careless blanching that cracks the skins; or to the use of split or broken ones.

Never can pod vegetables that have stood more than five or six hours; and cool as quickly as possible when removed from the canner.

Special Directions for Fruits

General directions for fruits are the same as for vegetables, except that wth many fruits no blanching and cold dipping is required. Fruits should be fresh, firm, and not overripe. Remove stems, leaves, and imperfect fruit, and wash to remove sand and dust.

Soft Fruits.—Such as sweet cherries, peaches, apricots, plums, raspberries, strawberries, blackberries, blueberries, and similar fruits. With the exception of fruits that are pared, do not blanch. Pick over and hull berries, place in strainer, and rinse by pouring cold water over them. Pack carefully at once in hot jars. Blanch and cold-dip peaches and apricots, pare, cut in halves, remove stones, and pack closely in jars.

(Use thin or medium-thin syrup according to tartness of fruit.)

Sour Fruits.—Sour cherries and plums, cranberries, gooseberries, and currants are included in this class. Blanch cranberries and gooseberries as for other products. A more satisfactory method for sour cherries is to stone them, drain thoroughly through cheese-cloth and reserve juice to can by itself. The cherries are much nicer, and the juice is a delicious drink for hot weather. Combned with apple juice the cherry also makes a delicious jelly. Instead of the usual method, try this for sour or strong-flavored plums: Wash, place in an enamel-lined basin, put in steamer, and steam until about half done. Pack at once in hot jars and sterilize for half the required time. Use the juice which collects in bowl for jelly. For sour fruits use medium-thin or medium-thick syrup as preferred.

Hard Fruits.—This class includes apples, pears, pineapple, and quinces. Blanch and cold-dip quickly, and cut in halves or sections as desired. If blanched after paring, some of the flavor is lost. Pineapple is an exception; pare, remove eyes, and cut in cubes or slices before blanching. Use medium thin or medium thick syrup according to taste.

Syrups for Canning

Syrups for canning are made by boiling sugar and water together until of the desired consistency or "density." A simple formula is three quarts water to two quarts sugar boiled to a thin, medium-thin, medium-thick, or thick syrup.

Thin Syrup.—Boil until sugar is dissolved but syrup is not sticky. (Density 12 to 20 per cent.) Use for peaches, mild apples, or pears to be used for salads.

Medium Thin.—Boil till syrup begins to thicken, and becomes stocky when cooled on finger tip or spoon. (Density 20 to 40 per cent.) Suitable for blackberries, currants, blueberries, etc.

Medium Thick.—Boil till syrup rolls or piles up over edge of spoon when it is poured out. (Density 40 to 50 per cent. Use for strawberries, red raspberries, pineapple, and any sour fruit.

Thick.—Boil till so thick that syrup pours from a spoon with difficulty, but remains smooth. This is used only for preserves.

GENERAL DIRECTIONS FOR COLD-PACK METHOD

1. Use sound vegetables and fruits. Can peas, beans, corn, string beans, and all kinds of greens on the day they are picked. Do not attempt more at a time than can be done properly.
2. Put canner with required amount of water over fire to heat. Put the jars into the canner while the water is cold, or into a large pan of cold water, so that they will be hot when the vegetables are ready. Fill teakettle or large kettle with water to heat for blanching and filling jars.
3. Wash, clean, and prepare for blanching. The time required for blanching is given in the table below. To blanch, place the prepared product in cheese-cloth or in a wire basket and put in steamer, or boiling water to cover for the reqired time. Blanching loosen the skin so as to remove it with little loss of pulp; removes strong or bitter flavors, and objectionable acids; and reduces the bulk so that there shall be no shrinkage in the jars.

   Always blanch cauliflower, cabbage, and all kinds of greens in steam instead of boiling water, in order to prevent the loss of vegetable and volatile oils.
4. Remove from boiling water and plunge two or three times into a large pail of cold water, to harden the pulp, and check the flow of coloring matter. Do not let stand in cold water.
5. Prepare for packing by removing the skins and cores, and cutting in cubes,. slices, or sections when not to be canned whole.
6. Pack closely in hot jars to within half an inch of the top. With vegetables add one teaspoon salt to a quart. For corn, peas, and other vegetables containing sugar it is an improvement to add two or three teaspoons sugar. Fill jars with boiling water. With fruit add boiling syrup.
7. Adjust rubbers and tops, and snap the top bail, leaving the lower bail loose during sterilization. If Mason tops are used, screw as tightly as can be done with thumb and little finger. If absolutely tight there is danger of breakage.
8. **Sterilization.**—When filled put jar at once into canner; the few minutes extra time for those put in first will do no harm. When all the jars are in, cover canner tightly and begin to count processing time when the water boils vigorously. Be sure that the water covers the containers to the depth of one or more inches; otherwise liquid will enter the canner from the jars. Keep water boiling hard all the time. (See time table.)

   Sterilization is sometimes called processing. It is the most important part of the work, for by long boiling all bacteria, spores, and other germs are destroyed. It is well not to cook longer than the required time, as it causes shrinkage, and softens the product overmuch.
9. Remove jars from canner, seal, and turn unside down to test for leakage. If there is a leak from an imperfect rubber, replace with a good one, and return to canner for five or ten minutes. Place jars upside down on a cloth until cold. Cool quickly as possible, but keep out of a draft to prevent breakage. Do not cover.
10. Store in a cool, dry and dark place. If exposed to light, wrap or cover with paper, as direct light often affects the color, sometimes bleaching the product, sometimes darkening it. Continued dampness decomposes rubbers, thus causing spoilage of product.

Time Table for Vegetables and Fruits

Products	Blanch or Scald	Sterilize in Hot-Water Bath
String Beans	5-10	120
Green peppers	5-10	120
Cabbage	5-10	120
Brussels sprouts	5-10	120
Cauliflower	3- 5	60
Greens, all kinds	15	120
Green shell beans	5-10	180
Peas	5-10	180
Sweet corn	5-10	180
Pumpkin and squash		
Mashed	30	90
Cubes	10	90
Kohl-rabi	5-10	90
Carrots	5-10	90
Parsnips	5-10	90
Beets	5-10	90
Turnips	5-10	90
Sweet potatoes	5-10	90

Products	Blanch or Scald	Sterilize in Hot-Water Bath
Tomatoes	1-2	22
Strawberries		16
Blackberries		16
Blueberries		16
Sweet cherries		16
Mild plums		16
Peaches	½	16
Apricots	½	16
Grapes		16
Currants	1	16
Gooseberries		16
Sour cherries, plums	1	16
Apples	1-2	20
Pears	1-2	20
Quinces	1-2	30
Pineapple	5	30

The time requirements given above are based upon altitude of 500 feet above sea level. For every thousand feet increase in altitude, add 10 per cent to the time given.

HORTICULTURE.

DISEASES OF VEGETABLE CHILDHOOD

When your seed-bed was made, plant food was doubtless incorproated in the soil. But little plants, like growing children who need slices of bread and butter between meals, demand something more than the manure you forked into the ground. You can supply that need by a tonic application of one or more fertilizers. Bone emeal, nitrate of soda, commercial fertilizers, wood ashes, sulfur and lime—all are tonic in their effeect on vegetable lifee

But in applying them you must act with discrimination, for each has its particular function in aiding plant growth, just as quinine, strychine and belladonna have each their specific use in the curing of disease. Nitrogen plays the most important part in the growth of leaves and succulent stems and therefore is particularly valuable in the production of such crops as cabbages, lettuce, Brussels sprouts, spinach, kale, Swiss chard, endive, celery, sweet corn, and asparagus. Also large amounts of nitrogen are necessary in growing onions.

However, there are many forms of nitrogen, and this fertilizere is valued largely accordinig to its availibility, that is, according to how quickly the plants can get it. Nitrate of soda dissolved in water makes a plant food that is available the minute the water has sunk into the ground. Hence nitrte of soda is the quickest of all the stimulating fertilizers named. Stable manures, dried blood, tankage, bone meal, and other organic matter that supplies nitrogen must rot before the nitrogen content is available to plants. Nitrate of soda is very costly just now, yet for the mony invested it probably gives larger net returns than any other fertilizer.

Use Nitrate of Soda with Care

When your lettuce plants are three inches high, give them a little nitrate of soda and apply more three weeks later. Scatter a pinch of the stuff about each plant and rake it into the soil. A mere pinch is enough, for nitrate of soda is so powerful it will kill the plants if you apply too much. The best way to use it is to dissolve it in water at the rate of an ounce to a gallon, and sprinkle the soil about your plants with the liquid. Even then you will have to be careful, especially if it is a wet season.

Some years ago a friend of ours had some unusually fine young plants that suddenly began to droop. There was no visible cause for the trouble, and the gardener suspected that a cutworm had been at work below the surface of the ground. With his pocket-knife he careefully scraped the earth back from the stems of the plants until he laid bare the roots. There he found the trouble. On the roots were tiny globules of nitrate of soda. He had been watering the plants with a solution of that fertilizer. It was a rainy spring, and the excesisve rainfall had carried the dissolved fertilizer down into the earth much faster than it would ordinarily have gone. The result was the accumulation of the little globules on the roots. Once these were scraped off, the tomato plants regained their vigor.

Bone meal, tankage, manures and other forms of nitrogen may be applied freely about young plants, since they give up their plant food slowly as they rot. You must be careful shrd as they rot. Yet care must be used when applying hen droppings. They are one of our most concentrated manures. The best way to handle hen manure is to pulverize the dry droppings—incidentally hen manure should be kept perfectly dry—and mix them with an equal or even greater bulk of soil. The resulting mixture can be safely worked into the soil about plants, but care must be taken to prevent any of the manure from coming to direct contact with the roots of the plant.

An acquaintance of ours tried hen manure in his garden one summer. Being unacquainted with its properties, he put a quart of pure hen droppings under each of his squash hills. They started out like Jack's bean stalk, being hustled along by the heat generated by the manure. But when the roots grew long enough to reach into the manure, the squash vines turned a sickly yellow and soon died.

The Importance of Potash

Potash is especially important for the root crops, such as radishes, turnips, beets, parsnips and carrots. Potash is particularly good for potatoes. It enters largely into the composition of many other vegetables. Just now potash is practically impossible to obtain. Potash came mainly from Germany, and we have succeeded in producing but little in this country. The liberal use of potash tends to make the soil sour. Sour or acid soil is sweetened again by the use of lime. It happens that wood ashes contain a large percentage of potash and considerable lime. Hence wood ashes will be found useful for most root crops. There is one notable exception however. This is in the case of potatoes. Potatoes thrive best in an acid soil, and neither lime nor wood ashes should be applied to them. At the Virginia Truck Experiment Station lime was applied to various crops to observe the effect. The cabbage crop was greatly increased; in fact the yield of all crops except peas and beans was markedly increased. It will be well for the home gardener to bear these facts in mind, for lime can stil lbe obtained in any quantity desired.

Garden soils are very likely to be deficient in phosphoric acid, and without this necessary ingredient plant growth is limited. Phosphoric acid is obtainable in various forms of fertilizers that are popularly termed "phosphate." The most economical and most effective way to apply any of these plant stimulants is to wait until your plants are well started, like the lettuce plants, and then apply the fertilizer either along the rows or close about each individual plant in the row, raking the material into the soil after scattering it. Thus applied, these vege table tonics will almost certainly result in strong, sturdy litplants.

Garden Children Have Their Troubles

But no matter how well and vigorous children are, they are stil liable to certain ailments, and children of the garden are no exception. Bugs and blight, including mildew, are the enemies that call for the use of the spray pump. For a small garden one can get along with a tiny hand pump that costs fifty or seventy-five cents and hold perhaps a quart of liquid. For a good sized family plot some kind of portable sprayer that holds three or four gallons will be found most suitable. These can be obtained for seven or eight dollars and will last indefinitely. If you buy one, by all means purchase one with a brass container, even though it does cost a little more. The galvanized containers will sooner or later corrode; the brass is not affected by spraying materials. These pumps are suspended from the shoulder by a strap. So supported and tucked under the left arm, they are easily handled, even though they contain many pounds of liquid. A single pumping charges them with compressed air which will force out the liquid for perhaps ten minutes. Thus one can walk through the rows of plants, applying the spray mixture as one goes. With this rapid system an entire garden can b esprayed in a short time.

Blight and mildew cause plants to turn sickly-looking and shrivel up. Potatoes are susceptible to blight, particularly the early varieties. Blight and mildew are caused by spores that multiply with incredible rapidity when wet. Hence rainy seasons are particularly bad for blight and mildew. Plants susceptible to these diseases should be sprayed when they are two or three weeks old, and thereafter spray material should be applied to them every ten days or two weeks. It is particularly advisable to spray before a rain rather than after a rain. When wet plants are handled, there is danger of spreading disease germs. Hence beans, peas, melons, cucumbers and other plants subject to mildew or blight should never be treated when they are wet.

Melons, squashes and cucumbers form a little trinity that suffer similarly from bugs and disease, hence require similar handling. For blight and mildew spray them when the vines begin to spread. Spray potatoes for blight, applying the liquid to both the upper and under sides of the foilage. Peas are also subject to mildew. Brown rot affects plums and cherriese and peaches. Blight and rust affect celery. Beans are subject t oboth blight and pod spot. Mildew also attacks the onion. For all these diseases spray with Bordeaux mixture.

Bugs Are Dangerous Enemies

The bugs that attack garden children are of two sorts; those that chew the leaves and stems, and those that suck the juices of the plants. Each sort requires a distinct treatment. Chewing insects must be poisoned. Sucking insects must be killed by some spray that will destroy them by contact, as carbolic acid will destroy

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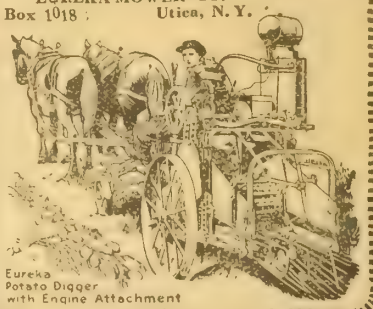

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human babies. Paris green and arsenate of lead are the favorite poisons. The powdered forms of all spraying materials are preferable to the paste forms. Mix the proper poison with your Bordeaux and so kill two birds with one stone—get both blight and potato bugs. Potatoes, cucumbers, squashes, melons and other plants that are being eaten should be sprayed with a poison. where plants are attacked by sucking insects, like scales or aphids, some spray like a tobacco concoction, or whale-oil soap, or kerosene emuls on must be used.

In an article of this length it is not possible to give in detail all the directions necessary for spraying. Every gardener should write his agricultural station or to the Department of Agricultre for free booklets on spraying and on insect and fungous enemies of vegetables. These pamphlets will acquaint one with the habits of these enemies and tell specifically how to combat them. Every gardener should familairize himself with spraying practice. In recent years there has been a marked increase in some of these plant enemies.

It is not worth while to go to the expense of buying seeds and to the labor of planting them, if in the end the gardener is to lose the fruits of his labor through lack of protection for the growing plants. And to a certain extent that is exactly what must happen in every garden unless the gardener arms himself for conflict with the marauders. Just as the gardener has his spade and hoe and fork and rake and tape line and sprinkding ca nand wheel cultivator, so he should have his spray machine and his little sheelf of spray materials. They are an essential part of modern gardening. tI is only by scientific methods that the gardener can reduce the death rate of his garden children.

THE CORE OF THE FRUIT INDUSTRY

Every apple grower knows that the core has five sections, each bearing a well-matured plump seed when the fruit is ripe. This core is the centre of reproduction. The surrouding fruit that we value so highly is but a camouflage, some say, to assist animals in distributing the innermost seeds when the ripened fruit has .fallen Now the orcharding industry has a core essentially like that of the fruit which it markets This core has to do with the essentials to the production of best crops It, like the apple core, consists of five distinct parts—to wit, first, proper variety of fruit; second, proper mechanical condition of orchard soils; third, the effective control of insects and diseases; fourth, proper supply of orchard plant food; fifth, proer marketing of the produce.

Granted that each of these essentials is given its merited attention, the growth, blossoming and fruition of a satisfactory fruit industry is assured. Space will not permit our discussing each of these essentially important factors but we shall confine our remarks to that factor which has to do with the early feeding of the crop, which function latest orchard investigation has shown absolutely determines the strength of "set" of fruit and the development of the fruit itself.

The long-time orchardist will possibly be inclined ta ask why the orchard should not need feeding. Its trees send out their extensive root systems far and deep into well prepared soils. Proper pruning prevents excessive drafts upon the root system of the tree, while care to other essential factors, with the exception of plantfood, keeps the tree in a comparatively healthy condition. But this is the very point. . A man may be healthy and may not overtax his strength, but if he does not have a better balanced supply of plantfood than he can get from hunting and fishing under normal conditions, he is unable to keep up his maximum energies. Just so with the orchard. The growing tree, although it seems a much stronger plant than the flowering plant of the home or the tomato of the garden, is bulit up of cels just the same as are the tender plants. These cells are equipped esentially the same as the cells of other crops, and require like nourishment if they are to thrive and reproduce both in foilage and fruit.

Starved Orchards

A notable instance of orchard starvation is reported by the Ohio Experiment Station. This station some years ago inaugurated a study of the extensive orchards of the Ohio Valley, which orchards had ceased to produce a satisfactory return. The fruit trees blossomed in profusion. Their foilage was beautiful to behold, but when it came to setting of fruit there was not sufficient strength to maintain the draft upon the soil. The result was disappointment and loss instead of a thriving orcharding industry. The Ohio Experiment Station found that the shortcoming of this section was lack of plant food. In view of this fact it inaugurated an extensive fertilizer demonstration, which, in the course of a litle over seven years, brought back many of the orchards, reviving them, and in fact developing them far beyond the former important orcharding industry of that territory. Two systems of orchard practice were investigated, the sod and the cultivated orchard. In both instances, what were considered suitable fertilizers were applied in sufficient quantity to materially nourish the apple trees. In fact in 1914 the rows of Ben Davis apple trees shown on the front cover of this issue of the Canadian Horticulturist, containing 12 trees each, produced 49 barrels of large marketable apples, where fertilizer was applied, but only 20 barrels of inferior fruit where nothing was added. In 1915 these same rows yielded as follows: Fertilized, 46 barrels; unfertilized, 9 barrels.

Maintaining Humus

There were two things to which the orchardists paid special attention. One was the upkeep of humus, which was accomplished by the addition of one bale of straw around each tree annually and a proper supply of plantfood, which the station supplied in 12½ lbs. of mixture of fertilizer made up of 5 lbs. of nitrate of soda, 5 lbs. acid phosphate, 2½ lbs. of potash. This same uqantity of plantfood is supplied by 12½ lbs. per tree of a fertilizer analysing 6 per cent, ammonia, 6.4 per cent. phosphoric acid and 10 per cent. potash. Quickly available ammonia caused rapid tree growth, along with vigorous twig and bud production. Phosphoric acid hastened ripening and helped the setting of fruit, while potash assisted in laying down starch and gave general vigor to the tree. The Ohio Station, in speaking of the effects of fertilizing this orchard, says: "The first noticeable effects of fertilization in these starving orchards were discovered within two weeks from the date of application where the quickly soluble promptly available nitrate of soda had been applied around the trees, either alone or in mixture with other forms of plantfood. Dark green circles or "belts" around the trees caused by the thin mixed growth of weeds and grasses, taking on a much deeper, richer shade of color were distinctly outlined. . . . These changes were remarkably noticeable within a month, as the fertilized rows of plants were compared with those left unfertilized."

Orchard fertilization has also been extensivly examined by Pennsylvania Agricultural Experiment Station, who have reported on their tests in bulletin No. 153 of that Station. The Pennsylvania orchardists made tests of the application of ammonia and phosphoric acid and of complete fertilizers. When applied to old orchards they found that in one orchard the increase per acre per annum from the addition of nitrogen and acid phosphate was 265 bushels per acre, while that on another orchard was approximately 309 bushels per acre. When plantfood was applied to young growing orchards, the following results were obtained:

Gain Over Normal Years

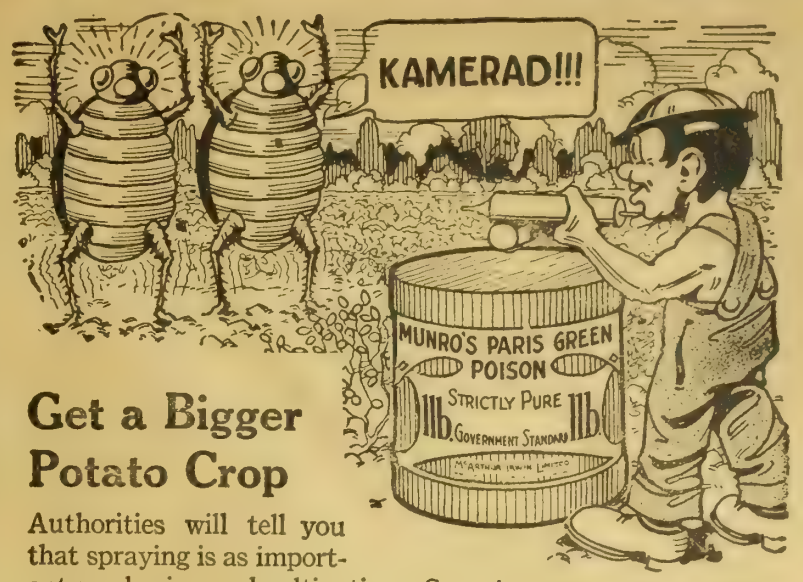
Nome of Orchard	Nit. & Phos. Acid	Complete Fertilizer
Strode	45.9 bus. acre	46.4 bus. acre
Tyson	55.1 bus. acre	89.9 bus. acre
Wertz	15.9 bus. acre	59.0 bus. acre
Mynard	17.1 bus. acre	69.7 bus. acre

This station. too, has been able to demonstrate that trees can be profitably fed like tender plants and growing animals. The station says: "The crops on these plots (Brown orchard) in 1917 were 25.3 bus, per acre on the unfertilized trees, and 662.6 bus. on those reeceiving fertilizers.

The Value of Tests

Tests and findings in nearby or distant locations are of precious little use unless applied to our local conditions . A great deal is being said about soil characteristac and their influence on crop production, and we do not for a minute wish to minimize the importance of the soil type; nevertheless, the soil side of the question is but half of the problem. Apple trees use the same essential plantfoods whether they are grown in the eastern counties of this province, or elsewhere. This is a point which should constantly be kept in mind by business orchardists. Moreover, it should be kept in mind that the soil analysis of the sections where the Ohio and Pennsylvania experiments were carried on, do not differ materially from the analyses of the soil in many of the orcharding sections of this province. The only material difference is that in Ohia and Pennsylvania the apple crops have a much longer growing season in which to mature, which fact in itself only emphasizes the greater need of paying attention to the fertility side of orchard management in Canada.

(Continued on page 990)



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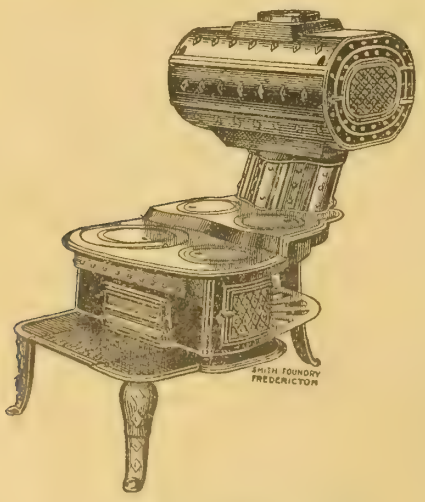

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FITTING COWS FOR LACTATION. A GOOD RATION AN EXERCISE ARE ESSENTIAL

All animals, when in proper environment and under normal conditions, naturally take on flesh during pregnancy, the reserve being used in milk production when the young is born. As we expect a dairy cow to give much more milk than her calf requires, it is only reasonable that she should be in extra good condition of flesh at calving time. A further consideration is the procuring of strong, well-nourished calves which cannot be expected from poorly-nourished cows. Grain fed during the dry period has been found to give greater returns than the same amount of grain fed after calving, these returns being in the form of a more vigorous calf and increased milk production. To have the cows in proper condition of flesh, one of the first requisites is to give them sufficient rest between lactation periods . The cow that is milked up to within two or three weeks of calving may pile up quite a record for that year, but she will surely fall off in the next lactation period Each cow should have from six to eight weeks of a rest period.

The feeding of the cow during this period will depend upon her condition when dried off. If she is in good condition of flesh then very little more than a maintenance ration is necessary, but the feeder should watch that she does not lose her thrifty condition. If she has become thin and run down then a liberal ration should be allowed. The character of the ration need not differ materially from that fed to the milch cows. Pasture, supplemented by silage or soiling crops in summer, and roots or silage and legume hay in winter should be sufficient for the cow in good condition. Those in poorer condition should receive grain in addition up to six or seven pounds per day if necessary. It is important at all times that dairy cows receive a laxative ration but particularly so just at calving time. To this end, the grain ration should consist of such laxative feeds as wheat bran and oil cake together with either ground oats, barley or corn, preferably the former, in equal parts. For every 100 pounds of the above grain mixture there should be added 1 pound of ground rock phosphate, charcoal and common salt. The salt is a necesity in the ration while the other ingredients act as a tonic. Cows not receiving the grain should be fed some of this tonic mixture separately, or the last day or two before calving the regular ration should be replaced by bran alone which should be fed up to calving time and for a few days afterwards.

To ensure the best results from the above method of fitting the cow for her lactation period she should be allowed plenty of exercise. Running with the milch cows in summer and being turned out in the barnyard for an hour or two daily in winter will meet requirements in this regard. This exercise will be found to do away with many of the calving and udder troubles experienced with cows high-fed on heeat-producing foods just previous to calving.

ADVERTISING IN BEHALF OF IMITATION BUTTER

One of the aproved methods of "putting anything across" in Canada is to circulate through the press of the country carefully designed articles without any indication of being advertisements, which are calculated to spread a false impression of the question, and bolster it uy from beneath without attracting the opposition of those who are opposed, until the damage is done and a great "public opinion" is developed which can not be easily shaken or moved.

A fair illustration of this principle is found in the oase af the 1911 federal election, when the tariff issue was obscured by the patriotism cry. Today it comes up in another form, in the campaign being waged from behind the scenes to make the people of Canada favorable to a continuation of the market here for imitation but-

There's Nothing Like It.
THE FAMOUS
RELIABLE CHURN

If you are tired of "SHAKING" the butter from your cream, investigate the "Reliable" Churn.

It "CHURNS" for you just as effectively as did mother's old fashioned "Dash." Gets "all of the butter from the cream," and many times more easy.

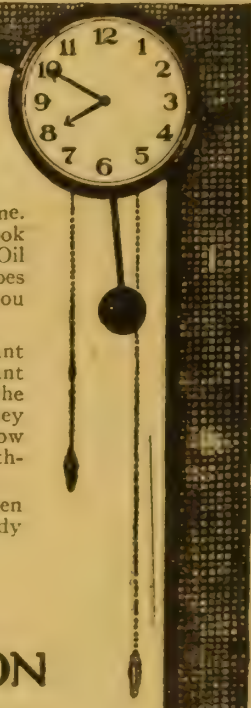
Its clever mechanism gives that efficient perpendicular stroke, but with a high-geared rotary drive, and it is easier to keep clean, too, just lift out the smooth, white, [illegible] glazed jar and rinse.

You can get a book which illustrates every part, gives you full information of hand drive (which can be operated by a child of six) belt drive and electric drive Reliable Churns.

POST CARD O. K. DO IT NOW.

GLOBE ENGINEERING CO., Limited
HAMILTON, CANADA.

Compare Fuel Costs



Reduce the cost of cooking in your home. Use the economical New Perfection Oil Cook Stove that burns Imperial Royalite Coal Oil instead of costly coal and wood—that does away with ash pan drudgery—that gives you gas stove convenience.

The New Perfection provides abundant heat for every cooking purpose—an instant and intense heat concentrated directly on the cooking—the result of the Long Blue Chimney burner. Its clean flame, set high or low stays put—needs no watching—burns without smell or smoke.

The New Perfection keeps the kitchen cool in summer—clean the year round. Already used in more than 3,000,000 homes.

Select your size and style to-day.

For Sale by Dealers Everywhere

NEW PERFECTION
THE ALL SEASON
OIL COOKSTOVES

IMPERIAL OIL LIMITED
Power - Heat - Light - Lubrication
Branches in all Cities

A Clean Churn and -

Windsor Dairy Salt

Made in Canada

THE CANADIAN SALT CO. LIMITED

All Cows Are Alike to the EMPIRE

HARD milkers or easy milkers—nervous or calm cows—large or small teats—even or uneven udders—they are all alike to the Empire. It milks them all. And Empire teat cups stay on without surcingles or harness.

EMPIRE MILKING MACHINES

are now equipped with our new Super-Simple Pistonless Pulsator. No wearing pistons to leak vacuum. It operates teat cups with absolute regularity. Cows like it. It soothes and quiets them. Results in greater milk flow and also increases period of lactation.

Write for 1919 Catalog No. 26 and name of nearest dealer who will demonstrate the Empire for you without obligation.

The Empire Cream Separator Co. of Canada, Limited
146 Craig Street West
MONTREAL
Toronto Winnipeg

J. CLARKE & SON, LIMITED and THE LOUNSBURY CO., LIMITED
Distributors for the Province of New Brunswick

ter, which can scarcely be called oleomargarine, because no "oleo" enters into the composition of the latest margerine, which is composed of vegetable oils entirely.

(Incidentall, this is one of the ways in which the industry works. It got a footing on the ground floor of cheapness, but Canada's animal husbandry was protected against the vegetable product, by its explicit exclusion. Later the packers were able to have this restriction quietly withdrawn, without attracting public attention in any way.)

It has been found that law-breaking is continually associated with the oleomargerine industry, because its very life depends upon the fraud that it is as good as butter, and may sell as such to the unwary. This has been the history of the industry in the United States, in spite of repeated attempts to kep the industry in hand.

The intent to defraud comes to light again when one buys any oleomargarine in Canada. Coloring matter in it is explicitly forbidden by our Canadian laws, but every seller of oleomargarine will tell his customer that he can go to the drug store and buy the coloring matter, so that it can be passed on as butter.

Fraud is also evident in the number of reading notices which are cropping up in the papers of Canada, in regard to the general advisability of having the spurious butter in the Dominion. Spacious arguments are therein advanced in its favor, and everything possible is done to remove the prejudice. But not all newspapers are willing to pass this fraud on as their own opinions, but insist on labelling the articles as advertisements, nominally, at least. This was done by the Calagry Albertan in a recent issue, when at the close of an article a half column long, it placed the letters, ',Advt." Not everybody would recognize this calabistic sign as indicating the fact that the news item was paid for by some one, but it goes as a salve t othe printer's conscience, and is vastly better than the practice of others of allowing it to go out as the editorial and unbiassed opinion of the paper itself, and not, ts in fact, a part of the wealthy packers of Canada and the United States.

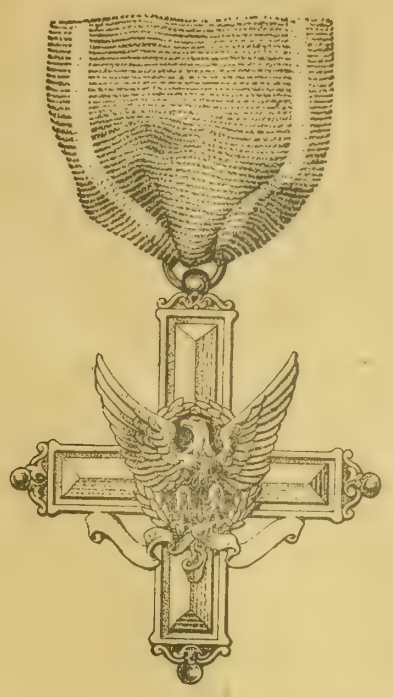
The news item in question blandly closes with the peroration: "If oleomargarine is made so good that its competition is feared by the butter industry, if it is clean, wholesome and nutritious, and is sold on its merits at reasonable prices, it clearly has a high and legitimate place among our standard food products.—Advt."

But when the product which it lauds is recognized as a fraudulent imitation of butter, of lacking in the growth element necessary for children, and flourishing in fraud and illegality, its legitimacy is obscured.

CANADA'S 50-lb. COW

Rolo Mercena Dekol, owned by J. B. Hanmer. Norwich, Ont., has recently completed a seven-day test, which makes her the first fifty pound cow in Canada, the second fifty pound cow in the world, and, which will give even more satisfaction to Canadian Holstein breeders, she exceeded the 50-lb. mark by a sufficient margin to make her the world's greatest seven day producer of butter fat. The following, we believe, are all world's records: 51.92 lbs. of butter in seven days; 200 lbs. butter in 30 days; eight pounds buteer in one day. In her best day she gave 125 lbs. of milk. It is especially worthy of note that Rolo Mercent DeKol was in thin condition at time of calving and was being milked only twice a day when the supervisor arrived. The record is, therefore, in no sense an artificial one, as was the case with the former title holder who had been dry a long time before the test started, was loaded with fat and went through her test in a thoroughly equipped test barn.

The new record gives to Canada the disctinction of owning both the butter and milk champions of the breed in official tests from seven to thirty days the milk records already being held by Mayo Echo Sylvia. This is a record of which Canadian Holstein men may well be proud.



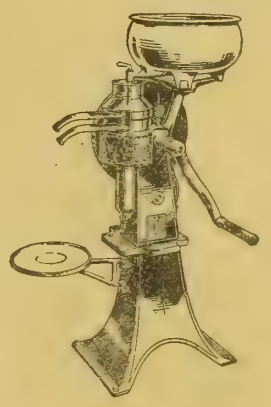
DE LAVAL

"The Distinguished Service" CREAM SEPARATOR

There is service built into every part of a De Laval. Forty years of leadership in cream separator construction have made it the unquestioned leader in close skimming, light running, easy cleaning and durability.

The De Laval is sold through local agents who are well informed with regard to the machine and Company's policy. These agents localize the Company's service. They carry repair parts in stock and are trained to give intelligent advice and prompt help, in order to insure complete separator satisfaction and continuity of service.

There is a De Laval agent in every dairy community throughout the world—a constant reminder of the fact that when you buy a De Laval, the Company feels that its obligation to you has just started.



It is because of these facts that the De Laval has been justly called

"The Distinguished Service Separator."

The De Laval Company, Ltd.

Montreal Peterboro Winnipeg Vancouver

LIVE STOCK.

NO BETTER TEST OF REAL STOCKMAN THAN THE MANNER HE CARES FOR YOUNG ANIMALS

It has been truly said of the newly weaned animal that upon the care and management it receives during the few months after it has been deprived of its mother's milk and summer pasture, both of which are usually taken from it at the same time, depends to a great extent its future usefulness. If the change made is too violent and the treatment given without very much consideration, a serious setback is bound to occur, for the young animal is passing through one of the most critical periods of its life. Neglect at this particular time is largely responsible for the great loss suffered by the live stock industry. Discussing this subject, Prof. B. E. Carmichael, of the Ohio Experiment Station, says:—

"What are the needs of the rapidly growing yongster that is deprived of the abundant and efficient supply of milk that nature has provided through its dam? The fact that the young animal is growing rapidly should supply more than a hint that there is need for a generous amount of feed, since rapid growth or rapid production of anything by farm animals, is impossble without an abundant supply of feed. If there is any one attempted economy which is generally poorly advised it is the one which limits the food supply for growing animals to so low a pont that it is not possible for them to grow normally. While it is not necessary for the breeding or work animal to carry through its life nor even through the period following weaning, the large surplus of fat with which the sucker is often provided, yet there should be maintained a reserve supply of fat that will prevent the animal from becoming much emaciated by hardships which are sometimes encouraged in the form of accident or disease, or attacks of parasites, internal or external.

Feeder's First Lesson

The well nourished calf or foal, or any other youngster about the barn, gets abundant supply of nutriment and gets it at frequent intervals. This is the first lesson to the caretaker who is to look after the welfare of the farm weanlings. Never more frequent feeding of the newly-weaned animal than is given to the older ones is, as a general thing desirable. Whatever the kind of animal that is being weaned, care should be exercised to keep it doing well and it is well worth while for the owner to watch it closely and give the little attentions here and there as needed. While it is not literary true that "the eye of the master fattens his cattle," yet the owner who does not keep an eye on the stock during critical times is likely to have stock which is far from prosperous.

Careful attention should be given to the kind of feed that is supplied the youngster that is newly weaned. Growth should be promoted by the use of feeds which carry an abundance of protein and mineral matter without which normal growth is not possible. Such nutriment is provided by various kinds of green forage, skimmilk, tankage or meatmeal, linseed meal and leguminous hay, and these or similar feeds should be used in connection with the farm-grown grains that are most abundantly available, if the best results are to be secured.

"How often it is found that the youngster comes out of the winter conditions weighing less than it did when it left its mother six months before. The loss of weight that so often accompanies the weaning process may be avoided, or at least reduced materially, if the young animal is taught to eat grain before it is weaned. If not accustomed to grain before being weaned, care should be exercised in introducing grain into the diet of the young animal. Overfeeding is to be avoided, even though generous feeding is desirable as soon as the animal has become accustomed to the new ration. Many good young animals are given a setback by the combination of neglect and laik of suitable feed which makes ti difficult to get them into desirable condition before the trying winter months are well over.

A Dry Bed and Dry Back

"Shelter from extremes of temperature and from storms, especially the storms which combine cold, wind and rain, should be provided. No animal should be subjected to exposure of this kind, and the weanling is especially susceptible to its damaging influence, particularly if not well fed and in good condition. 'A dry bed and a dry back' are needed even during te moderately cold weather of fall and early winter. Providing them will save much feed and may avoid serious loss from diseases that result from undue exposure.

"Every unthrifty weanling causes an important economic loss. Whatever the animal, if it is worth developing it should be so handled that it will be able to perform well the service for which it is intended. Both humane and business consideration make it imperative that the weaning animal be given adequate feed, shelter and care. It is probable that there is no better test of the real stockman than the manner in which he cares for the young animals in his herds and flocks. No breeder or feeder who neglects the animals in his care is doing his full duty, and the man who fails properly to develop the animals he raises is doing much to counteract the good work that has been done in bringing farm animals to a high standard of utility. The whole matter is one in which thoughtful foresight, instead of heavy expenses, counts.

Starvation Breeds Parasites

"There is a particular need for guarding the young animal from the damage that results from heavy infestation of parasites. Though there is but little doubt that a large amount of the damage credited to parasites is due to partial starvation, yet more than good feeding is often needed. There is no easy and effective way to avoid all of the losses from parasites. It is advisable to give the young animals access to pastures and quarters that have not been used by animals that are infetsed by the kinds of parasites that are likely to attack the young ones; useful though this precaution is, it alone will not always suffice, and it is frequently necessary to give the animals definite treatment in order to free them from the parasites that they harbor in sipte of the careful precautions that it has been undertaken to follow. Seldom indeed does a single treatment rid an animal of all the pests for which it is administered. Enormous losses may be at least pratly avoided by giving careful and persistent attention to the holding in check of the parasitic enemies that are so harmful when harbored in large numbers by young animals."

TEASING BULLS AND STALLIONS

Many good bulls and horses are spoiled every year by thoughtless children and grown-ups. An animal once spoiled by careless handling or tinkering, is hard to be broken of it, so strong is habit, and usually is sold at a reduced price because "his conditions" are no good.

Most horses are ruined while they are still colts. Running from them while they are playing is bad policy

Standard Stock Feed For Sale

A Valuable Feed for all Classes of Stock

THREE thousand tons of this stock feed is still available for distribution, and farmers should order now before supply is exhausted.

This Standard Stock Feed which is in store at Ft. William, consists of recleaned elevator screenings.

By actual feeding tests at various Dominion Experimental Farms it has been proved excellent for dairy cattle, while for finishing pigs it is equal to barley. For fattening lambs it gives very satisfactory results, as well as for fattening steers. It also makes an excellent poultry feed. It contains 14% Protein, 5% Fat and 8% Fibre.

Over fourteen thousand tons of Standard Stock Feed have been sold and distributed by the Feed Division, and have given excellent results. Order a car load now as the quantity is limited. Be sure to state whether you require it *ground* or *unground*.

UNGROUND
In Bulk, per Ton
$26
f.o.b. Fort William

Payable on Arrival

Orders should be sent direct to Feed Division, Live Stock Branch, Ottawa, for straight car lots only—(about 30 tons to a car.) Join with your neighbor: and order a car on shares. Terms—Sight draft with bill of lading attached, payable on arrival of car. Orders filled strictly in turn as received.

GROUND
Per Ton, in Bags of 100 lbs.
$34
f.o.b. Fort William

Pamphlet No. 18 giving full particulars sent on request with samples of the feed.

Live Stock Branch (Feed Division)

The Dominion of Canada Department of Agriculture

OTTAWA CANADA

505

The Only Breed

which can furnish both market topping steers and cows which are profitable milk producers, is the Shorthorn.

More pounds of beef, more milk, more profits.

Write the Secretary for free publications.

Dominion Shorthorn Breeders' Association

W. A. DRYDEN, *President*, Brooklin, Ont.
G. E. DAY, *Secretary*, Box 285, Guelph, Ont.

Shorthorns

and may result in making a very vicious animal. Fences should be kept up around young stock. When driving load light, rest often, and see that the collars fit perfectly.

Bulls that have been teased and become vicious are a source of danger as well as annoyance about the place. Careful handling will keep them from becoming dangerous, but many a man who carelessly handles the bull has to pay the price for it with his own life, in doctor bills, or lawsuits.

Children should never be allowed to throw sticks and rocks at the young bull. Boys should be kept from worrying him, by driving him hither and thither in the fild.

It is needess to say at all times to keep a high, strong woven wire fence around his pasture. Have the posts of good sound timber set at least two or two and a half feet in the ground.

Don't let the young fellow learn of his enormous strength. Use a good bull nose leader to handle him by at all times. Never use just a common halter. Breaking away a few times will make his unruly.

Never go into the pasture unprepared to defend yourself from his attacks. You do not know when he will take a vicious notion. Do not use a dog unless absolutely imperative, then use one that will catch and hold until you say to let loose.

THE HIGH PRICE OF OIL CAKE

The high price of Oil Cake and Cotton Seed Meal can be largely offset by the regular use of Herbageum. It enables the feeder to use more roughage and reduce the ration of expensive meals while maintaining his animals in prime condition. Cornstalks, coarse hay and straw contain a large amount of food that animals are unable to fully asimilate and they can only be given in limited quantities. Regular use of Herbageum overcomes this difficulty and much larger quantity of roughage can be profitably used and the animals maintained in prime condition with their maximum production of flesh, milk, butter or wool.

Herbageum given regularly twice daily as directed requires but 1-lb. per month for a horse, cow or hog and the cost is only 25c. per lb., which is less than one cent a day per animal.

As good calves can be raised on skim or separated milk seasoned with Herbageum as on new whole milk without it, and the pork will be firmer than flaxseed or oil cake for calves. Try it. Pigs will thrive on fresh whey and Herbageum. As good weights can be asured with hogs at six months with Herbageum as at eight months without it, and the pork wil be firmer and sweeter and the lard of a better quality.

Herbageum is without equal for poultry and when given regularly to sheep there is no trouble with ticks and sheep dips are not required, the wool clip is heavier and in every way superior.

Herbageum has been in regular use during over thirty years and all we claim can be substantiated by thousands who use it.

The Beaver Mfg. Co., Sole Manufacturers. Galt, Canada.

SHORTHORNS FOR GRADE BREEDING

After all it is the man who is breeding grade cattle and raising animals for the butcher, who decidse which breed shall flourish and which shall be discarded. It is here that the Shorthorn makes a particularly strong bid for favor, and is accorded general recognition. The meanest scrub cow is mated with a good Shorthorn bull, will produce progeny that will grow to good size and make a reasonably good feeder. For example, the second prize grade yearling steer at the 1918 Ontario Provincial Winter Fair, who was beaten in his class only by the grand champion of the show, was out of a mean little Shorthorn bull. One has only to study the grade herds of this or any other country to become convinced of the merits of the Shorthorn. Those big, roomy, square-ended grade ecows, many of them deep milkers, just the kind you would select from which to breed profitable steeers, are difficult to find outside of our grade Shorthorn herds.—G. E. Day, Sec. Dominion Shorthorn Breeders' Assoc., Guelph.

THE AGE OF CATTLE

The art of telling the age of cattle is best learned by carefully examining the teeth of numbers of calves and cattle of known age. Experience then makes perfect in "reading" the teeth. The calf has eight small white milk teeth in the front of the lower jaw. Cattle have no teeth (incisors) in the front of the upper jaw. At from 19 months to two years, the central pair of milk incisors is replaced by permanent incisors, which are much larger and broader than the first teeth. The next pair comes in at from 2¼ to 2 years 9 months. Between 3 and 3½ years, the third pair comes in and the fourth pair at 3 years 9 months to 4 years when the mouth is said to be full. Precocious, heavily fed or pampered show cattle may have their permanent incisors come in a little earlier than we have stated here, whilee stunted cattle have a somewhat later eruption of teeth. Afte four years the pincers gradually become more and more worn until at 12 to 15 years, the broad part is gone and the small necks of the teeth apper as rounded knobs in the gums.

BRITISH FRIESIAN SOCIETY

The report of the annual meeting of the British Friesian Society shows that it now has a membership of 833, and that its assets now equal nearly sixty thousand dollars. The president stated that the average price at which 931 lots sold in 1918 was seven hundred dollars.

At the meeting a resolution to permit the registry of grade cows of Friesian type and superior merit was defeated. Another resolution was offered providing that no bull shall be eligible to registry unless "out of a cow that shall have given at least 10,000 lbs. of milk in a year, or out ol a first calf heifer that shall have given at least 8,000 lbs.milk— all yileds to be certified by some milk recording society approved by the British Friesian Society." This resolution was referred to the Board of Directors for further consideration.

PRICES FOR WOOL

There has been much speculation, not only in Canada but throughout the whole sheep breeding world, in respect to the price which will be paid for the farmers' wool clip this year. It was currently reported during the early part of the winter that prices might drop as low as 40c and 50c. A little clue to the prices that seem likely to be received may be taken from the report just received from the headquarters of the Canadian Co-operative Wool Growers Limited, which company markets the wool for the Co-operative Sheep Associations in Nova Scotia and other parts of Canada, who have just sold two carloads of Maritime wool at 73c. f. o. b.

This will be very graifying news to the sheep breeders of Nova Scotia and should have a stimulating effect on sheep breeding in the Province and should also put a premium upon the farmers taking the best possible care of their wool and thoroughly posting themselves on the prevailing market prices.

Good drying winds and plenty of sunshine are ideal for hay making.

To be sure some farmers do use poor, out of date farm implements, but instead of saving them money it costs them money.

Dependability

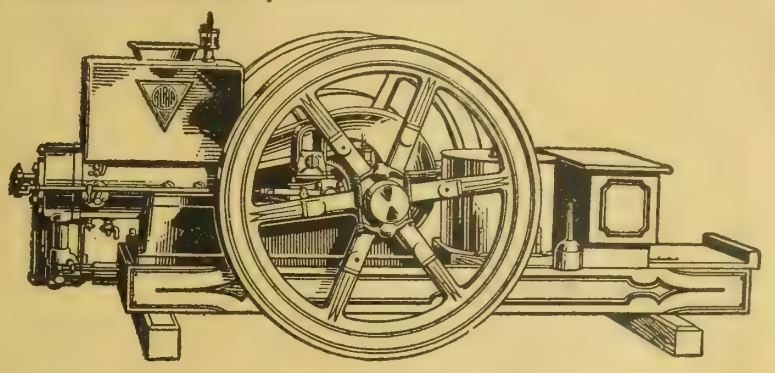
ALPHA Trade Mark

THE KEYNOTE of the ALPHA Engine is dependability. It *runs* when you want it to, day after day, and you never need to worry about it. Its simple, sturdy construction makes it dependable.

The ALPHA power rating is *dependable*; if it is a 1½ Horse Power it will deliver *at least* one-and-a-half horse power; if it is a 28 Horse Power you can bank on getting more than 28—never less.

The De Laval Company is *dependable* — the largest manufacturers of dairy supplies in Canada.

If you don't know who handles the ALPHA in your vicinity, write nearest sales headquarters for his name.



THE DE LAVAL COMPANY, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns.
Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

MARVEN'S
WHITE LILY BISCUITS

Ask for
Maritime Union
Dilicio Assorted
Dilicio Maple
White Lilly
Assorted

They
fill the
bill
exactly
They satisfy

SOLD IN BULK—IN PACKAGES—IN TIN PAILS

J. A. MARVEN, LTD.
BISCUIT MANUFACTURERS
MONCTON HALIFAX ST JOHN

GOMBAULT'S
CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $ 1.75 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Toronto, Ont.

THE HORSE

DISEASES AND DEFECTS IN EYE OF HORSE THAT LESSSEN HIS REAL VALUE

The eye of a horse is more naturally disposed to disease than that of any other farm animal, yet few horse owners or cartakers are aware of this fact . Not only is the horse very liable to have eye diseases, but he is often —more often than is supposed—afflicted with defective sight, which in it. self is more dangerous than total blindness . A blind horse will resign himself to the guidance of his driver, but against the misconception of a horse that only partially sees the surrounding objects there is practically no defence. Many horses are born with defective visions and heredity plays an inmportant part in its appearance, a fact which all horse breeders should consider. The maladies of this organ, though few in number, are frequent in their appearance, and are also very hard to control.

Common Inflammation

There are two forms of inflammation to which the eye of the horse is liable, viz., the common variety that is easily controlled, and the specific that is generally fatal to the eyesight. Common inflammation is generally sudden in its attack; the lids will be found swollen, the eye partially closed, with some weeping. It may be caused by a catarrh or cold, a blow or the presence of a hay seed or similar substance. The muscles of the eye of a horse are so adjusted that it is almost impossible to remove any foreign matter by an operation, as the horse can turn the eye completely round in the socket, thus preventing the removal of the irritating substance. In this case the best thing to do is to apply a cooling lotion made up of half an ounce of laudanum to a pint of water, when the inflammation will gradually subside. Should the inflammation or the injury be so severe that it has involved the inner structures of the eye, great advantage will be derived from smearing the eyebrows and outside of the eyelids with extract of belladonna, one ounce, mixed with half an ounce of honey.

Ophthalmia or Monnblindness

If the eye continues inflamed for three or four days, and begins to get a clouded appearance, then a more obstinate form of inflammation has commenced, and one that wilyl maintain its ground in spite of all efforts to combat it. For three or four weeks the inflammation will continue, or if it appears to yield on one day it will return with redoubled violence on the next. At length, and often unconnected with any means used to ally the disease, the eye begins to bear the light, the redness on the membrane of the lid disappears, the cornea clears up, and the only vestige of disease which remains is a slight thickening of the lids, and apparent uneasiness when exposed to strong light.

If the owner of a horse that has shown the above symptoms imagines that the disease has finally gone, he will be sadly disappoited, for in the course of six weeks it will return either in the same eye with a similar attack or the other eye may be affected. The attack again runs its usual course, and goes away again suddenly, but leaves the eye in somewhat worse shape than the former attack. This disease got the name of monnblindness, from its periodical return and some supposed influence of the moon. That planet, however, has not, and cannot have anything to do with it.

When a Horse is Most Subject to Moonblindness

The horse is more subject to this disease from the age of four to six years than at any other period. He has then completed his growth; he is full of blood and liable to inflammatory complaints, and the eye is the organ attacked from the peculiar disposition in it to inflammation, the nature and cause of which cannot be explained. Every affection of the eye appearing at this age must be regarded with suspicion. As this malady so frequently destroys the sight, and there are certain periods when the inflammation has seemingly subsided, and the inexperienced person would be deceived into the belief that all danger is at an end, the eye should be most carefully examined at the time of purchase, and the examiner should be fully aware of all the minute indications of previous or approaching disease.

How to Examine the Eye

There is nothing which deserves so much attention from the purchaser of a horse as the perfect transparency of the cornea over the whole surface. The eye should be examined for this purpose, both in front, and with the face of the examiner close to the cheek of the horse, under and behind the eye . The examination of the horse should not be in the open air, but in the stable, standing in the doorway and a little within the door. If any small, faint, whitish lines appear to cross the cornea, or spread over any part of it, they are assuredly the remains of previous inflammation. The other sign of apparent disease is a slight thickening of the lids or puckering towards the inner corner of the eye; a cloudiness, although perhaps scarcely perceptible, of the surface of the cornea, or a hazy circle round its edge; a gloominess of the eye generally, and a dullness of the pupil; or a minute, faint, dusky spot in the centre, with or without little fibre s or lines diverging from it.

General Sign of Defective Sight

Good judges of horses are very often deceived when the blindness is confined to one eye. A horse blind in both eyes will usually have his eras in constant and rapid motion,

ABSORBINE STOPS LAMENESS

from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar troubles and gets horse going sound. It acts mildly but quickly and good results are lasting. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how. $2.50 a bottle delivered. Horse Book 9 R free.

ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; heals Sores. Allays Pain. Will tell you more if you write. $1.25 a bottle at dealers or delivered. Liberal trial bottle for 10c stamps.

W. F. YOUNG Inc., 124 Lymans Bldg., Montreal, Can.

Absorbine and Absorbine Jr. are Made in Canada

HEAVES CURED

Capital Heaves Remedy is the real cure proved by 24 years of success under money back guarantee. Will send a full week's treatment free on receipt of 5c. to cover mailing. 6

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Imperial Eureka Harness Oil

—gets into the leather. Keeps it supple—looking new and strong as new. Keeps insects and moisture out. Prevents drying and cracking. Keeps breakage and repair bills down. Sold in convenient sizes.

Imperial Eureka Harness Oiler

—makes oiling easy, quick and thorough. Should be in every barn.

Imperial Mica Axle Grease

—prevents spindles wearing thin and hubs getting loose The powdered mica and grease coats both spindle and hub lining with a covering of perfect lubrication that fills all pores and smooths all rough places. Makes loads easier to haul, reduces strain on harness and horses.

Sold in many sizes—1 lb. to barrels.

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YOU'LL find big men particular about the shoes they wear--both in daily life and for special occasions, such as a fishing or hunting trip.

They insist upon quality footwear to match the trim smartness of their dress.

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AMHERST, N.S.

directing them in quick succession to every quarter; he will likely hang back in the halter in a peculiar way; and will lift his feet high as if he were stepping over some obstacle, when there is actually nothing to obstruct his passage, and there will be an evident uncertainty in putting down his feet. These signs are very often overlooked by the carless and inexpert, and a blind horse has been bought as a sound one. In blindness of one eye, litle or nothing of this characteristic gait or manner can be perceived. Although a one-eyed horse may not be eabsolutely worthless for common work on the farm, he is not nearly of the same value as one that sees well with both eyes, being more liable to get into accidents.

One way to ascertain defective sight or blindness in one eye, is to carefully note the pupils of the eyes before the horse is removed from the stable, and as he is led to the door, observe whether they both contract, and equally so, with the increase of light. If the horse should first be seen in the open air, let it be observed whether the pupils are precisely of the same size; and then let the hand be placed over each eye alternately, and held there for a while, and watch if the pupil dilates with the abstraction of light, and equally dilates in each eye.

The eye of the horse is also indicativie of his age and temper. There is placed at the back of the eye a considerable quantity of fatty substance, on which the eye may revolve easily and without friction. In aged horses and in diseases attended with general loss of condition, much of this fat disappears; the eye becomes sunken, and the pit above it deepens. One can also make nearly accurate guess at a horse's temper by a study of his eyes. A small cornea and therefore a large portion of the white of the eye visible, is looked upon with suspicion by some men wro claim from experience that such horses are dangerous. The mischevious horse is slyly on the outlook for the opportunity to do mischief, and the frequent backward direction of the eye is a certain sign that care has to be exercised in handling him. A study of all these signs and symptoms is useful alkie to breeder and purchaser, for many of the diseases and temperaments they indicate are hereditary.

MORE WORK OUT OF TEAMS

Some of the tractor boosters have done horse users a good deal of good by charging the horse with inefficiency. It has made many users of draft horses think more about the matter than they have perhaps in many a day. And they have learned a good many things which will help them to get more out of their work teams without working the teams any harder.

One of the things that nas come out of the agitation for more power on the farm is that more power can often be gained by increasing the number of horses on a machine. There was a time when all the talk was the other way—it was to use the minimium number of horses. It was quite a common argument of implement dealers that their make of grain binder or gang plow could be run with only three horses where the competitor's machine took four. Now we see it is a mistake to operate machines with only three or four horses if a fourth or fifth will get more ground plowed or grain cut. It is not necessary to buy the extra horse, so there is no advantage in saving him. On many farms this extra horse has been turned out to pasture and perhaps got in mischief, whereas he might have been helping in the field.

Care is always a big factor in getting the best work out of teams. Who has not observed that some men have their teams in good shape and seem to get just as much work out of them as others whose horses always show their ribs and seem worked to death? A good horseman will find lots of ways to keep his horses in good temper and condition. You will find such a man on the best of terms with his charges. He will talk to them kindly, worry them as little as possible, adjust the harness properfly, devise a hitch so th elazy horse is made to keep up his end of the evener, lift their collars when they are pulling hard, especially when they start spring work, feed and groom them well, and in numerous ways make their work as easy as possible, at the same time getting the most work out of them.—Drover's Journal.

RIGHT WAY TO PICK UP A HORSE'S FOOT

There is more than one safe way to pick up a horse's foot.

"In picking up a hind foot," says an army officer, "the man should stand with his outside foot advanced and his inside hand on the point of the horse's hip; run the outside hand down the outside of the leg, working to the back of the leg, below the hock, until the hand is just above the fetlock; push slightly against the hip with the inside hand to induce the horse to shift his weight, and raise the foot by pulling it forward and up. When the foot is raised swing the inside foot forward—to the horse's rear—and support the horse5s foot on the knee.

"If an extended examination or one in which it is desired to use both hands, is necessary, the outside foot can be brought alongside the foot supporting the horse's foot and the latter can then be rested on both knees. I never place the hind foot between the knees—only the front foot.

"In raising a front foot use the hand nearer the horse and induce him to shift his weight by leaning as heavily as necessary against his shoulder."

WATCH THE SHOULDERS

As hot weather is now coming on, farmers will have trouble with their horses' shoulders galling. In case of severe gall, many farmers turn their horses out till they heal, thus causing inconvenience and expense to the owner of the horse, as he cannot well agord to lose the service of his horse at this time of the year.

We find in the case of a gall it is not necessary to lose the service of the horse, but it can be worked every day and shoulders cured by using a good grade of talcum powder. When working the horse, watch the shoulders closely, and every time the galled place shows signs of dampness sift talcum powder on it till it becomes dry. Keep the part of the collar pad that rests on galls thoroughly clean. By following above direction the farmer can work the horse every day and cure the galled shoulders.

Avoid all grease and salves of every kind while working the horse, as it only tends to irritate the place.

Horsemen Attention !

Dr. J. Woodbury's Horse Liniment and Dr. J. Woodbury's Condition Powders will save and preserve the life of your horses. Their use will cure and prevent the disease common to horses, such as Cough, Colds, Distemper, Spavins, Pinkeye, Splints, Curbs, Enlargements, Cracked Hoof, Kidney Trouble, Fevers, Cuts, Sores and will remove bunches of all kinds.

BEFORE USING

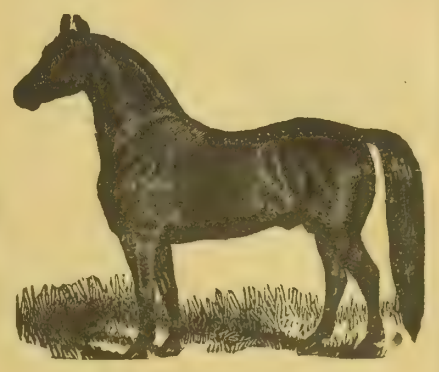
Why have a sick or lame horse, when you can get a reliable and warranted remedy? The leading horsement of the Dominion endorse Dr. J. Woodbury's Horse Liniment.

FOR SALE ALL DEALERS

PRICE 35 CENTS

Do you know that "Dr. J. Woodbury's Horse Liniment" is endorsed by all the leading horsemen of the Dominion. Save and preserve the life of your horses by its use. It will cure and prevent disease common among horses.

DEMAND
DR. J. WOODBURY'S
HORSE LINIMENT



AFTER USING

Use this preparation thoroughly for all and every disease of the horse for which it is recommended. Criticise it closely. Carefully watch, mark and notice, its effects, and, honestly judging it on its merits, you will be compelled to endorse it.

GENUINE DIAMONDS
CASH or CREDIT
Terms : 20% Down and $1--$2--$3 Weekly.
We trust any Honest Person
Write for Catalogue to-day
JACOB BROS., Diamond Imp., 15 Toronto Arcade, Toronto

A SAVINGS ACCOUNT

It is always well to have a Savings Account upon which interest is regularly paid and from which you are free to draw at any time should you have a good opportunity to buy stock or feed. A Savings Account is Ready Money.

THE CANADIAN BANK OF COMMERCE

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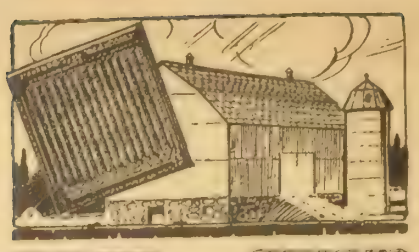


PEDLAR'S GEORGE SHINGLES

Lightning-Proof

THESE shingles lock on all four sides, forming practically a one-piece roof of heavily galvanized steel, which, when properly grounded, causes lightning strokes to be evenly and harmlessly distributed. Proof also against fire, wind, rain or snow, and will not rust or decay, but will last a lifetime without need of repair. See your dealer or

Write for Roofing Booklet "MF"

THE PEDLAR PEOPLE
LIMITED
(ESTABLISHED 1861)
26 Nazareth Street, Montreal, P. Q.
Executive Office and Factories:
OSHAWA, ONT.
Branches: Quebec, Ottawa, Toronto, Winnipeg, Vancouver.

POULTRY.

FEEDING YOUNG TURKEY POULTRY

Turkey poults should be fed often—four or five times a day—and just a little at a time for the first few weeks. Cracker crumbs, oat meal, cracked corn, wheat, stale bread soaked in milk, etc., are excellent at first. Gradually add wheat middlings (sorts), mixed moist but not sticky. Add oats to the grain ration, and begin to use whole corn instead of cracked as soon as possible. The poults should have ground bone or meat scraps and green food for vegetables suplied to them regularly if their range does not afford a plentiful supply of these materials. Sour milk or buttermilk is good for them at all times.

While turkeys being fattened should not have such a large range that they can "run off" their fat, they do not do well when confined to small coops such as may be used in fattening chickens. Limited range is better. Turkeys are great bug, worm and seed eaters and if allowed to wander a long way from home for feed they do not fatten so well as where their roaming is curtailed by liberal feeding. Especially when the weather begins to turn cold and insect food scarce in the fall, and increased grain diet must be provided for the growing turkeys.

As soon as the turkeys become accustomed to a heavier grain feeding, they may be fed once or twice a day on ground oats, middlings and corn meal moistened with milk. Corn and oats (also wheat when it is not too expensive) should be given in addition to the mash. Provide the birds with plenty of drinking water at all times.

Some successful feeders use a mixture of equal parts of ground oats, barley and corn, with table scraps, boiled vegetables mixed with milk. Vegetables fed freely have a tendency to make flesh plump and white.

In marketing turkeys it pays to have them well fattened and well dressed, so they will look better than the average. Attractiveness goes a long way in selling market fowls. Do not give food to the turkeys for twenty-four to thirty-six hours prior to killing; full crops and entrails taint the meat and prevent its being kept for any length of time without spoiling.

In dressing turkeys for city markets do not remove the head, feet or entrails, but have the whole carcass, including head and feet, perfectly clean. Kill by sticking a sharp knife into the base of the fowl's brain, through the mouth, instead of chopping off the head.—B. Sando.

GIVE TRAVELLER CHOICE OF ROUTING TO WESTERN CANADA

Additional facilities are now offered passengers who desire to travel between Eastern and Western Canada via Montreal and Toronto. The traveller may leave points in the Maritime Provinces via the "Ocean Limited," daily except Saturday, and connect at Montreal with the "International Limited" of the Grand Trunk Railway System for Toronto. An exchange system has been arranged between the Grand Trunk and Canadian National Railways with regard to tickets between Toronto and Winnipeg and beyond. The traveller now has the choice of routes and may travel on the famous train "The National," via North Bay and Cochrane or on train "Number One" via Capreol and Port Arthur. "The National" leaves Toronto 9.15 p. m. Monday, Wednesday and Friday, arriving in Winnipeg 6.00 p. m. Wednesday, Friday and Sunday. Train "Number One" leaves Toronto 9.15 Tuesday, Thursday and Saturday, arriving in Winnipeg 6.00 p. m. Thursday, Saturday and Monday. Both these trains carry Standard and Tourist sleeping cars, dining car, first class and colonist coaches. This exchange system of tickets provides a daily, except Sunday service from Toronto to Winnipeg. Ticket exchanges are made without charge by the Agent at Toronto Station. In adition to this the Grand Trunk operates a double daily service between Montreal, Toronto, Detroit and Chicago, where convenient connections are made for points west, affording passengers a wide choice of routes to Western Canada.

FOWL CHOLERA AND ITS TREATMENT

Fowl cholera and roup usually make their appearance at two seasons of the year, spring and fall. Many times fowl cholera will make its appearance when the weather warms up and we have a thaw. This is especially true where the birds are turned out on nice days. Roup is apt to appear any time when the birds catch cold.

This year, however, we are beginning to receive a great many letters from practically every part of the country giving symptoms of sickness in poultry. In practically every case it is very easy to see that fowl cholera is the cause of the trouble.

It is almost impossible to diagnose an acute case of fowl cholera outside the laboratory and be absolutely certain. However, if the birds are lost according to the description given and others continue to be taken sick, it is quite certain that fowl cholera is in your lot. It is well to open the birds that die and look for the following symptoms, although in very acute cases these symptoms are not found. Liver enlarged, very soft and flabby. It may have small cheesy white spots. A large amount of blood around the heart. On the inside of the intestines a reddened condition and congestion of the blood.

The best method of treatment and one that has been used with satisfactory results, is as follows: The houses are thoroughly cleaned and sprayed with a five per cent. solution of standard stock dip. The outside of the house and the ground for a distance around the house are sprayed with the same solution. The chickens are confined so that it is impossible for them to get other drinking water and given only that which has been treated with one 7.3 grain tablet of bi-cloride of mercury to each gallon of water. Care must be taken that metal drinking vessels are not used as bi-chloride of mercury readily attacks metal. Cement, earthenware, wooden, enamel or stone vessels can be used. With this method of treatment in some cases the loss was stopped from the very first.

Three Destroyed
One Roof Escaped

The picture tells the story.
Mr. Offer's letter confirms the fire-resistant qualities of

Brantford
Asphalt Slates

He says:

"I covered the roof of 201 Marlborough Ave., Toronto, with your Asphalt Slates some time ago. This house is one of a row of four, the remaining three were covered with Cedar shingles.

"These houses were close to a railway track and on the night of August 15th, 1918, these roofs caught fire from a spark from a passing train.

"As you can see in the picture, the roofs on three houses were completely burned through, including the sheeting boards and rafters. The boards and rafters on 201 were also burned through, so that the fire passed over and under your slates without harming them in any way.

"I have rebuilt the roofs and covered them with your Asphalt Slates since I have had such good proof that if the four roofs had been covered with your slates no fire would have occurred."

And here is another letter, from G. F. Wingrove of Walsingham, Ont., dated December 2nd, 1918.

Mr. Wingrove says:

"The house I live in is a large frame with dry pine rafters and sheathing. I covered same with Brantford Roofing last May.

"On November 24th, at eight in the morning, we discovered that it was all aflame inside of roof of one part, 18 x 30, with a fine breeze fanning it. But by the use of the telephone and the splendid fire-proof qualities of your roofing, we got the fire out and found spaces where the rafters and lumber were burnt out from in under the roofing and the roofing still doing its duty of resisting fire. Also remember this is out in the country where it took the best part of half an hour for help to arrive."

The Inspector of the Waterloo Mutual Fire Insurance Company, has this to say about Mr. Wingrove's fire:—

"I inspected this risk after the fire. It was particularly evident that the fact that the roof was covered with Brantford Roofing kept the fire confined below the roof. If it had been possible for the fire to break through I do not see how they could have saved the building. As it was the loss was comparatively trifling."

When roofing a building, it pays to put on a fire-resistant roof as well as a beautiful one. Brantford Asphalt Slates (individual size shingles) and Brantford Asphalt Slab Slates (four shingles in one) are fire-resistant, durable, economical and beautiful.

Samples and prices furnished on request.

Brantford Roofing Co. Limited

HEAD OFFICE AND FACTORY, BRANTFORD, CANADA
Branches at Toronto, Montreal, Halifax, Winnipeg

114

OVERCROWDING CHICKS

Avoid overcrowding growing chicks. A coop, brooder or colony house that was large enough to hold the baby chicks is not large enough after two or more months, depending on the breed and growth. It is absolutely necessary that growing chicks have

plenty of room to grow. Cockerels that are sufficiently large should be disposed of. Chicks that have not shown proper growth should also be separated and leg or wing banded. Many of these chicks, even the pullets, should be marketed. Only the good, strong, vigorous speciments should be retained as breeders and layers, as these are the only ones that can return a profit.

Growing chicks will not eat too much if they can have plenty of range so they can get the desired exercise. A good growing mash should be accessible at all times to growing chicks. Such a mash should contain plenty of bone meal, ground very fine, and fine-ground oats and barley. Be sure to have the mash ground very fine.

Growing chicks that are kept closely confined need much greater attention along all lines than those that have range. See that they have plenty of green feeds that have not wilted down to almost the decaying point and that the yards are kept sweet. Culling also is more essential when chickens are closely confined.

A CORRECTION

In our issue of June 24th, page 950, in an article, "Does it Pay to Keep Pure Bred Fowl?" the average profit from 29 hens and pullets during 12 months was fixed at $1.17. The gross was $178.94, so that obviously the average was $6.17, not $1.17. We regret the typographical error.

WHITE DIARRHOEA TROUBLING POULTRY

Is there a cure for whitie diarrhoea in hens that are well fed and have a free run on the farm?—R. R.

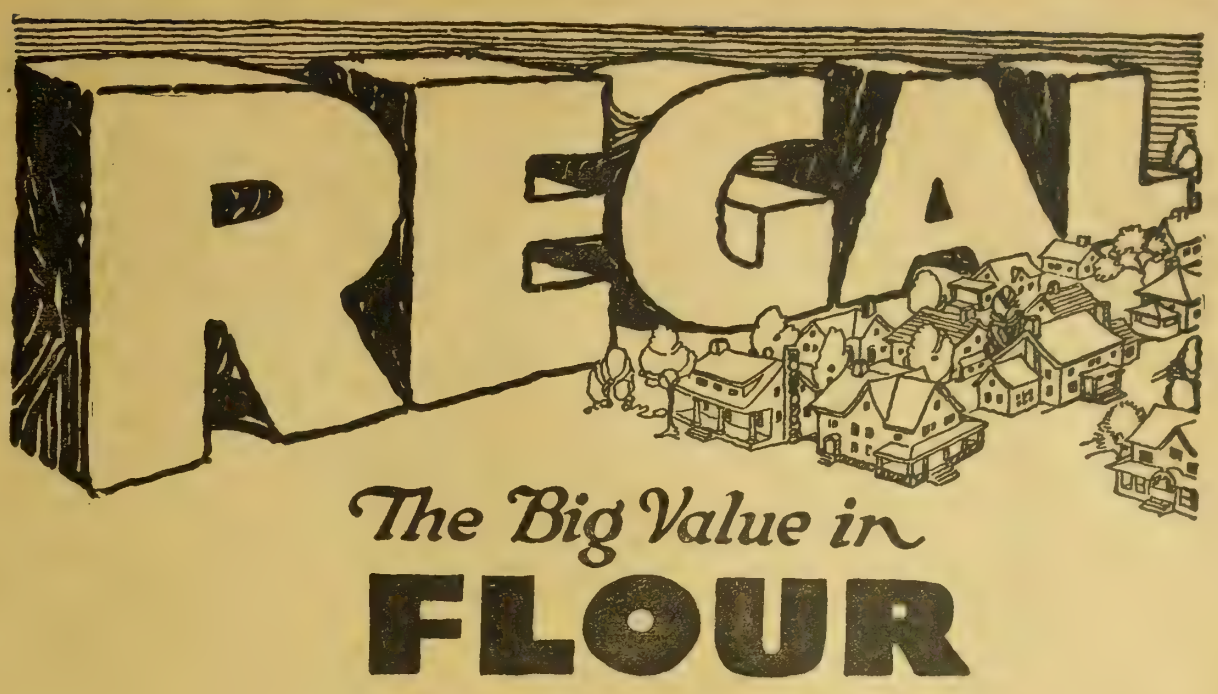
There is no known method for treating poultry affected with white diarrhoea. To keep the disease out of the flock one should never set eggs from hens that had white diarrohea when they were chicks. Eggs for setting should not be sold from a flock where the disease has been present during the former season. Several remedies are recommended, but cases of guaranteed cure have not yet been reported. Care should be taken to isolate all sick birds and burn all those that die.

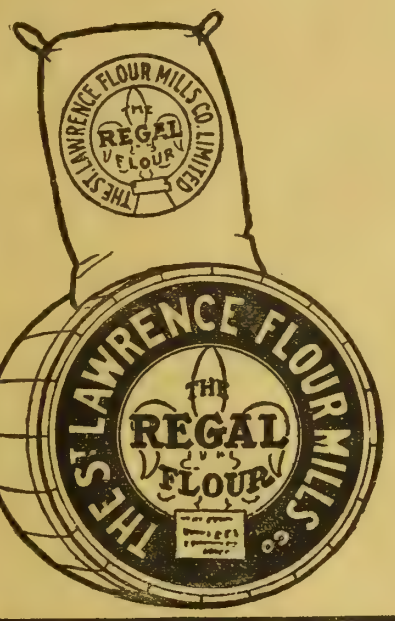
The use of sour milk has been found beneficial, also crystals of permanganate of potash in drinking water to make it a cherry red color. Clean all coops, feeding troughs, and poultry fitings, and then thoroughly spray with chloride of lime dissolved in water to make it a cherry red color. Clean all coops, feeding troughs and poultry house fittings, and then thoroughly spray with chloride of lime dissolved in water. For your young chicks that are affected, put ten grains of iron sulphate to the gallon of drinking water, and feed them with food that has been softened with whey, buttermilk or sour milk.

ROBBING THE FAMILY

When eggs are selling at the grocery for 50 and 54 cents, it is a temptation to the farmer's wife to rob the family of this nourishing food and sell her weekly poultry prduct at the city grocery . But it must be remembered that eggs are necessary food for the farmer's family as well as that of the city man. Especially should the children have plenty of soft-poached or soft-boiled eggs. Eggs, too, should be used in abundance for cooking, such as making custards, puddings and similar foods. It is not the part of wisdom to rob the family of eggs and sell them to purchase other foods not so nourishing and necessary in the family ration.

Mary had a little hen,
But she was very queer:
She laid like fun when eggs were cheap,
And quit when they were dear.





IN THE HOMES of the people, far and near, "REGAL FLOUR" is known for its high and uniform quality; it is known as the most important factor in bread baking success.

THE ST. LAWRENCE FLOUR MILLS CO.
LIMITED
MONTREAL

GOOD TIME NOW TO SELL OLD HENS

Poultry raising in Canada is essentially a farm industry. An average sized flock is easily managed and is not expensive to feed, because so many waste products are consumed. During a part of the year the laying hens and the growing stock can be kept on free range, thus greatly reducing the cost of feed. When given good attention poultry thrive well upon the farm and give good returns.

Up to the present, however, there has been a general lack of appreciation of the value of a farm flock and the importance of the poultry industry. There are too many mongrel flocks in the country today and the result is very low production. One thing which is very apparent among the poultry of the country is lack of vigor. There are few farmers who adopt a system of breeding and as a rule no selection is practised. Rigorous selection should be practised every year, and the conservation of vigor should be the poultryman's standard in selection, which should proceed continually from the time the egg is laid until the birds are dressed for the market or sold for breeding purposes. All cripples and weaklings should be removed from the flock as sheuldbe removed from the flock as soon as they appear to be affected. There is no greater mistake made by poultry raisers today than the practise of keeping old hens and non-layers over the summer. It is bad enough to keep them over winter but there is no excuse for allowing them further feed, care and shelter for which they will never repay. If they do not lay at this season of the year their chances of profitable egg production are gone forever. It is not a very difficult matter to tell the layers at this season, and there is no better time to cull the flock than right now. Prices for pou'try are high and old hens are very much in demand at present, consequently it would seem like profitable business to have a regular clean-up before the warm weather arrives and prices fall. Old hens are useless as far as egg laying is concerned, and they should be replaced by younger and more profitable stock. Their value as breeders is not desirable for since they themselves are poor layers there is little chance that their offspring will be much better. The profitable laying hen is short lived pends largely upon rigorous selection but the poultry industry appears to demand the closest scrutiny of all. The profitable layinghen is short lived and selection is thus an endless process.

Young turkeys should not be allowed to run with mature birds if any of them have previously shown any symptoms of having had the diseases known as blackhead.

"Alfalfa should be cut for hay when the shoots are starting from the crown, which is usually when it is one-tenth in bloom," says the Extension Division of North Dakota Agricultural College. "If cut too early. weeds may develop ahead of the alfalfa, and if cut so late that the young shoots will be clipped off the next crop will be injured.

It requires careful management to keep the capital invested in farming alive.

PILES Do not suffer another day with Itching, Bleeding, or Protruding Piles. No surgical operation required. Dr. Chase's Ointment will relieve you at once and as certainly cure you. 60c. a box; all dealers, or Edmanson, Bates & Co., Limited, Toronto. Sample box free if you mention this paper and enclose 2c. stamp to pay postage.

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

CAN—AND DON'T BE DISCOURAGED

A Practical Article to Help Women Who Have Had Trouble with Last Season's Canning

(By Helen Christine Bennett)

I know a number of housekeepers who "just can't wait" to see how their canned goods turn out and who after canning a lot, say eighteen jars of a product, set them aside for several days and then open a jar just to see that everything is all right. I, myself, never do this. If anything is wrong with the goods I have canned in hot July I can stand that knowledge better next winter when I have literally cooled off from my canning excitement. I don't want to know it in Summer just because if anything did go wrong it might discourage me and make me can less. The best thing you can do with your canned goods when they are done, is to forget them. But if you do open a can or if you merely display them with pride to some city visitor, there are certain things that may have happened to them that may cause you needless anxiety just because you do not understand them.

If you find a cracked jar here and there, do not worry. A crack may mean an air leak and it may not. To be safe, get out your parraffin, melt a bit and apply with a clean camel's hair brush across the crack. Put the jar where you can see it and unless little bubbles appear near the crack or at the top of the goods put your faith in that jar and store it away for next winter.

If Peas Are Cloudy Looking

If you are inspecting your canned peas and the jars look muddled or hazy, and the water in which the peas have been canned appears clouded, do not assume that your peas have spoiled. They probably are all right. This clouded or hazy appearance may be due to one of several causes. Perhaps in packing the peas you rubbed off several of the outer skins. As a result, the soft inner part of the peas has cooked to pieces and clouded the water, but it has not harmed the can a bit. To get a clear can of peas, every split, broken or doubtful pea must be removed when preparing for the cans. If the peas to be canned are pretty old, it is next to impossible to blanch a large quantity so carefully that the skins will not crack. Cracked skins make clouded jars. Even in bought canned peas of the lower grades this cloudy appearance is noticeable, and if the professional canners can not avoid it, it is hardly likely that amateurs can hope to. The bought peas are in tin and the clouded appearance is less likely to be noticed than in glass. And even if peas are carefully prepared and are young, it sometimes happens that the water in which the peas have been canned is responsible. Hard water containing certain minerals will give this clouded appearance to canned goods but will not injure them.

Corn is another tricky vegetable. Canned corn often has a cheesy, doughy appearance. It may even stick in little lumps in places on the sides of the jars. But even so, it is not dangerous and will taste quite as well. The cheesy appearance means that the corn was packed when it was a little too old for perfect results. But for making soups and fritters or for baking as a pudding that cheesy part will be just the thing wanted. If, on the other hand, the corn appears watery and pale it means that it was blanched and packed too slowly and that the packing was too loose, allowing too much water to be used. The best results on corn mean quick work, rapid moving from blanching to cold dipping and from that to packing. Do a jar at a time and put it at once into the canner. Two women should work together at this job for good results.

If canned beets are sickly looking and rather pale, they will probably taste just as well as if they were a vivid crimson. The fading means that they were old when packed, although certain varieties of beets hold their color at any age. To prevent faded beets, use smal beets, as small as 40 to quart, and can them whole. When they are blanched, leave on all of the tail and an inch of stem. Scrape them, never peel them, after cold dipping them and then cut off your inch of stem and the beet tail. Do this if you want perfect beets. But if you are hurried and busy, and your beets are too big for this, why just leave on the skin and tail, blanch them and cold dip them, and then cut off the ends and peel them and cut them into pieces—after which can them as fast as you possibly can move and when you have finished them shroud them in paper bags. All authorities to the contrary, I have had beets cut in this way a perfect crimson on the table. Be sure the water you pour on the slices is boiling hot.

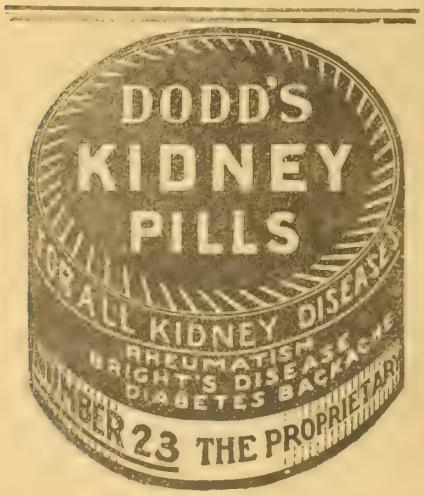
Nearly every housekeeper I know worries because her jars are not full after canning. I have canned a few jars where the product did not shrink, but when one is hurried and is trying to conserve fuel, perfect packing and keeping the water just one inch above the canning product is something of a task. I have watched the demonstrators pack so as to avoid shrinkage and if I had to spend that much time packing a jar I would have to give up canning. Also I confess that the water in my homemade canning outfit sometimes boils under the jars before the jars are done. I tried adding water, but several times I cracked jars when I poured water into the canning outfit, so now I let it alone. As a result most of my jars have a vacuum at the top, of which I am supposed to be properly ashamed, but of which I am not. For unless you are trying for a prize at the fair that vacuum is not going to hurt you or anyone. @reens, such as spinach are likely to shrink tremendously unless the blanching is very carefully done. To blanch greeens properly they must be done in steam and never touch water and this means using a steamer or some specially constructed vessel with a rack that keeps them well above water. I am bound to say that care in this matter of blanching greens pays, as the canned greens are much better in flavor and are higher in nutritive value than greens that are blanched in water.

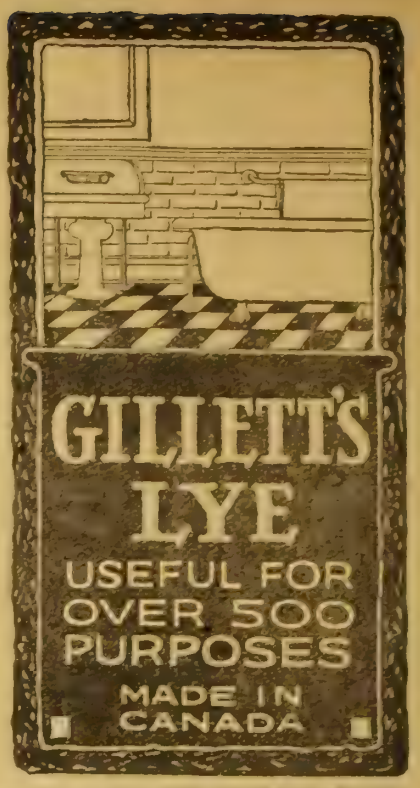
When Food Seems Spoiled

One of the greatest worries a housekeeper has about canned goods is the uncertainty as to whether canned goods are actually spoiled and unfit to eat. I do not want to run the risk of poisoning any family by advocating certainty before throwing away a can, but if a can seems doubtful, the best test is to heat the contents slowly and for a long time. The heat nearly always makes the spoilage a certain thing, and if after long heating the contents taste all right they are fairly certain to be safe. Heating a long time at a simmer, is also fairly certain to destroy dangerous bacteria and so make a safer content.

To Cure "Flat Sour"

The re is one defect in canned foods which no doubt has caused the throwing away of thousands of cans, a defect which does not seem dangerous, but which does affect the flavor of the canned goods. This is what is technically known as "flat sour." The goods which are "flat soured" seem all right, only they have a sourish odor and taste. "Flat sour" affects peas, corn, beans, and asparagus more than other vegetables and is particularly offensive when masticating the skins of these vegetables. It may be due to many causes, principally to canning vegetables that have been picked for some time and upon which bacteria has had a chance to work. It is not always possible to get strictly fresh vegetables to can, so that I am going to suggest that housekeepers who can these products do what professional canners do when they can not obtain a strictly fresh product, that is, use sugar or a thin sirup made with sugar to pour over the produce in place of plain boiling water. I put 1 tablespoonful of sugar to a quart in doing this, but I am not certain that this just the right amount, although the jars thus treated were much better than those untreated with sugar. The housekeeper who tests this out may experiment a little to find her right amount. Corn, almost all corn, I found much better and much less likely to "flat sour" or to taste "flat sour" when so treat-





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WHETHER you are a user of KING COLE Orange Pekoe or KING COLE Indo-Ceylon Blend, you know that the quality has been consistently maintained. That alone explains the steadily increasing sales.
They are dependable teas.
Perfectly packed in bright lead foil and price marked on every package.

ed. I have had no trouble with beans, but I do intend to use sugar with all asparagus, as I have had a good deal of trouble with "flat sour" with it.

Rapid blanching and cold dipping, that is, doing these full time but not losing any between operations, and rapid packing and immediate putting in the canner help in avoiding "flat sour." Another great help is the rapid cooling of the jars when they are taken from the canner. It is a common practise among my neighbors to tighten the lids, but to let the jars remain in the boiling water, standing there on the false wooden bottom until they are cool enough to handle with no danger to the hands. This slow method of cooling not only tends to help "flat sour" but it is apt to result in cloudy cans, in mushy contents, and badly shaped contents as well.

For this reason wire racks with handles which permit the hot jars to be lifted out are well worth their price.

As you read you will wish, I suppose, that I had given all this advice earlier in the season.

But even if you have cans and jars that have "flat soured," do not despair, and do not throw them away. I take all my "flat soured" cans and sweeten the contents and cook them slowly. The addition of some definite flavoring helps. Chopped mint added to peas gives a flavor which many people like. Onion juice or browned onion cooked with any vegetable helps with the flavor. Pimentoes or Spanish peppers help flavor beans. One of my own favorite flavorings is made from dried celery tops kept until they have fallen to small pieces. This celery flavor seems to fit many vegetables. Flavoring is also needed with vegetables which have not "flat soured" but which have a flat taste, rather flavorless. This indicates that blanching was not properly done or that cold dipping was omitted or that too much water was used with the vegetables to be canned. ometimes it means none of these, but simply that the vegetables to be canned never had a very good flavor. The wise woman keeps at least one bottle of first class kitchen sauce upon her shelf for just such emergencies. In addition, there are the helps I have already indicated. Because of the need of these, it is a good plan not to wait until the last minute to open your canned goods, but to open the jars a few hours or even a day before using.

This last year, when we practically lived on my canned goods, I found that the leftovers from the day before tasted much better than the freshly opened goods, and so I fell to opening my cans a day before and to treating them. if treatment was needed, ahead of the time they were to be served. Even fruits appear to benefit by the chemical action of the air upon them.

Mold on Canned Goods

If your fruits show mold, do not be discouraged about that. Mold isn't dangerous. It is a vegetable growth, usually harmless, although I do not advise eating it. Scrape off the mold, cook the jar contents slowly and you will find them safe. Even if a jar has started to ferment, and is caught in time, there is nothing but a rather pleasant taste, the result of the formation of a small quantity of alcohol, and the canned goods are not harmful. Mold usually develops because the seal is defective. If mold is spreading through a large quantity of jars it may be entirely possible to scrape off the mold, remove the contents, re process them in clean jars with good rubbers, and have them keep well. Opening the jars after canning to put on the rubbers is responsible for much mold. Housekeepers must learn to keep rubbers on jars while they are being boiled. They must also be sure to use good rubbers and test them if they are in any uncertainty. The Department of Agriculture attributes thirty-five per cent. of the spoilage of jars last year to the use of poor rubbers. I buy the best rubbers I can buy, boil them hard for some time, say twenty minutes, and then I cool them and pull them about. If they do not seem elastic I do not use them. It pays to be certain of your rubbers.

Jar breakage is very often not due to defective jars, but to poor handling. Pouring boiling water into the jars is a dangerous process, and the

VOL-PEEK
Mends Pots & Pans
Cooking utensils, Graniteware, Aluminum, Enamelledware, Tin, Copper, Brass, Iron, etc. Easy to use, no tools required, ready for use in 2 minutes. Saves a pot for ½ a cent. 15 cents at your Dealer, or postpaid by Vol-Peek- R-Co., Box 2024, Montreal

Children's Diseases Are *Not* Necessary

They Add Nothing to the Well-being of the Child and Invariably Leave the System in Worse Condition Than Before They Came

IN fact, they often sow the seed which, in adult life, develops into disorders of the heart and blood vessels and degenerative diseases of the kidneys.

So if children escape any child's disease they are the gainers in general health by just that much. It may be that years are added to their lives or chronic invalidism avoided. Then there is the enormous risk which every child runs who has measles, whooping cough, scarlet fever, or other diseases.

Perhaps this does not agree with your idea of letting your children have these ailments when young, with the belief that they must have them some time. This old idea has cost many thousands of lives. It is time to forget it, and to put forth an effort to save the children from these ailments.

All these children's diseases are known as germ diseases, and germs are harmless to a body strong enough to fight them!

Rich blood is the greatest of germicides. Therefore, seek to keep your children's blood rich and pure by giving them wholesome, nourishing food, and by allowing them to exercise freely in the open air.

If they grow pale and weak and languid —if they fail to derive proper nourishment from the food they eat—if their nervous systems get run down from the tax of school work—use Dr. Chase's Nerve Food as the best means which medical science affords to enrich the blood and build up the exhausted system.

Children whose blood becomes thin and watery are helpless before an attack of measles, scarlet fever, whooping cough, or other contagious disease. They seem to "catch" everything that is going. They are always "catching" cold. Their resisting force is nil.

But their young bodies soon respond to the nourishing, invigorating influence of Dr. Chase's Nerve Food. As their blood is enriched they become healthy, robust and rollicking—they enjoy their food—their play—their work at school, and grow into strong, healthy men and women.

Dr. Chase's Nerve Food, 50 cents a box, 6 for $2.75, all dealers, or Edmanson, Bates & Co., Ltd., Toronto. On every box is the portrait and signature of A. W. Chase, M.D., the famous Receipt Book author.

Table of Sirup Density

Per cent. Density	Part sugar by pounds	Part water by quarts	Use for
12	1	3 2/3	Apples for pies.
15	1	3	Apples, pears, sweet cherries.
18	1	2 1/3	Quinces, oranges.
24	1	1½	Sour cherries, currants, gooseberries,
28	1	1 2/7	cranberries, figs.
35	1	1	Peaches, guava.
40	1 1/3	1	Plums.
50	2	1	
60	3	1	Preserving.
64	3 1/3	1	

IS YOUR LIVER OUT OF ORDER?

HOW TO TELL.

Unless the liver is working properly you will find that a great many troubles will arise, such as constipation, heartburn, the rising and souring of food, which leaves a nasty bitter taste in your mouth; then again there is a sort of watery substance, that comes up in your mouth from time to time and which has a sweetish taste; specks float before the eyes and for a few seconds you feel as if you were going to fall down in a faint, your tongue is heavily coated, your head aches, you become bilious on account of too much bile forming in the stomach; your food does not agree with you and a thousand and one other things seem to be the matter with you.

YOUR LIVER IS OUT OF ORDER

Milburn's Laxa-Liver Pills are a specific for all diseases and disorders arising from a slow, torpid, lazy or sluggish liver, as they clean away all the waste and poisonous matter from the system. Price 25c. a vial at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

water should should always be poured on the par contents, not on the jar itself. But many jars are broken in cooling. I have advocated rapid cooling of jars, but this does not mean that they are to be taken from the hot water and carried to a cool pantry nor should they be set in a draft. Cool them in a warm kitchen first and much breakage will be avoided.

The matter of sirups on fruits has worried me for some three years. I could not seem to get the matter of sirup density straight. So I have made a table which it seems to me fits better than any table I have yet seen. It is not scientifically accurate to the elast ounce, but it will work well. It includes the amount of sugar for sirups of different densities and the lists of fruits for which these sirps are used. It is given in the accompanying table:

You will not need all this advice perhaps, just now. But when company arrives this summer, and you are in a hurry, you will find yourself opening a jar now and then and I am so afraid that if the jar is not all that it should be, yo uwill become discouraged and not can any more this fall. I have known so many housekeepers to give up. You cannot afford to give up.

There is no royal road to canning and you must learn the ordinary pathwaq, for the country is going to need your help in keeping foods for some years to come. The sooner you make up your mind to master the trade, the better.

SUMMER BEAUTY HELPS

(By Alice Lane))

This is the time of year when the woman over thirtty has to be doubly careful in the little things that go toward making her well groomed.

The girl in her twenties can let her hair fly wild, she can expose her skin to the winds and sun because youth has many weapons to fight the elements, but once you are thirty, the little thiings are really more important than the big ones.

Where beauty is concerned, cleanliness is the greatest thing in the world. Never fail to take a daily bath; shampoo your head a little oftener than you do in the winter and use your creams and lotions many a time and oft.

Perspiration is one of the greatest annoyances we have to encounter once the hot, sultry days are with us. But the point in favor of that is that we can buy a bottle of an astringent lotion that stops all excessive perspiration. I think there are still some women afraid to use these lotions, but such women are back numbers. Properly applied they are wonderful. You apply the lotion under the arms— on the palms of the hands if they perspire, and I knew a woman who used it on her upper lip for years. Many women use it on the back of the neck. In fact this lotion is perfectly safe and efficacious to use on any part of the body where you have excessive perspiration. First apply it, and let it dry for a few mintes; follow with a goodly dusting of talcum, and you will have no trouble. But you must let it dry, or else it will play havoc with your dainty summer underwear. When first you begin to use this lotion, it may be necessary to apply it every day, butafter a while you will find t wo or three aplications a week are sufficient.

If you are inclined to have the slightest odor from perspiration. you can absolutely kill it with a lotion, salve or powder, all manufactured expressly for that purpose.

Manicuring at Home

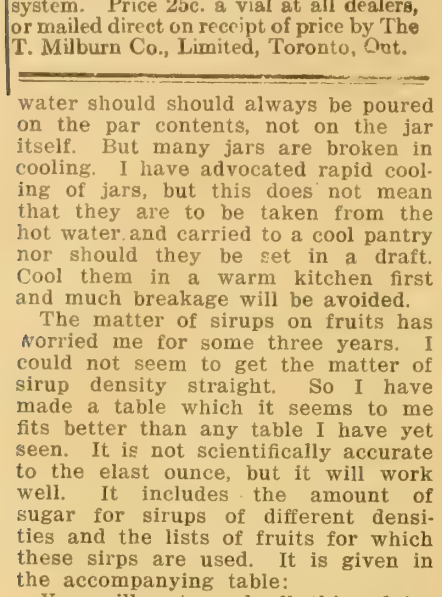
Now is the time you are apt to abuse your hands. You are digging in the garden, working over the automobile, and doing all sorts of odd jobs that are fatal to the appearance of the hands unless you take good care of them. Hence you must do a lot of home manicuring, and do it every day. Ugly, red, and rough hands do not go well with a dainty summer frock. Keep the nails filed round, following the shape of the finger tips, but do not use a file under the nail. Orange sticks must be used for that. Wrap a piece of cotton around the orange-stick and dip in a solution of peroxide or any good nail-bleach and clean the nails in that manner.

Do not be so old-fashioned as to attempt to cut your cuticle. In the first place you can not do it properly yourself, and in the next place it is not necessary, for you can get a bottle of cuticle-remover for a small cost. Use your orange-stick with cotton, dip in the cuticle-remover, and run around the edges of your nails. Let it remain on a few moments, then scrub the nails in soap and water and dry thoroughly, pushing back the cuticle about the base of the nail. Ten minutes a day spent on your nails with the proper kind of a home-manicuring set will keep them in perfect condition.

When you come in from a long automobile ride and your face is dirty, don't rush to the basin and scrub it with soap and water. To be sure, you will succeed in getting it clean, but your skin will be dry, your face will be red, and you will have a burning sensation. Wash the face in witch-hazel, pat it dry, and then apply some cold-cream. This should be wiped off with a soft piece of linen. Then dust with a good face-powder.

I doubt if there is any preparation that will permanently remove any superfluous hair on the arms upper lip, etc. But there are any number of harmlss preparations that will remove it for a time. Bleaching the hair on the upper lip makes it less conspicuous, and is a perfectly harmless thing to do. Mix equal parts of ordinary household ammonia and peroxide. With one hand hold your nose so you do not breathe the fumes, and with the other rub this mixture on with a piece of absorbent cotton. Let it dry on the lip—do not wipe dry. Do this once a week.

And, finally, how many of yoh have a piece of pumice stone on your wash stand, and how many of you know of its many uses? A lot of women have hair on their legs, and it does not look very pretty showing through thin, white silk stockings. Every time you take a bath, when the skin is still wet, rub the salves of the leg with the pumice stone. You will be surprised to know how efficacious this is. if you keep on doing it, and surely the treatment is perfectly harmless. If you have to stand a good deal during the day, and your feet ache, be sure you bathe them every night in hot water in which a sprinkling of washing soda has been dissolved. Then rub the soles and any callous spots with wet pumice. If your feet perspire exessively, any druggits will sell you a powder which can be dusted into the sole sof your shoes to offset that nuisance.



Clean to handle. Sold by all Druggists, Grocers and General Stores.

ON CANNING AND CURING OF MEATS

To can pork and beef cut the pieces as you do when serving for the table. Pack them closely in two-quart jars, putting in also one tablespoonful of salt in the centre of the jar. Cut up pieces of suet and put on top to prevent moulding. Do not put a drop of water in the jar as it gets plenty of juice from the meat, which makes a good gravy when weakened with water. Put the rubbers and lids on the screw tightly. It sometimes happens that the rubbeds pull out. When they do so, is it all right to take off the lid and put new rubbers on. Have a board that fits the bottom of the boiler. If you have no board, put a thick layer of rags on the bottom, as otherwise the jars will crack. Pour in cold water until it reaches the lid of the jars. Cover the boiler, anw after water once begins to boil keep the jars in three hours. The jars may be left in until cool but some prefer to take them while hot and see if any rubbers have pulled out. Placed in th ecellare the meat will keep just ah well as does fruit.

As to a meat -curing recipe, the meat should be allowed to get thoroughly cold, but be sure it is not froz-

I KNOW A WOMAN'S SUFFERINGS

I am a woman.

What I have suffered is a far better guide than any MAN'S experience gained second-hand.

I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight aud dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

Read My FREE Offer:

To Mothers of Daughters. I will explain a simple home treatment which speedily and effectually dispels green-sickness (chlorosis), irregularities, headaches and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten day trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

MRS. M. SUMMERS, Box 309 Windsor, Ontario

Kidney Disease
WAS OF A
DROPSICAL NATURE.

No one can be healthy with the kidneys in a diseased or disordered state. The poisonous uric acid which it is their duty to filter out of the blood is carried into the system, and produces all kinds of kidney troubles, such as backache, weak, lame or aching back, rheumatism, swelling of the feet and ankles, urinary disorders, bladder troubles, headaches, etc., and unless these are attended to promptly, serious complications are sure to arise and perhaps develop into dropsy, diabetes, Bright's diseases or other serious kidney trouble.

Mrs. Abel Corkum, East Berlin, N.S., writes:—"I was a great sufferer from kidney disease, headache and constipation. The trouble was of a dropsical nature as my legs would swell up and I could scarcely walk. The doctor did not seem to help me, so I started to use Doan's Kidney Pills. It took about five boxes to effect a complete cure, and I am satisfied that the cure is thorough."

Doan's Kidney Pills are 50c. a box at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

en. If it does freeze, thaw it out in the house. Cut the meat in small pieces, pack in layers in stone jars, putting enough salt on it to cover it. Put another layer of meat in, more salt, and so on until full. Make a brine of cold water and salt so strong that a fresh egg floats on top. Cover all the meat pieces, and add a tablespoonful of saltpeter with each three gallons of brine. When the meat has been in this brine it will turn red and thick. The meat will spoil if left in this when the weather is warm. Boil it up in the spring before hot weather. The sediment will rise to the top as soon as the brine is heated, and can thus be skimmed off. Watch it closely because as soon as it boils the sediment will sink to the bottom; keep it skimmed off until no more rises. When you have heated all of your brine in this way and skimmed it all well, pour it on the meat.

Go through this same procedure several times in the summer and pouwill have no trouble. It is a good idea to put the meat to soak over night in skimmed milk, as it gives it a better flavor- I have kept meat that has been handled in this way for twenty-two months.

Nova Scotia Man Is Enthusiastic

FOR DODD'S KIDNEY PILLS HAVE MADE HIM WELL

A Year of Growing Kidney Trouble Brought Bright's Disease but He Found a Help in Dodd's Kidney Pills.

Belleville, Yarmouth Co., N. S.,—(Special)—"You can tell everyone that it was Dodd's Kidney Pills that made me well." This is the joyful remark of Mr. Alcide Meuse, a well-known and highly-respected resident of this place. Mr. Meuse, who suffered for a year from kidney trouble, is enthusiastic in his praises of Dodd's Kidney Pills. "I think everybody ought to use them all the time," he says. Then he gives the reasons for his enthusiasm.

"I first caught cold," Mr. Meuse states, "and kidney trouble followed. My sleep was broken, my eyes were puffed and swollen and I had dark circles around them. I was often dizzy and always thirsty. My skin itched and burned at night. I was troubled with nervousness and my limbs were swollen.

"I had cramps in my muscles, backache and headache. Then Bright's Disease developed. A doctor attended me but the first real relief I got was from Dodd's Kidney Pills. I took eight boxes of them and they cured me."

All of Mr. Meuse's troubles came from sick kidneys. Dodd's Kidney Pills cured his kidneys and he felt well all over. That's why he's enthusiastic. For sound kidneys make pure blood and pure blood is the foundation of health.

SPICED RHUBARB MARMALADE

Wash the rhubarb and cut up without peeling. Cook in very little water until soft. For each quart of rhubarb add 1 pound of sugar, 1 teasponnful cassia, ½ teaspoonful cloves. Stir the sugar and spice into the rhubarb and cook very slowly until evaporated one-half its bulk. Put in jelly glasses and cover with paraffin. If desired, raisins may be used with the rhubarb. Use 1 cupful raisins to one quart of rhubarb.

SUN COOKED STRAWBERRIES

Take equal parts of berries and sugar. With one part of berry juice cook the sugar until a thick syrup is formed. Put the berries on shallow trays and pour the syrup over them. Place in the hot sun and cover with glass. Keep in the hot sun until the berries are plump and the syrup jellied. If requiring two or thrre days, take in at night. If rain comes during that time, place the fruit in a very low oven. In this way the process will not be retarded.

STRAWBERRY JELLY

1 pint of juice.
3½ cupfuls sugar.
Juice of one lemon.
1¼ tablespoonful gelatine.
1/3 cup cold water.

Soak the gelatine in cold water. Heat the juice very hot, pour on the gelatine and add the sugar. Stir until dissolved.

Strawberries will not make jelly without either gelatine or pectin, but often a little juice map be made into jelly in this way and used as a dessert if chilled and garnished with whpped cream.

STRAWBERRY AND PINEAPPLE CONSERVE

2 cupfuls strawberry.
Sugar.
2 cupfuls shredded pineapple.

Cook the shredded pineapple in the least possible quantity of water. When tender add the strawberries and cook until they are soft. Measure the fruit and add three-fourths as much sugar as fruit. Cook until it falls in heavy drops from a spoon. Pour into sterilized glasses. Seal with paraffin and cover.

APRICOT PRESESRVE

1 pound apricots.
1½ quarts water.
2 pineapples.
Sugar.

Wash the dried apricots and soak them in water. Cook until tender, using the water in which they were soaked. Press through a strainer. Cook the shredded pineapple until tender, using as little water as possible. Combine the fruits. Measure them and add ½ as much sugar. Cook until mixture fals in heavy drops from the spoon. Pour into sterilized glasses; seal and cover.

RHUBARB JELLY

Wash, cut and cook the rhubarb with very little water until soft. Drain the juice and add equal parts of sugar and the juice of one lemon to every quart of juice. Cook as any other jelly. This is a very sour jelly for meats.

FLEET FOOT

brings City Styles to Country Homes

FLEET FOOT Shoes enable women and girls on the farms to wear the same smart summer footwear as their sisters are wearing in the cities.

FLEET FOOT Shoes are restful, comfortable, and carefully made for sturdy wear—and their low price enables you to have several pairs for the price of one pair of leather shoes.

There are also FLEET FOOT Shoes for men and boys, for work and play, for every member of the family.

CANADIAN CONSOLIDATED RUBBER CO. LIMITED
DOMINION RUBBER SYSTEM
AND ASSOCIATED COMPANIES

Ask your dealer for FLEET FOOT Shoes.
The name is stamped on each pair.

21

SPICED CURRANTS

4 pounds curants.
2 pounds brown sugar.
1 pint vinegar.
1 tablespoonful allspice.
1 tablespoonful cloves.
1 tablespoonful nutmeg.

Wash the fruit, then stem it. Prepare a syrup of the sugar, vinegar and spies. When the sugar is dissolved, add the currants; cook the mixture for 30 minutes. Pour into sterilized jars or bottles; seal and cover.

RHUBARB AND FIGS

5 pounds rhubarb.
5 pounds sugar.
1 pound figs.
Juice and rind of four lemons.

Cut the rhubarb into inch pieces; chop the figs, and cut the lemons in thin slices. Remove the seeds. Add the sugar and cook slowly one hour. When done, put in jelly glasses and seal with paraffin. This combination of rhubarb and figs makes a delicious preserve.

RHUBARB AND ORANGES

1 quart rhubarb.
1½ pounds sugar.
5 oranges, pulp and grated rind.

Cook very slowly about one hour.

RHUBARB JUICE

Cook the rhubarb unil soft; strain. For every quart of juice use 1 pound sugar and the juice of one lemon. Boil slowly ten minutes and bottle. This is a delightful summer drink.

RHUBARB CONSERVE

3 pounds rhubrb.
3 oranges sliced fine.
3 pounds sugar.
1 pound raisins.
½ pound pecans or other nuts cut fine.

Cook slowly three-quarters of an hour or until very thick. When the conserve has reached the desired consistency, put in jelly glasses and cover with paraffin, Store forwinter use in a cool, dark closet.

Minard's Liniment Co., Limited.

Dear Sirs,—This fall I got thrown on a fence and hurt my chest very bad, so I could not work and it hurt me to breathe. I tried all kinds of Liniments and they did me no good.

One bottle of MINARD'S LINIMENT, warmed on flannels and applied on my breast, cured me completely.

C. H. COSSABOOM.
Rossway, Digby Co., N. S.

HINTS FOR MOTORISTS

by ALBERT L. CLOUGH

Editor Motor Service Bureau Review of Reviews...

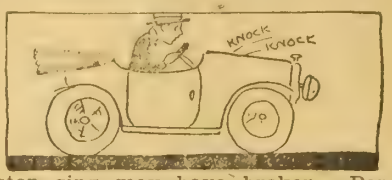
YOUR CAR'S PRIVATE FIRE DEPARTMENT.—BETTER TO BE SURE THAN SORRY

You probably carry a fire extinguisher on your car. If you do not, you are grossly negligent and are paying unnecessarily high for for your fire insurance on this account. Have you looked recently to see if there is anything in your extinguisher? Sometimes the fluid leaks out gradually and all escapes and sometimes a meddlesome person or a practical joker discharges the fluid, returns the extinguisher to its place and does not tell the owner to whom "ignorance is bliss" until a fire starts. Are you sure that the extinguisher will work properly? You can find out by removing it from its bracket, discharging its contents into a can and then returning the discharged liquid. An extinguisher that has been carried for a long time ought to be tested, so that unjustified dependence may not be placed upon it. Do other people, who drive your car, know how to detach the extinguisher, how to operate it and how to place the liquid most effectively, If not, they should be instructed. Is the extinguisher kept where it can instantly be reached. It should be, for a few seconds delay may be decisive as to whether your car will be saved or not. If your car takes fire, do not be deterred from trying to save it, by feear that an explosion is imminent, such a thing is very rare. The thing to do is to "go to it", discharging the liquid on the seat of the flames, and the chances are in favor of success.

PLUNGER OIL PUMP MAY CAUSE TAPPING

B. T. W. writes: My engine has a faint knock or tap, which is to be heard at al ltimes, but is most noticeable at very low speeds. The car is a new one and, so far as I know, everything is in good condition . Listening to the engine from various points, gives no clue to location. What do you supose causes this sound?

Answer: As this is a new engine, it is not likely that looseness due to wear can account for it. Have you inspected the valve gear carefully to see that the adjustments are not such as to cause any undue clearance at push rods, tappets or elsewhere. Of course, there is a possibility that a



piston ring may have broken. Perhaps a valve stem may be sticking slightly in its guide. The fan belt coupling may tap on the pulley. If your oil pump is of the pulnger variety, you may find that it is to blame, if there is excessive clearance between the plunger and the cam, which operates it. You would hear such a noise more distinctly at low speeds, because at high speeds other noises would rown it.

STORAGE BATTER INQUIRY

E. E. R. asks: Would three battery cells, taken from an electric vehicle, injure the ignition coil of my car, if they were used in place of the 6-volt lighting battery, furnised with it,

Answer: As they would furnish

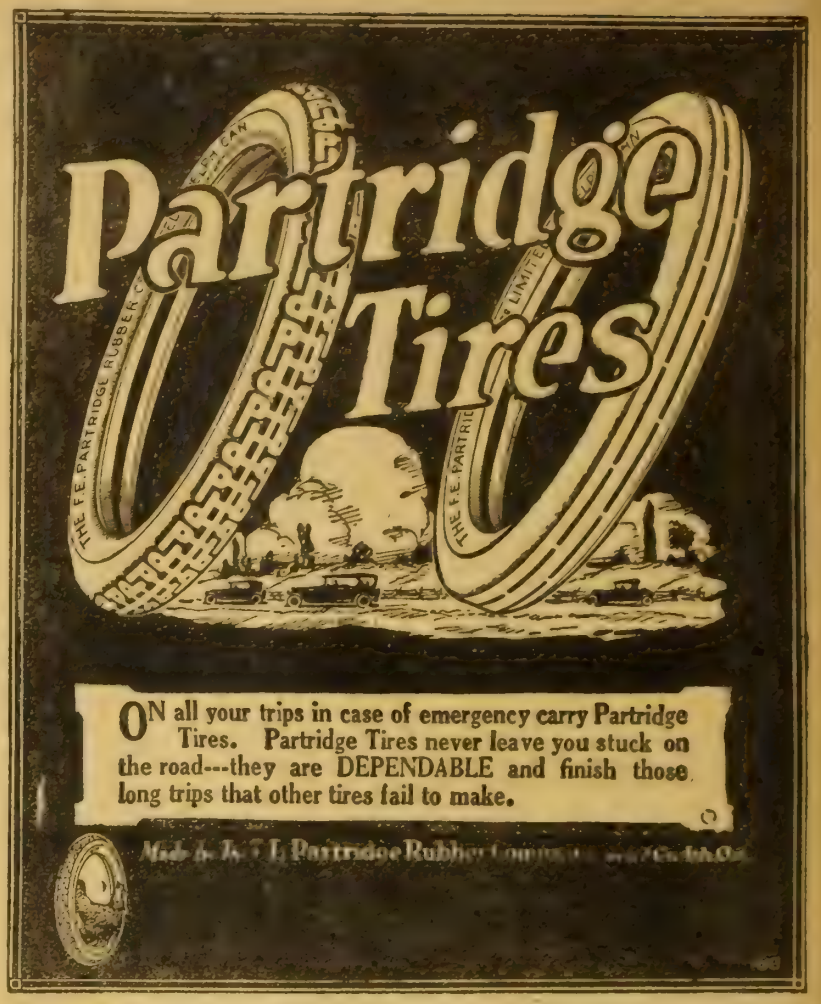
the same voltage as the battery originally installed, we do not see how they could. It may be well to remember that these electric vehicle cells are capable of furnishing a much heavier maximum current than three ordinary lighting cells and it might be wel to protect the system against its effects, by the instal tion of suitable fuses, if there is not already some such protection provided.

TEST FOR PROPERLY GROUND VALVES

O. L. asks: What is the best way to tell whether a valve has been ground so that it will be tight,

Answer: The usual way is to take a lead pencil and make a series of

marks, quite close together, directly across the full width of the valve surface. The valve is then placed in position upon its seat and rotated upon it, under light pressure. If, on removing the valve, any of the pencil marks remain intact, it is evidence of the valve to touch its seat at such points. All the marks should be partly erased if the seating is perfect. Another method is as fololws: Apply a light, even coating of prepared prus-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For Ford One Ton Trucks, Too!
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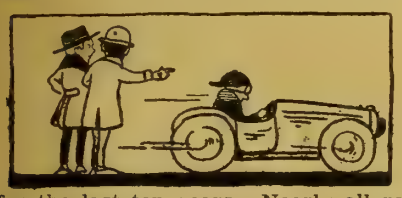
sian blue to the valve seat, put the valve in position and rotate it. If contact is good there will be found a continuous blue band around the whole valve face. A blue band with breaks in it denotes a poor job. Valves locater in cages are sometimes tested by pouring a little gasoline into the cage over the valve. If it does not escape betweent the valve face and seat the job is considered tight.

DURABILITY OF HIGH SPEED ENGINES

G. H. B. writes: I am thinking of buying a ————car, but friends tell me that it is drivenu by a very high speed engine and that engines of this type wear out rapidly as compared with those intended for lower speeds. Is this true

Answer: Practically speaking, it is not true. There is no distinct line of demarcation between low and high speed engines. Engine speeds have been increasing gradually and final gear ratios have been growing lower



for the last ten years. Nearly all recently designed cars carry engines that may properly be classed as of high speed. Such engines are mostly of small bore, with very light pistons and connecting rods and well balanced crank shafts and can be operated with at least as low wear and tear, at the higher speeds they are designed for, as the older, heavier, lower speeded engines can be at the speed for which they were intended. You need not worry as to the durability of any of the modern high speed engines so long as adequate lubrication as always provided. Experience shows that, in general, other parts of a car fail before the engine and that the majority of cars become obsolete before their engines are worn out.

VALVE COVER PLATES

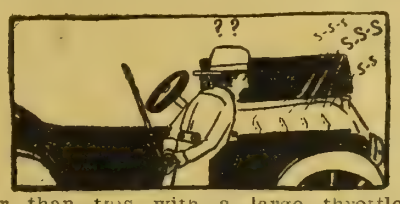
L. P. writes: The engine of my car was built before they had begun to cover in the valves and these are quite noisy. Is it practical to make an arangement to enclose them?

Answer: We have seldom seen an old engine to which it was really feasible to apply valve gear cover plates. There is usually something in the way or there is no good way of fastening them. Still, by taking sufficient pains, a sheet metal cover can usually be designed to afford at least partial enclosure. If you will let a competent sheet metal worker examine your engine, he may be able to work out something for you. Our advice, however, is to keep the valve gear in good adjustment, clean and well lubricated and tolerate the noise.

SPARK TIMING SUGGESTIONS

B. E. S. writes: I am just learning to run a car. How can I tell how to manage the spark to the best advantage?

Answer: You better have the correct position of the spark-lever, for a high gear speed of 20 miles per hour, marked upon the quadrant, by some competent person, when running slow-



er than this with a large throttle opening, the lever should be retarded beyond the emark and always, when the engine knocks. When running much faster than 20 miles per hour, the lever may be set in advance of the mark. Some engines, with certain ignition devices, require hardly any timing of the spark, while others call for considerable.

REPAIRING CRACKED FRAME

The W. M. Co. whites: One of our deliveries skidded down a bank shortly ago, and was badly used up. After making al lthe repairs that seemed

to be required, we noticed that the machine sagged considerably to one side and discovered that one side piece of the frame was cracked. Is there any way that this can be permanently repaired or is it necessary to replace the frame?

Answer: Sometimes an injury of this kind can be effectually repaired by riveting a reinforcing plate over the break and then applying a truss to the under side eof the broken member, with its strut or center piece coming nearly at the break. This truss would be of the kind often used under rear axles, to stiffen them, and would have a turnbuckle in its tension member to adjust it. If the break is where eit can be readily gotten at to bolt or rivete an the rein-

forcing plate and if there is room for the underrunning truss, such a repair is not difficult and is very effective. When applying the plate, the broken member should be jacked up a little ebeyond plumb, before the holes are drilled, in order ta allow for a little sag under load and any sag which later develops can be taken up by tightening the tension member of the truss. We cannot give you details of this repair, without a diagram, but an intelligent repair man can do this work without any trouble, we think, unless the conditions are especially unfavorable.

OPERATIVE COSTS OF CLOSED V. S. OPEN CARS

A. W. C. asks: How much more exensive is the operations of a sedan than that of a car with open body uopn the same chassis?

Answer: Very slightly as a rule. The sedan body usually weighs a few hundred pounds more than the open body, making the closed sar weigh perhaps one-tenth more than the open car. Tire expense increases very nearly in exact proportion to the total weight carried, but fuel expense increases in a lower ratio and you would find the difference, in this regard, rather small in favor of the open car. Interest and depreciation upon the larger investment in the closed car is in excess of of that for the lower priced open car and this item, with the added tire expense, would form the main items on the exces maintenance cost, which we believe you would not find burdensome in view of the advantages of the closed car. . You can readily ascertain just how much heavier the sedan you are considering is than the open car and make your own figures on tire costs.

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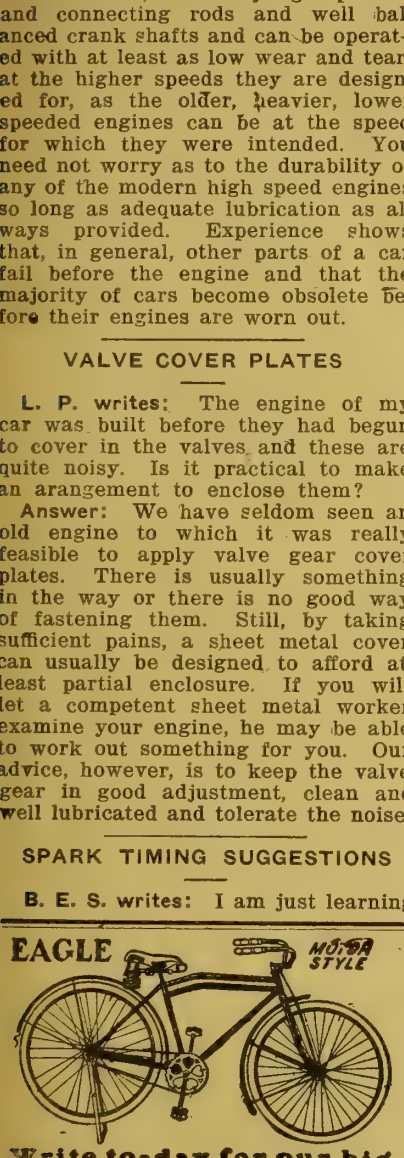
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THE CARE OF THE FRUIT INDUSTRY

(Continued from page 975)

Some men are disposed to dismiss the question of fertilizers by saying: "My orchard does not need fertilizers." We quite agree with him; in fact, we never knew an orchard or a field that did "need" fertilizers. In fact, the field does not "need" tillage, nor does the orchard "need" care, but the farmer and the orchardist find it profitable to apply proper tillage and proper care. This is the crux of the matter. The use of fertilizers on crops of any sort, including orchards, is not a matter of sentiment or prejudice, but is a cold dollars-and-cents proposition. It should be placed on just the same basis as improved machinery for spraying or tillage. If fertilizers will pay on the orchard, the orchardist should study them carefully and apply them abundantly so that his trees may produce the largest quantity of best uqality fruit.

Ontario orcharding is extensive; in fact, the figures reported by the Bureau of Statistics show that in 1916 over 313,000 acres were given up to the growing orchards, small fruits and vineyards. Now, the yield of apples per tree in Ontario is not by any means as large as it should be. In fact, if an increase in Ontario orchard production equivalent to that obtained on commercial orchards in Ohio Valley could be obtained it would increase the returns in orchard crops in Ontario five-fold, not saying what it would do in the improvement of the quality of the fruit gathered.

Methods of Application

What to apply, when and how to apply it, are interesting points for the Canadian horticulturist. As to the time of application of fertilizers the Pennsylvania Agricultural Experiment Station says: "To increase the crop of the current season the right time to apply fertilizers appears to be about the time the buds are beginning to open in the spring or slightly later. Applications made much later, however, are often useful in steadying the yield from year to year, and hence should not be neglected.

In general practice best results are obtained from fertilizers on orchard trees from applying the fertilizer around the tree, covering an area out from the trunk of the trees about equal to the spread of the overhead branches. This application should be made about the time that the grass is becoming green and taking on a vigorous growth.

What to Apply

As to what to apply, it is generally conceded that a fairly available nitrogen gives quickest results. This should be accompanied by a good supply of phosphoric acid and potash. In Nova Scotia practical orchardists report the use or 500 to 1,000 lbs. per. acre of a high grade fertilizer. This available plantfood assists in early branch growth and bud formation and feeds the developing fruit at a time when the ordinary suply of soil plantfood falls short of the great draft which a heavy crop of fruit makes upon the soil.

Many an acre of unprofitable home or commercial orchard can be brought into profitable yielding by closer care to the five factors at the core of the orcharding industry. None of these factors can be omitted, but not all of them are receiving the attention that thep merit from aCnadian fruit growers. Indications are that considerable opportunity wil develop in the near future for export fruit trade from Canada. Whether or not we shall be able to hold this trade will depend upon the magnitude of the supply of A1 stock. This is why intensive orcharding is of such vital importance to the Dominion.—Canadian Horticulturist.

MARKETS.

CHARLOTTETOWN

Beef, 23c ox; 20c to 21c Cow.
Veal, 14c to 16c.
Hogs, live weight, 20c lb. for selects.
Lamb, 30c.
Mutton, 22c.
Beef Hides, 17c to 20c.
Sheep Skins, 40c each (slots).
Calf Skins, 50c lb.
Potatoes, 70c bushel.
Carrots, None.
Turnips, None.
Parsnips, None.
Oats, 82c to 85c.
Cornmeal, $4.50.
Bran, $2.40.
Oatmeal, $5.50.
Middlings, $2.50.
Cotton Seed Meal, None.
Oil Cake, $3.75 to $4.00.
Buckwheat, None.
Ontario Flour, Wood, $12.00 to $12.25
Manitoba Flour, wood, $12.25 to $12.40.
Chickens, None.
Fowl, None.
Turkeys, None.
Geese, None.
Butter, Creamery, 50c to 54c.
Butter, Dairy, 40c to 45c.
Cheese, 29c to 30c.
Eggs, 36c to 37c.
Wool, washed, 70c lb.; unwashed, 50c lb.
Hay, $20 to $24.00 per ton.
Straw, $10 to $11.00 per ton.

THE CATTLE MARKET

Montreal, July 5.—At the Canadian Pacific Live Stcok Market the offerings today amounted to 150 cattle, 200 sheep and lambs, 950 hogs and 700 calves. A feature of the trade this week has been the continued demand from American buyers for calves, and shipments of several car loads were made to New York which cost $12 to $14.25 per 100 lbs. This has tended to create a stronger feeling in the market as all surplus supplies of good to choice stock have been taken care of. Another feature has been the demand from Toronto packers for live hogs here and shipments of twelve carloads have been made to them so far this week. This, coupled with the shortage of supplies here to local requirements and the renewed strength in the Toronto market resulted in prices being advanced today 50c per 100 lbs. The demand was good and an active trade was done with sales of selected lots at $23 per 100 lbs. weighed off cars. There was no important change in the condition of the market for cattle, prices being firm under a good demand and small offerings, and a fairly active trade was done with sales of odd choice steers at $13.50 to $14, good at $12 to $13, fair at 11.$50 to $12, and the lower grades down to $8.50, while cows brought from $7 to $11.50 per 100 lbs. There was a good demand for lambs and all the offerings met with a ready sale at $18 to $20 per 100 lbs., but the trade in sheep was rather slow at $8 to $10 per 100 lbs. The market for calves was active at prices ranging from $7 to $14 per 100 lbs. as to size and quality.

MILLFEED AND ROLLED OATS

Montreal, July 5.—The condition of the market for millfeed is unchanged. Supplies of all lines are ample to meet present requirements owing to the fact that the demand is somewhat limited on account of the good condition of the pastures throughout the country, and in consequence the volume of business is rather small. Car lots of bran were quoted at $42, and shorts at $44 per ton, including bags, ex-track, while small lots of bran in mixed cars sold at $43 and $43.50, shorts at $45.50 to $46, feed cornmeal at $70, pure barley meal and mixed grain moullie at $56 to $58, dairy feed at $48, and oat middlings at $44 per ton, including, delivered to the trade. There was no change in prices for rolled oats, and the market was quiet with broken lots of standard grades quoted at $4.25 to $4.40 per bag, of 90 lbs., and Golden cornmeal at $5.25 to $5.35 per bag delivered to the trade.

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The Farmer's Best Non-Skid Tire
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DAIRY PRODUCE TRADE

Montreal, July 5.—The receipts of butter for July 1st were 5,346 packages, as against 2,276 for the same dap last week and 2,233 for the corresponding date a year ago, while the receipts today were nil as compared with 278 for the same day last week and 479 last year. At Gould's Cold Storage on Tuesday there were 800 packages creamery butter offered, which sold at 52½c per lb. f.o.b. country points, showing an advance of 2c per lb. as compared with the same day last week. There were no new developments in the market today, the feeling being firm, but the demand for round lots was somewhat limited and the volume of business small. The trade in a jobbing way was steady and prices were maintained with sales of finest creamery at 56c per lb. in 1-lb. blocks, and at 55c in solid packages.

We quote wholesale jobbing prices as follows:

Pasterized creamery	53c to 53½c
Finest creamery	52c to52½c
Fine creamery	51½c to 52c
Finest dairy	47c to 48c

The receipts for cheese for July 1st were 30,108 boxes, as compared with 26,104 for the same day last week, and 25,908 for the corresponding date a year ago, while the receipts today were nil as aginst 7,364 for the same day last week, and 9,695 last year. At Gould's Cold Storage on Tuesday the offerings amounted to 6,000 boxes, for which there was a steady demand from exporters and all sold at 29¾c per lb. f.o.b. country points, showing a decline of ¼c to ⅜c per lb. as compared with last week. A steady trade continues to be done over the cable, but on account of the limited amount of ocean freight space available of late the shipments have been light.

Peterboro, Ont. July 5.—There were 1,724 boxes of cheese boarded. Sales: 923 at 30½c; balance at 30 7/16c. A resolution was passed accepting Montreal weights.

New York, July 5.—Butter barely steadp. Receipts 19,721 tubs. Creamery, higher than extras, 59¼c to 51c; creamery, extras, 92 score, 49½c to 50c; firsts, 48c to 48¼c; packing stock current make, No. 2, 44½c to 45c. Cheese firm. Receipts, 5,417 boxes. State, whole milk, flats, current make, specials, 32c to 32½c; do., average run 31c to 31¾c; State, whole milk, twins, current make, specials, 31¾c to 32½c; do., average run, 30¾c to 31½c.

THE PROVISION MARKET

Montreal, July 5—The feature of the live hog trade today was the stronger feeling which developed in the market and prices scored an advance of 50c per 100 lbs. This was attributed to the renewed strength in the Toronto market and the fact that the offerings here today were not sufficient to satisfy the requirements of the trade. The demand from packers for selected lots was good and an active trade was done with sales at $23 per 100 lbs. weighed off cars, with a cut of $2 per 100 lbs. for light weights, $1 to $2 for heavies, $5 for sows, and $7 for stags. There was no change in the condition of the market for dressed hogs, but the undertone was very firm with a steady demand for small lots to meet immediate wants and sales of city abattoir fresh-killed stock were made in a wholesale jobbing way at $31 to

$31.50 per 100 lbs.

The condition of the market for smoked and cooked meats was unchanged, but the feeling is very firm in all lines on acocunt of the continued heavy demand for supplies for local consumption and for shipment to country points, consequently an active trade is passing in a wholesale jobing way and stocks on spot have been reduced to a low level. Sales of 8 to 10-lb. hams were made at 44c to 45c, 12 to 15 lbs at 42c to 43c, heavy weights at 40c to 41c, cottage hams at 41c, picnic hams at 32c to 34c, cooked hams at 64c, and cooked shoulders at 51c . Breakfast bacon sold at 46c to 56c. per lb., as to quality and brand, Windsor selected bacon at 50c and Windsor boneless bacon at 54c to 55c per lb.

There was no important change in the market for lard, prices being firmly maintained under an active demand from all sources for supplies and a large volume of business was done with cales of Canadian pure leaf grades at 38c to 38½ per lb. in 20-lb. wood pails, and at 39c to 39½ in 1-lb. blocks. The trade in sortening is also fairly active and prices are unchanged with sales at 31c to 32c per lb. in 20-lb. wood pails, and at 32c to 34c in 1-lb. blocks.

The receipts of provisions today were 11,633 packages lard, 2, boxes hams and bacon, and 1,954 packages tinned meats.

EGGS MORE ACTIVE AT FIRMER PRICES

Montreal, July 5.—The egg market gathered considerable strength as the week advanced, due to a falling off in receipts and a material advance in the British market, resulting in considerable export business for prompt shipment. Country track shippers reported marked improvement in the demand. They say they have been able to make sales from one to two cents in advance of the previous week. Production is reported to be declining and quality improving since the weather has become cooler. Storage space is very scarce. Only a few private operators who did not buy heavily early in the season have room in their coolers. They are taking a few off the market for storage purposes, in addition to their immediate trade requirements. Generally speaking, the outlook is much more healthy, and if the export demand continues a further advance in prices may be looked for. There is practically no change in the western situation beyond a further decline in British Columbia. Receipts are of poor quality and the country has not got back to normal in the handling of freight and express.

Several cars have been sold for export to Great Britain during the past week for prompt shipment and the market seems to be broadening. Most of these sales, it is understood, have been made on an f.o.b. basis, subject to buyer's risk from damage in transit. There is also reported to be considerable enquiry for fall shipment and some further business has resulted.

The receipts of eggs for July 1st were 2,019 cases, as against 2,184 for the same day last week and 1,452 for the corresponding date a year ago, while the receipts today were nil as compared with 1,235 cases for the same day last week and 1.053 last year. The total exports of Canadian eggs from March 1st 1919, to June 28th, 1919, were 37,628 cases, or 1,128,840 dozen. There was no change in local jobbing prices today, but the tone of the market is firmer with a fair trade passing in a jobbing way for domestic consumption.

We quote wholesale jobbing prices as follows:

Strictly new laid eggs.....00c to 54c
Selected stock.....00c to 52c
No. 1 stock.....00c to 48c
No. 2 stock.....40c to 42c

Receipts of live and fresh killed poultry were about the same as a week ago. In Western Ontario shippers diverted a large portion of their shipments to Buffalo, as that market was offering better prices than Toronto. Arrivals consist principally of old fowl, spring chickens, and cocks with a sprinkling of ducks.

Storage stocks are moving about the same and are now getting into very small compass. Prices have been slightly reduced on one or two varieties to meet the reduction in prices of fresh arrivals. Generally speaking, the poultry situations is in excellent shape.

The receipts of live and fresh killed poultry in the United States are increasing, particularly live, and prices are lower and easy.

Storage poultry stocks have been reduced in the States, it is said, to a point where it leaves the situation in a very healthy shape. Stocks, however, are still much in excess of these at the same date last year.

THE FARMER'S AUTO SERVICE

The Maritime Farmer's auto department is rapidly coming into favor; it is something in which every subscriber to this paper is vitally interested. We are prepared to help you with your auto troubles. Not only that but you learn from the experiences of others much concerning your own difficulties. The department is conducted by an expert, who is at your service.

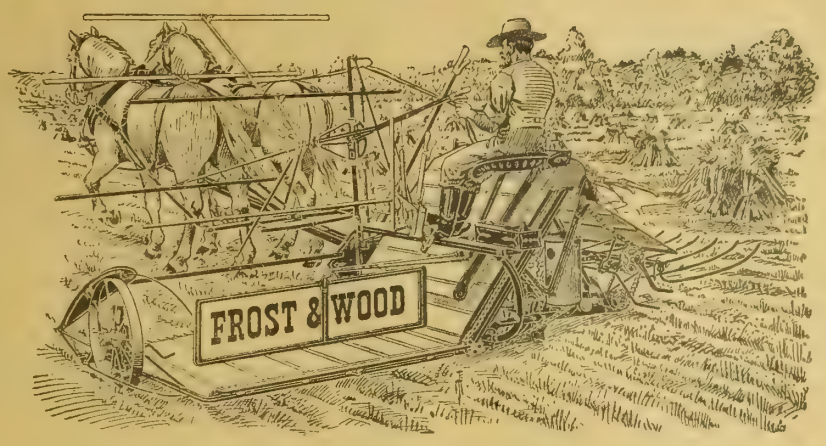
Then we can supply you with tires and inner tubes. If you are in need of them write us, that is, if you are a subscriber to this paper. We are not in the tire business but we are conducting a service for the benefit of our subscribers. If you are an auto owner and a subscriber to the Maritime Farmer, write us and we will be glad to advise you to your advantage.

The stones you throw at others today you will find in your pillow tonight.

Butchers in Birmingham, England, have undertaken to buy bones back after the housewife has made full use of them, paying the customer half of proceeds of their disposal. They are used for the extraction of glycerine and for the manufacture of phosphate for fertilizer and a valuable pig and poultry food.

FROST & WOOD BINDER

A Binder is a mighty important purchase. Let the example of thousands of satisfied and successful farmers who have bought Frost & Wood Binders influence you.



Light draft and fast, clean, easy work, guarantee more acres cut per day—the F. & W. Binder is the result of many years experience with Canadian conditions.

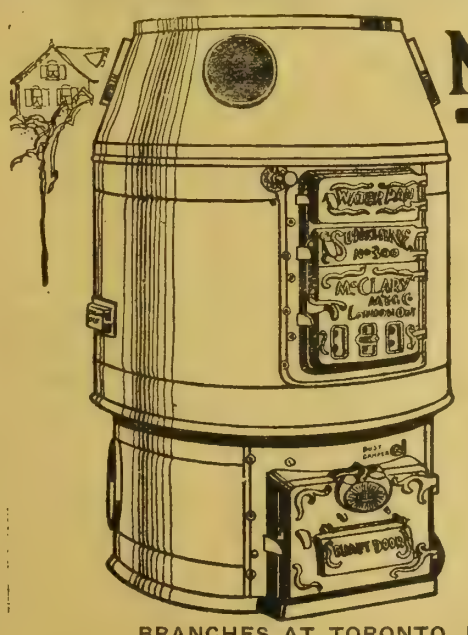
Remember, your PROFITS lies in the last few bushels

As in every other business, the bulk of your output goes to pay for labor and expense of all kinds which must be paid before you get your profit. This means that it is the bushels "at the end" that bring your net profits. Therefore, in justice to yourself, use a Binder that will harvest every possible head of grain —no matter what the crop is like, heavy or light, tangled or lodged or straight. That means just the one make—FROST & WOOD. It has the light draft, the big elevator capacity, the sure cutting and binding attachments, and the wide and easy reel adjustment that brings every possible straw to the knives.

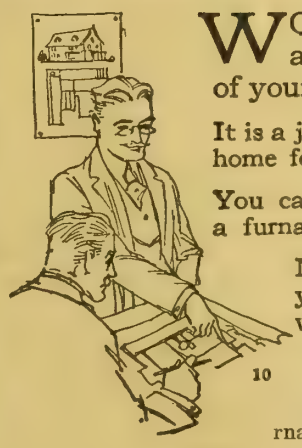
The Frost & Wood is the Binder of the day. See it at our nearest Agent's or write for our Binder folder and you'll readily see why.

THE FROST & WOOD COMPANY, LIMITED

Truro, N. S. ST. JOHN, N. B. Charlottetown, P. E. I.



McClary's Sunshine Furnace



WOULD you **experiment** with such an important thing as the heating of your home?

It is a job for experts. The comfort of your home for years depends on it.

You can call on us to sell you not merely a furnace, but COMFORT—guaranteed.

McClary's heating engineers will advise you and plan your heating system, without charge.

Ask about the LITTLE DRAFTMAN that turns on the drafts and regulates them automatically.

Full information about the Sunshine Furnaces will be sent free to any address upon request to our nearest branch office.

BRANCHES AT TORONTO, LONDON, MONTREAL, WINNIPEG, ST. JOHN, CALGARY
VANCOUVER, HAMILTON

McClary's

Which School ?

No matter what you do a commercial education is desirable. For this training you should choose the school that is acredited by the National Association of Accredited Schools of Canada and the United States. Send for information.

SUCCESS BUSINESS COLLEGE, Ltd.

The Accredited School

Moncton, N. B. Truro, N. S.

LT.-COL. W. J. OSBORNE

after four years of war service in England, Belgium, France and Canada, has again taken over the management of the

Fredericton Business College

FREDERICTON, N. B.

The college will be kept open all through the summer.

FALL TERM BEGINS SEPTEMBER 2nd

Write for full particulars.

No Summer Vacation

this year, as some of our students cannot afford to lose time.

Our classes have been considerably crowded, but, vacancies now occuring give a chance for new students who can enter at any time.

Tuition Rates, mailed to any address.

S. Kerr, Principal.

MINARD'S "KING OF PAIN" LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

Advertise in the Farmer

FEEDS FOR SEASON 1919-20

(Continued from page 969)

SANDS OF DOLLARS FOR THE FARMERS OF THE MARITIME PROVINCES LAST YEAR. WE EXPECT TO PERFORM A SIMILAR SERVICE IN 1919-20. If your society has not been organized for wholesale buying, get busy. Possibly you may have heard of how much some other society saved. We can place you in the same enviable position. AND REMEMBER WE WILL SELL YOU FEEDS THAT ARE SOLD ON THEIR ACTUAL CASH VALUE, MEASURED BY THE PROTEIN-FAT UNIT COST TEST. THAT IS HOW YOU SHOULD BUY FEED, HAVING IN MIND, OF COURSE, THE PALATABILITY OF THE GOODS. WE HAVE IN MIND BOTH DESIRABLE FEATURES. AND, MOREOVER, WE HAVE FAITH IN THE GOODS WE SELL, ALL OF WHICH ARE GUARANTEED TO BE AS REPRESENTED.

OBTAINING RESULTS WITH CANE AND BUSH FRUITS

(Pro. O. M. Taylor, Geneva, N.Y., at Ontario Fruit Growers' Assoc.)

Other things being equal, currants and gooseberries are at their best in cool, moist, retentive soil of rather heavy clay-loam type, quickly deteriorating in hot, dry, sandy soils. None of these fruits will thrive in wet soils, a soggy condition being especially favorable to winter injury of cane fruits. All soils should be well drained. There is but little danger of over-feeding bush fruits but heavy applications of nitrogen may at times cause excessive growth of cane fruits which do not fully mature, resulting in winter injury.

The pruning of cane and bush fruits is important. The old canes of raspberries and blackberries should be removed as soon as the crop has been harvested, thus destroying insects and diseases which may have infested the fruiting canes, and giving more room for the new growth. No further summer pruning is required with red raspberries. In the spring, the canes are cut back to a desired fruiting height. Summer pruning of black raspberies and blackberries depends on the method of culture. Usually the new growth is stopped at a desired height by pinching out the succulent tip. In the spring the lateral branches are shortened back, depending on the vigor. The vinelike growth of dewberries must be supoprted by stakes or trellis. In the Hudson Valley, where berries are grown intensively, stakes or various forms of trellis are in isommon use. but ini western New York the trellis seldom seen.

Systematic pruning of currants is essential to improve the fruit and to renew old and weak wood. Most of the wood over three years old should be cut out and only enough for the yearling wood left to maintain an annual supply of the younger wood, leaving from five to eight canes per bush. The tops of gooseberries should be thinned and occasionally cut back when necessary to encourage new growth. Varieties that sucker freely may be pruned much like currants.

Few, if any, growers spray the canefruits. As a rule, insects do not appear in injurious numbers in New York, although there may be occasional infestations of the snowy treecricket, the raspberry caneborer and the raspberry sawfly, only one of which may be controlled by spraying. Unfortunateiy, there are several fungus troubles or diseases which are difficult to control, such as anthracnose, orange rust, cane blight, crown gall and raspberry yellows. The most common insect enemy of the bush fruits is the currant worm and San Jose scale, which readily yield to proper spraying.

All efforts come to naguht with the selection of an inferior variety. Some varieties are almost cosmopolitan in

Cletrac
TANK-TYPE TRACTOR

Gets the Hay in Quickly

You don't want to take a lot of time to get your hay in. You don't want to take a chance on the weather. Let the Cletrac Tank-type Tractor do your haying.

A Cletrac Tractor will pull the mower at more than twice the speed of a horse. It will pull a hay-loader at an even, steady speed. *And no matter how hot the weather, it won't worry the Cletrac.*

Cletrac owners are finding that they can do twice the work with half the help. Economical, too, runs on kerosene (coal oil).

You can't beat the Cletrac for summer fallow. Plows fast—and and plows well—without ever packing the soil.

Later on you'll need its fine belt-power for threshing and silo-filling. See the Cletrac Tank-type Tractor now. There's a Cletrac dealer near you. Write him or us for our book written by farmers, "Our Owners Say."

Dear Sir,—

In reply to yours of the 31st ultimo, I have three tractors working in ploughing and preparing land for flax and other crops. They are as much superior to the wheeled tractor, which I used before, as a twenty-horse-power steam engine is over the old horse-power.

Our experience is that the plowing cost per acre for fuel and oil is around 25c. on an average of over 300 acres; the general average of a little over one acre per hour plowing, with three 12-inch bottoms, giving a perfect job.

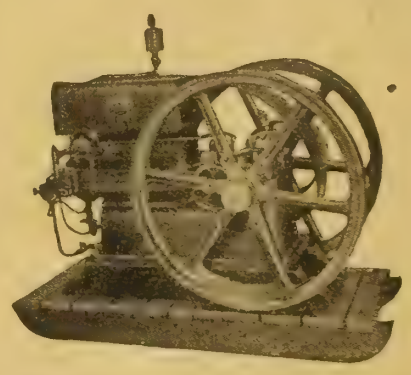
We have found it delivered on the belt over 30 horse-power and is actually quicker to set and easier to tighten on the belt than any other rig we know of.

I have sold four teams of horses, which we used for this last year for about one quarter the acreage I will be running this Spring with two tractors.

Yours very truly,
(Signed) A. L. McCredie

The Cleveland Tractor Co. of Canada, Limited, Windsor, Ontario

Brantford "Ideal" Kerosene Engines



An engine for every need. Also operated on Gas and Gasoline.

Maple Leaf Grain Grinders. 6 to 15 in.

Kerosene Light Tractors

WINDMILLS,
Pumps.
Tanks.
Waterboxes.
Steel Saw Frames.
Concrete Mixers.

Agents wanted in unrepresented territory.

GOOLD, SHAPLEY & MUIR CO., Limited
BRANTFORD, CANADA

adaptability but others are at their best only in restricted areas. The question of what to plant is difficult partly on acocunt of the great number of varieties available but more so because of the fact that under different environments and under unlike surroundings the same variety may change both in plant and fruit-habits. The best varieties in one place may be all but worthless elsewhere. Adaption should be determined before planting extensively.

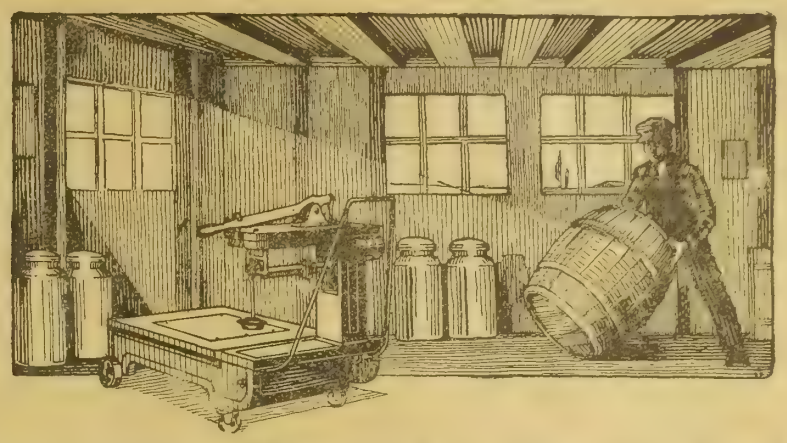
The testing of the newer, most promising kinds should be encouraged and every effort made to develop a plantation especially for home use of choice varieties, high in quality, of all the classes of both cane and bush fruits, including the red raspberry, black raspberry, yellow raspberry, purple raspberry, blackberry, dewberry, the red, white and black currant and especially some of the European varieties of gooseberries. When grown for home use, the fruits may be left on the bushes until the highest degree of flavor and quality has been developed—giving the grower a product tempting to the eye, and delighting all by the handsome appearance, delicate aroma and pleasing flavor. With the many varieties at our disposal, and with a better knowledge of their adaptabilities, intelligent effort cannot fail to suply our tables with fruit most acceptable to both sight and taste.

WHAT THE COW TESTING ASSOCIATION CAN DO

The cow testing association takes the guesswork out of dairying. No longer can the camoflage of a fine appearance protect the low-producing dairy cow. Confirmation indicates performance, but the Babcock test and the milk scales always tell the true story. Knowing the true feed and production records of each cow, the dairyman practices selective breeding, eliminates with certainty all low producers, and feeds the remainder according to known production.

WATER SUPPLY FOR DAIRY COWS

During the summer months especially during the dry time of the season, look well to the water supply for the cows. The water in ponds may become so low and of such poor quality that it is not fit for cows to drink, and the same may be true of running streams in the pasture, especially the small streams. Water furnished by ponds or streams is all right as long as it is clean, but it is difficult to keep it clean when the cows have free access to it, for they will wade and stand in it for its cooling effects and not only soil the water, but while in the water will switch their tails at flies and thus plaster themselves with a very bad sort of dirt, much of which may get into the pail while milking. Water from the wells is best for cows in summer and, if watered regularly at the well, they will come to it when they want a drink rather than drink dirty water in the pasture.



Fairbanks Portable Farm Scales

—the handy scales for the barn, the dairy, in the granary and the house.

These are the scales designed for the farmer and adapted to every use to which medium sized scales can be put. No detail which would make them the complete farm scales has been overlooked. Fairbanks Portable Farm Scales have a capacity of one ton in divisions of half pounds. They are equipped with a 26x34 inch platform, 11½ inches off the ground, with ball-bearing swivel casters, low weighing post, convenient handle, and bag rack for the weighing of vegetables. These compact and complete scales are a correct part of the equipment of every farm. Their accuracy is unquestioned.

Fairbanks Union Scales

are economical, convenient and accurate for household and store use. Capacity 240 pounds. Write today about scales for your farm or home.

13

The Canadian Fairbanks-Morse CO., LIMITED

St. John Quebec Montreal Ottawa Toronto Hamilton Windsor

QUEEN'S UNIVERSITY

KINGSTON - ONT.

HOME STUDY AND Summer School

Work for Degree in Arts Faculty.

Register before May 1st

Summer School, July 7—August 15

Languages, Mathematics, History and Science.

Write for Information to GEO. Y. CHOWN, Registrar.

BEDDING MATERIALS AND RELATIVE VALUES

There is much argument as to the relative value of the different kinds stockmen seem to think that wheat straw will go further than oat straw of bedding amterial for stock. Most for this purpose, and it has been commonly believed that shavings and sawdust will go much further than either kind of straw.

A test of different kinds of bedding materials at the Illinois Experiment Station, conducted in the spring of 1917, had interesting results. It was conducted primarily for the purpose of determining what kind of bedding material is most economical to use at the experiment station. A test of the water-holding capacities of the materials showed that when soaked for 24 hours oat straw retained about 19 per cent. more water than wheat straw, and twice as much as ordinary mixed shavings.

From this it would be expected that more shavings than wheat straw and more wheat straw than oat straw would be required to keep animals bedded. Such proved to be the case. With comparable lots of beef cows, dairy cows, and brood mares, 40 to 82 per cent. more shavings than oat straw and 9 to 18 per cent. more wheat straw than out straw was used.

From the standpoint of fertility value of the manure oat straw is somewhat better than wheat straw, and either kind of straw considerably better than shavings. The amount of animal excreta saved in the test with each kind of bedding was just about the same but the straw in straw-bedded manure is considered to have as much fertility value, pound for pound, as manure, while shavings have little or no value. They are so much inert material.

The amount of bedidng required and the fertilizer value of the manure saved are, of course, not the only criteria of the value of a bedding material. On an ordinary farm they are most important, but under some conditions the cleanliness of the animals is the first consideration, and under some the freedom of the bedding material from weeds seeds is an important factor. It is here that shavnigs and wheat straw have an advantage. Shavings kept the animals, especially cattle, noticeably cleaner than either wheat straw or oat straw. Wheat straw was somewhat better than oat straw in this respect. Shavings again have an advantage in being entirely free from weed seeds. Straw, and especially oat straw, may be a carrier of a variety of weeds.

Sizing up the whole situation, the bedding materials rank oat straw, wheat straw, and shavings in economy of amount required to keep animals bedded, and in the value of the manure produced, but the rank is just the reverse in efficiacy in keeping the animals clean and in freedom from weed seed.—J. W. Whisenand.

When the haying season has started, a very important task is under way, which means steady and careful work until the finish, or there will be a big loss, therefore everything pertaining to the hay crop should be put into the best possible condition beforehand.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

FOR SALE—One pure bred Holstein Bull, dropped last August, two more dropped in January, good stock.—W. G. CAMPBELL, Salisbury, N. B.

LADIES WANTED to do plain and light sewing at home, whole or spare time, good pay, work sent any distance, charges paid. Send stamp for particulars. NATIONAL MANUFACTURING, COMPANY, Dept. A, Montreal.

CROCODILE WRENCHES—One of the most useful tools on the farm. Cuts a thread in three sizes, will hold a pipe or turn a nut. While they last, sixty cents each. Made of chilled steel. We pay postage.—THE MARITIME FARMER, Sussex, N. B.

GREAT WHITE LIGHT BURNERS—The lamp burner that doubles the light you get from your oil lamps. We have a few dozen to offer at 18c each, postpaid. They are a big investment for any person using oil lamps. In large size only. —THE MARITIME FARMER, Sussex, N. B.

THREE HUNDRED KEGS first quality wire nails, mixed sizes, suitable for repair work around farm buildings and other premiscs. Price $3.50 per 100 lbs. Apply by mail to "NAILS," care of Office Maritime Farmer, Sussex, N. B.

FOR SALE—Four very highly bred Guernsey bulls, one 20 months, two 6 months, one 3 months; also five heifers, 6 months. Dams cost $295, $275, $265, $175 and $150. Three have high records. Prices and full particulars from J. MILLIGAN & SONS, Kings Head, N. S.

WRITE ME for new Price List of Wire Fences, Gates and many other useful lines. I have taken over the business of The Page Wire Fence Co. in these Provinces and will keep for prompt delivery, a large stock of everything. W. C. ROTHWELL, No. 11 Water St., St. John, N. B.

POULTRY FOR SALE !

15 White Wyandottes, 6 S. C. Brown Leghorns, and 15 Utility Barred Plymouth Rock hens. $2.00 and $3.00 each. These will make the best of breeders for next season. Orders booked now for cockerels and pullets to be delivered in August and September. Prices $2.00 to $5.00 each. Special rates on mated pairs, trios or breeding pens. Satisfaction guaranteed. For further information address

H. M. McMONAGLE,
Box 652, FREDERICTON, N. B.

Springbrook Farm Ayrshires !

Females, all ages. Also a number of bull calves ranging from one month to eight months. Sired by the prize winning bulls "Morton Mains Amanth" Imp. and "Cherry Bank Cicero."

McINTYRE BROS.
SUSSEX CORNER, - - N. B.

AYRSHIRE CATTLE. KARAKULE-ARABI SHEEP

We are offering two Ayrshire Bulls, ages 9 and 14 months. They are from big producing dams. Prices very moderate.

We are also offering Karakule-Arabi rams and ewes, producers of the finest Persian Lamb Fur.

For particulars and prices write

THE EASTERN KARAKULE-ARABI SHEEP CO., LTD. WINDSOR, N. S.

FOR SALE !

Eggs for Hatching and Live Stock

Get a setting of eggs from our O. A. C. Bred to lay Barred Rocks, Rhode Isalnd Red or White Wyandotte hens. We get eggs every day in the year. 10 cents per egg, $8.00 per hundred.

Extra well bred Holstein calves, both sex for sale.

Booking orders for Chester White pigs.

N. W. Eveleigh
"T heOrchards" Sussex, N. B.

Lawndale Stock Farm

Jerseys and Shorthorns (Pure Bred)

Jersey Offerings for the Summer of 1919—

One 4-year-old Grade, heavy milker, due to freshen from pure bred bull, Oct. 11th, 1919. Several pure bred calves, male and female.

Shorthorn Offerings for Summer of 1919—

One young bull (pure bred and registered), dropped March, 1918, of splendid parentage.

One 2-year-old heifer, due to freshen Dec. 1st, 1919, from imported English sire of milking strain.

Two yearling Heifer Calves, very thrifty.

One Bull Calf, dropped Jan. 16th, 1919.

Apply for information to

I. M. LOVITT, M.D.,
Yarmouth North, - Nova Scotia

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T. D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B

Ayrshire Cattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co,, N. S.
C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE PIGS

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Milking Shorthorns for Sale

We are offering some choice young Shorthorn bulls of the milking strain, ages 3 months to 15 months.

Also a limited supply of heifers, one and two years of age.

For particulars apply to

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett
Upper Sackville, - - - N. B.

KEEP

Holstein-Friesian Cows

1. The Holstein-Friesian is a large vigorous cow, full of energy and abounding in vitality.
2. Her physical organization and digestive capacity are such that she is able to turn to the best advantage the roughage of the farm, converting the same into merchantable products.
3. She yields large quantities of most excellent milk, fit for all uses and especially suited for shipping purposes.
4. Heredity is so firmly established through her long lineage that she is able to perpetuate herself for the production of strong, healthy calves.
5. When for any reason her usefulness in the dairy is at an end, she fattens readily and makes excellent beef.

If you can't buy a herd, buy a heifer

Information from the Holstein-Friesian Association

President. Dr. S.F. Tolmie, M.P. Victoria, B.C.
Secretary, W A. Clemons St. George, Ont.

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,
AMHERST, - - - N. S.

Advertise in the Farmer.

Glenrane Farm Holsteins !

We have a nice bunch of well grown Bull Calves for sale. These are well bred calves, fit to head any herd.

For particulars apply to

ROBERT C. HICKS
WEST BATHURST - - - N. B.

FOR SALE !

We have an exceptionally fine litter of 13 (living) of our large Berks for sale @ $12.00, four to 6 weeks old. Ready first of June.

Owing to scarcity of labor and we not being able to see eye to eye with certain Gov. officials, as to the type of Shorthorn to raise, we have decided to go out of the breeding and raising of pure bred live stock. Therefore our herd of 40 head of Shorthorns will be sold between now and fall for either breeding or for beef. Parties wishing to buy, please come and see them. We have seven very nice bulls, 10 months to two years.

L. M. ANDERSON, Sackville, N. B.

PRINTED Butter Parchment

Revised Price List

We Prepay all postage to your home address

1000 1 lb. Printed, - -	$4.50
500 1 lb. Printed, - -	$3.25
1000 Printed, 2 lb. - -	$5.60
500 Printed, 2 lb. - -	$4.50
500 2 lb. Choice Dairy Butter,	$2.40
500 1 lb. Plain - -	1.40

Parchment marked "Choice Dairy Butter" 250 sheets, 85c; 500 Sheets for $1.65, Postage Paid.

The Maritime Farmer
SUSSEX, N. B.

WALLACE MACHINE WORKS REORGANIZED

Home of Sussex Little Giant Threshers Ready for Largely Increased Production to Meet Demands.

A business deal of interest in the Maritime Provinces was recently effected, when the Wallace Machine Works acquired control of the agricultural implement business of the Sussex Manufacturing Co. Limited, Sussex, N. B. The head of the new firm, Mr. H. W. Wallace, was formerly manager for the Sussex Mfg. Co. Mr. Wallace is a young man, a worker and a hustler. He has completely re-organized the business of which he is now the head. This has enabled the firm to prepare to handle the largely increased business which is now offering for the well known Sussex Little Giant Thresher. The orders received this year are in advance of anything experienced in the history of the firm, but the business growth will be readily handled. The Wallace Machine Works will also manufacture the other well known line which have been in their factory for years. The business announcements of this enterprising firm will appear in the Maritime Farmer from time to time and should be read carefully. They will carry an interesting message from a firm prepared to guarantee its output and stand behind that guarantee.

Fertility in the soil can be aptly compared to one's checking account in a bank. It is always easier to draw out than to put back. This is true of the growing of crops and of the fertilizing of the soil.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 24. SUSSEX, NEW BRUNSWICK, JULY 22, 1919. Number 20.

Red Clover and Its Impurities

Importance of the Clover Crop

From the standpoint of maintaining soil fertility there is no more important crop than red clover in those parts of Canada where it may be successfully grown. It is unexcelled as a forage plant and has great value as a soil renovater. By the proper use of clover in rotations it is possible permanently to maintain the supply of nitrogen in the soil. The value of clovers and other leguminous plants as soil improvers is due to their ability to use the free nitrogen of the air through the agency of bacteria living in the little tubercules on their roots.

Canadian-Grown Red Clover Seed

Success in clover gorwing is much more certain if Canadian-grown seed is used. Imported seed, especialy from a southern country, is likely to have been produced by varieties too tender for the Canadian winter. When Canadian-grown seed is used the risk of losing part of the crop from winter-killing is very much less than with imported seed.

One factor that discourages the production and use of Canadian-grown seed is that so much of iti has high seed is that so much of it has high a great extent, is due to the fact that the area of cultivated land per agricultural worker in Canada is very high.

It is quite possible, however, to improve the purity of our seed without materially increasing the labor applied to its production if correct principles are understood and aplied.

Weed seeds lower the value of seed by making it necessary to waste so much of the clover seed to remove them. Some weed seeds are about the same size as the smaller clover seeds and to take them out, much small seed must be wasted. Other weeds have seeds the size of the larger clover seeds. To eliminate these, much of the plumpest and best clover seed must be sacrificed. If No. 1 seed is selling at $12 a bushel, a rejected sample that must be reduced by one half to Make it No. 1 will be worth much less than $6, as the time, labor, power, etc., to clean it must be taken into consideration as well as the dockage. Indeed, few rejected samples be cleaned to No. 1. If, after reducing a lot of seed by 1/3 or ½, it will grade only No. 3, its original value must be uiqte low since this grade is in small demand and consequently sells at a price considerably below that for No. 1. Some lots of rejected seed cannot be made saleable by any amount of cleaning. Clover that will yield such seed should never be left for seed.

The weeds that cause trouble in clover seed production are not, as a rule, those which are seriously injurious to ordinary crops, and for this reason farmers are not in the habit of giving them much attention. Most of them are weeds that grow up from seeds during the summer, mature seeds in the fall about the time clover seed ripens, and then die. A few live two or three or more years. They make a start during the year the clover is seeded, live through the winter and are ready to produce seeds the next year, and in many cases every subseuenqt year until the field is broken up and the plants destroyed.

Two classes of weeds are injurious in growing clover seed. The first are those whose seeds are in the soil ready to grow if the clover fails to make a good stand. In spots where the clover has been killed out or makes a thin stand, they will grow and produce seeds to pollute the clover seed crop. An even, vigorous stand of clover throughout, either smothers out this class of weeds or prevents their seeds from germinating.

There is another class of weeds, however, which are able to compete more or less successfully with the clover plants and therefore occur wherever they have been introduced and allowed to spread. A good stand of clover tends to hold them in check, but not to the same extent that it does those of the first class. Once introduced into a field, weeds of this second class grow in the clover seed crop until they have been destroyed by proper cultivation and crop rotation.

Weeds of the second class include ribgrass, night-flowering catchfly, wild carrot, and black medick.

To prevent weeds from maturing seeds in clover seed crops the following precautions must be taken:—

1. Eradicate ribgrass, catchfly, black medick and wild carrot before the clover is seeded.

2. An even, vigorous stand of the clover seed crop will down greene foxtail, plantain, lamb's quarters, ragweed, docks, etc.

There are always plenty of seeds in the soil ready to produce weeds to occupy space where through any cause cultivated plants fail to make a good stand.

3. If the first crop of clover is taken for hay, cut it as early as possible. If this is done, the second crop is not only able to get a good start towards producing such a stand as will keep the weeds in check but it is ready to be cut for seed before some of the weeds are sufficiently matured to cause trouble.

4. Weedy patches should be cut green or if allowed to mature, should not be raked up and included with the crop drawn in and threshed for seed. Wherever the clover fails, weeds usually grow profusely and it is these spots in a field that often contribute largely towards the impurities found in the threshed seed.

Weed Eradication

To combat weeds one should know their life histories, that is, how they are propagated, the nature of their rootsystems, when their seeds mature, how long they live, etc. Each weed has its own way of winning in its struggle with the farmer's crops, and its habits must be learned in order to know how to get the better of it.

In studying the life history of weeds they are usually considered in groups or classes according to the length of time they live: as annuals, biennials and perennials.

Annuals.—Examples, green foxtail, ragweed.

Annual weeds complete their entire life history in one year. The seeds produced during the late summer or autumn lie dormant in the soil over winter and germinate in spring, blossom, mature their seeds and then die, root and all. Some plants that complete their life-cycle in a year are known as winter annuals; ;the seeds that have matured during the summer germinate in the fall, make a certain growth before winter sets in, complete their development and mature their seeds the next summer.

Annuals may be eradicated from land, however badly infested it may be, through any method by which germination is hastened and the young plants destroyed before they produce seed. The weeds of this class that give trouble in clover seed crops are those whose seeds ripen in the fall, at the time red clover seed matures. They make little growth in the early summer, shooting up unmolested after harvest when other farm work is so pressing, and producing seeds that are returned to the soil to lie dormant until conditions are favorable for their growth a year or more in the future.

To reduce the number of these weed seeds in the soil bare stubbles should have surface cultivation directly after harvest to prevent the further ripening of seed as soon as the grain crop is removed, and to encourage the germination of seeds already in the soil. The young plants that start from the seeds brought to the surface by cultivation may be killed by the harrow or ploughed under. In hoed crops, tillage should be continued late, as it is the plants that bloom and fruit after cultivation has ceased which are most likely to polute the land. The hoe should be used to destroy the late plants after cultivation of the crops becomes impracticable. Any practice that will prevent an annual weed from seeding will reduce and ultimately eradicate it. Fields seeded to clover should be clipped with a mowing machine a few weeks after the nurse crop is harvested to prevent the seeding of autumn weeds.

Biennials.—Example, wild carrot.

Biennials require two seasons to complete their growth, the first being spent in collecting and storing up a supply of nourishment, which is used the second season in producing flowers and seeds. Biennials must be either cut or ploughed down before they flower. Mowing at short intervals in the second year, so as to prevent the development of new seeds will clear the land of this class of plants; but a single mowing will only induce them to send out lateral branches, which, if not cut, will mature many seeds. Where ploughing is impracticable, such plants should be cut off below the crown of the root.

Perennials—Examples, Canada thistle, ribgrass, docks, sheep sorrel, plantain.

Perennials are plants that live for many years. They are propagated in several ways, but all produce seeds. Annuals and biennials, which live only for one or two years and are reproduced only by seeds, may be eradicated by preventinfi them from maturing their seeds, but in combating perennials it is necessary to destroy the plant. On account of the variety of life habits of the plants belonging to this class, no general treatment for their eradication can be given except that fields in which they are prevalent must be broken up and worked under a crop rotation that provides opportunities of attacking the weeds when they are most easily injured. Methods of eradicating the different weeds belonging to this class are outlined in circulars describing individual weeds.

The Red Clover Plant and its Culture

Botanical description.—Red Clover is mainly biennial. The year the seed germinates, only short leaves and stems are produced and no flowers. The second year the flowers are developed and the seed formed, and after ripening the seed the plant dies. As with most biennial plants, the root is a tarpot; that is, the single main root gradually tapers downward and produces numerous side branches. On these are developed the small, rounded or egg-shaped nodules which contain the bacteria necessary for the proper development of the plant. From the upper end of the tarpot, which is somewhat enlarged and generally known as the crown, are formed more or less numerous buds which develop into leafy stems. These as a rule are from one-half or two feet high, strictly upright or ascending from a decumbent base, the latter being the normal growth of stems developed from the outer margin of the crown. The stems are generally branched above the middle and the leaves are single at each joint. The three leaflets of which each leaf consists are oblong or egg-shaped and usually marked with a white spot of varying size and shape.

Biology of flower.—If Red Clover is isolated during flowering time, so that no insect can visit the blooms, no seeds will be formed, as it depends upon insects to transport the pollen from one flower to another. Bumble bees. which visit the flowers in order to secure the nectar, are especially active in this transportation. As the insect travels from one plant to another, carrying pollen from different individuals, the pistils of one are apt to be fertilized by pollen from another. Such cross-fertilization, in

fact, must take place before seed can be developed.

Cultural conditions.—Being a resident of the temperate zone, Red Clover succeeds best where the summers are not too hot nor the winters too severe. Although the roots go rather deep, the plant is injured by long and continuous drought. It needs sufficient rain during the growing period to enable it to flourish during the whole season. As Red Clover is rather cosmopolitian, a great number of varieties, adapted to different climates, have been developed. The suitability of a variety for a northern climate like that of Canada depends to a great extent upon its hardiness. Chilean Red Clover or other varieties originating in countries with a mild climate are invariably killeed by the Canadian winter, except in the southern parts of the country. It is, therefore, important to secure seed of northern origin. If possible, Canadian-grown should be obtained because as a rule home-grown seed gives the best results.

Soil.—Red Clover can be successfully grown on many kinds of soil, the most suitable being clay loams with a certain amount of lime and plenty of organic matter. Sandy loams also give good returns, especially on limestone foundation; but generally speaking, Red Clover prefers the heavier soils. It can be grown even on stiff clay, provided the subsoil is open. For its proper development Red Clover, like Alfalfa, depends a good deal upon the subsoil. This must be open and well-drained. Stagnant water near or on the surface is decidedly injurious. Water-soaked soil excludes the air necessary for the respiration of the roots and is in a bad physical condition to meet the alternate thawing and freezing of early spring. As is well known, water expands when changing into ice, and if the surface soil contains an abundance of water it will consequently expand when freezing. The overground parts of the plants will be lifted up with the freezing soil. As the lower roots are anchored in the subsoil and therefore unable to follow the upward move- they will be stretched and broken. The disastrous ...rnate thawing and freez- ... evident that one of the first ... tions of successful clover growing is well-drained soil.

Habits of growth.—Being a biennial, Red Clover devotes the first season's growth to the development of its root system and the accumulation of strength to meet the winter's hardships. It therefore produces a strong tap root, which, if soil and weather are favourable, penetrates to a considerable depth. The overground parts of the plants consist at first of only a few short, upright stems which carry leaves but no flowers. Later in the season, short leafy shoots are developed which generally lie flat on the ground and are known as the winter tuft. At the same time the tap root begins to contract until its original length is reduced by more than ten per cent. As the end of the root is firmly anchored in the ground, the result is that the overground parts of the plant are pulled down. This process, which has been observed in other plants such as carrots and parsnips, is evidently meant to bring the stems and leaves into close contact with the ground where they are best protected against frost and wind. Early in the spring of the second year, the branches of the winter tuft develop into flower-bearing stems, which, if not cut or pastured, produce seed and late in the fall die. The great mass of clover plants are thus biennial. Red Clover types exist, however, which show a decided tendency to live longer, especially if the plants are kept from seeding by continual cutting or pasturing.

Seed.—Except in southwestern Ontario, Red Clover seed is only grown to a very limited extent in Canada. The Maritime Provinces have been producing small quantities in certain localities during the past three or four years. Whether or not a field should be used for seed production depends on conditions. If these are favourable, all or certain parts of the field are commonly left for seed. Success depends on many factors. If the latter part of the summer, when the seed is ripening, is rainy, there is far less chance of producing good seed than if the weather is warm and dry. Cold, stiff soils, which may produce luxuriant growth, are not as a rule satisfactory for seed production. The best soils are sandy loams with an abundance of lime and a fair supply of potash and phosphates. A thick stand of clover improves the quality of the hay but produces only a scant amount of seed. A relatively thin crop will give a heavier yield and the seed produced is of a better quality. A smaller amount should therefore be sown for seed production than for hay or pasture.

Red Clover should be cut for seed when most of the heads have turned brown and the stems begin to dry up. The seeds in most of the heads are then ripe and of a pronounced color. By cutting earlier, a large proportion of the seeds will be immature and shrunken, the vitality will be low and the general colour and appearance inferior. It can be cut with an ordinary mowing machine. The heads and flowers are easily broken by careless handling, especially in dry, hot weather. Threshing should be done in cold, dry weather as it is difficult to seeds from the pods when it is damp.

Quality of seed.—The colour of ordinary commercial Red Clover seed is mixed, some seeds being yellow, others purple, and others bright in one end and dark in the other. In some samples the bright colours prevail while in others the dark seeds are most common. It is a popular belief that bright coloured seeds are not fully mature and that samples which contain a large proportion of them are inferior. This, however, is an error. All seeds gathered from any individual plant are of the same general colour. In some plants all the seeds are yellow, in others deep violet and in others uniformly two-coloured. Bright yellow seeds are just as ripe as dark purple ones. The mixed colour of the ordinary commercial sample therefore does not mean that the seeds are not uniformly ripe. It simply means that it is composed of seeds of different types, each type having its own colour. Although the darker seeds are more popular, the colour should not be taken as an index of value as the most desirable plant types may have pale yellow seeds. Good red clover seed should have a shiny lustre and contain only a small portion of undeveloped, shrunken seeds. The legal weight is sixty pounds per bushel.

The seeds of many of the weeds that grow in red clover and ripen at the same time are of such size that they are difficult or impossible to remove by sieves in an ordinary fanning mill. Few fanning mills are fully equipped with siever for cleaning small seeds; indeed, most of them are not designed for this work. However, seed that contains a very large number of small weed seeds or that contains only a few more weed seeds than are permitted in seed that may be legally sold under the Seed Control Act may often be cleaned to grade without heavy dockage, provided the proper sieve is available.

If there is a properly equipped and operated power cleaner within a reasonable distance it will usually pay to have seed cleaned by it.

For cleaning small quantities, hand sieves may be found to be most satisfactory and economical.

A sample usually contains few weed seeds larger than the clover seed. Ragweed if none of the outer hulls has been removed in threshing, should be separated from the clover by a 1/15-inch perforated zinc riddle. Sticks, pieces of straw and anything larger than the clover run over this sieve.

A long mesh woven wire screen is better than one made of square mesh wire cloth for cleaning red clover seed. The 2 by 24 is often employed for this purpose, but the exact mesh required will depend on the size of the clover seed and the kind of impurities to be removed. A long mesh sieve will hold all the good clover, allowing the smaller impurities to apss through. This sieve, assisted by the air blast, should take out practically all of the pale plantain, much of the mayweed and lamb's quarters, and many of the ribgrass as well as shrunken clover seeds. Besides the 4 by 24 sieve, the 4 by 25, 4 by 26, 4 by 28, 6 by 28, etc., are also recommended as lower sieves for cleaning red clover, their efficiency depending upon the size of the seeds composing the sample.

The 22 by 22 woven wire screen is very useful in the lower shoe for taking out sheep sorrel and seeds only slightly smaller than the clover. In some cases the 20 by 20 or 18 by 18 may be required, but this will allow considerable of the smaller clover to pass through.

Hulled ragweed, docks, catchfly, foxtail and black medick are very nearly the size of clover and are impossible to remove by means of an ordinary fanning mill. Fields must be cleaned of these weeds before clover seed can be grown with profit.

REWARDS FOR OFFICERS AND SOLDIERS

For Services in the Field, and for Services rendered in captivity, or in Escaping or Attempting to Escape therefrom

1. Recommendations for reward for services in the field unconnected with capture and rendered prior to 15th November 1919, may now be submitted; and if the individual recommended was captured in subsequent operations, the fact must be stated.

2. Restrictions whereby recommendations in respect of services connected with capture could be considered if such services were rendered prior to 15th July, 1918, have been removed. Such services will now be considered irrespective of date, provided that, in the matter of capture, the individual has been absolved from blame by competent authority.

3. The following srevices are eligible for such forms of reward as may be considered appropriate, provided that no blame has been attached to the individual in respect of original capture:

(a) Exceptional services rendered by officers and soldiers whilst prisoners of war or interned.

(b) Exceptionally gallant conduct or determination displayed by officers and soldiers in escaping or attempting to escape from captivity.

When merited services of this nature will be eligible for such "gallantry" distinctions as normally reserved for "services under fire."

4. The facts supporting each recommendation must be substantiated by statements of evidence from at least two witnesses, who have first-hand knowledge of the circumstances of the case; and, except under para 3 (b) above, one of the witnesses must be an officer.

5. Each statement of evidence supporting a recommendation must be made out in the handwriting of the witness who signs it. A single statement signed by two or more witnesses will not be accepted.

6. Recommendations will not be accepted unless they reach Militia Headquarters by 31st August, 1919.

For officers and soldiers who are serving, they will be submitted through the usual official channels.

For officers and soldiers who have been demobilized, they will be forwarded through the District Officer Commanding, in whose command they are resident.

In forwarding recommendations, District Officers Commanding will add such comments as they think appropriate.

Forms of recommendation may be obtained at Militia Headquarters, M. D., No. 7, St. John, N. B.

MEETING OF THE N. B. CHEESE AND BUTTER BOARD

The regular semi-monthly meeting of the New Brunswick Cheese and Butter Board was held in the Agricultural School Building on Wednesday afternoon, the 9th inst. Representatives from the different factories were present and the buyers on hand were R. B. Colwell, Halifax; Mr. Stubbs, representing H. W. Cole & Co. and Mr. Bonnell, Harris Abattoir Co.

The cheese boarded were as follows:

Factories	No. cheese
Havelock	50
Lower Ridge	50
Cornhill Corner	65
Cornhill	125
Newtown	48
Killam's Mills	50
Lewis Mountain	50
Mannhurst	50
Mt. Middleton	25
Carsonville	55
Hd. of Millstream	100
Berwick	50
Collina	60
Pearsonville	50
Belleisle	65
Hammond	60
Clover Hill	25
Penobsquis	25
Total	1003

The price offered by the buyers did not come up to the expectations of the salesmen and of the above only 165 cheese sold on Board at highest price offered, 28.2. Several important points came up for discussion before the Board.

One of the buyers, Mr. Colwell, of Halifax, said that cheese from New Brunswick was invariably short in weight, averaging one pound or more. He felt that the scales at the factories should be inspected and this evil remedied. Attention was also called to the fact that water proof covers should be kept on hand by factories to cover cheese which is being moved from factories to railways for shipment in wet weather.

The next Board meeting will be held on July 23rd.

CROP REPORT

The cutting of hay has become quite general in Carleton County. The crop is generally below the average. The cold dry weather of June, accompanied by several frosts, was responsible for the lack of growth. In the northern counties reports indicate a very poor hay crop. Some reports state that old weadows are hardly worth curring. In the eastern section, the crop is later and will be helped some by recent rains. In the southern counties and York the crop varies from average to poor, according to whether the meadow is new or old.

Grain Crops generally have a good color and promise well at present. With a few good rains when the crop is heading and filling, there should be a good average crop. Pastures are good and recent rains will hold them for a time longer.

Cattle are generally in good condition.

The season for the berry crop has been lengthened by the rains. Prices have advanced considerably during the past week.

The shoes should be removed as soon as field work begins. There is no earthly reason for shoes on a horse with sound feet, while he is working in the field. A horse that is used for driving to town may be kept shod.—Geo. F. Glover.

The soils most benefited by wood ashes are light, sandy, and gravelly loams and mucks and peaty soils.

Gleanings From the N. S. Agricultural College

SEASONABLE HINTS

Don't let the hoe get rusty. Whether it be of the hand variety or the horse cultivator it should be kept moving at every opportunity. It destroys weeds, conserves moisture, and sets free elements of fertility in the soil which otherwise would not be available to the growing plant. Experiments have proven that a surprising percentage of increase in crop results from each trip of the cultivator.

DAIRY NOTES

We are now coming to the crest of the wave for the year in Dairy products. The hot weather is on and a great deal depends on the manner in which cream is kept. The creameries are having a big season and the bulk of butter now made goes into cold storage. Creamery men have more difficulty in getting sweet cream now than at any other season. The creamery patron is directly affected also by the treatment he gives his cream. There is bound to be a considerable variation in the July tests on account of delays in delivery or carelessness in handling. If the cream is kept cool and delivered sweet the variation will be slight.

All our creamery managers are glad to give any assistance they can in the way of advice and otherwise. It is in their own interest to do so, and in many instances conditions can be much improved with little or no increase of labour or expense. The price of butter fat was never nearly as high as this year for the month of July, and the consumer who pays will expect, and has a right to expect, that what he buys at such prices will be of the finest possible quality. The whole matter is summed up in a word:—Keep the cream clean and cool and do not delay delivery.

Many different means are in use for simplifying the work of caring for cream. Where natural conveniences are not at hand the most practical of these is the insulated tank. Plans of this device, or any information desired may be obtained from any creamery manager or from the Dept. of Agriculture, Truro.

STUDENT PROSPECTS

Applications have begun to come in to the Agricultural office from students who expect to join the classes in Agriculture next November. There never has been a time when the profession of farming offered such opportunities as the present. It is not to be expected that many students will take up the general courses unless it is their intention to farm. But the man who wants to farm needs scientific education now more than ever, and to have it pays better than ever. The difference between good and poor farm practice is accentuated by the higher scale of prices, and the enlarged vision which technical training gives a man opens doors of opportunity which he never before dreamed of. The Province of Nova Scotia, and the Maritime Provinces generally, have at Truro an institution of which they may well be proud. It is not merely a school of farming; it is also a College where the highest ideals of citizenship are stimulated. The attendance this year should be larger than ever.

A GOOD TRACTOR TEST

The management of the Horticultural Division at the College have recently been clearing a tract of land, which had never been plowed, and was heavily overgrown with small birch, Laurel and blueberry. A tractor drawing a western breaking plow was tried out. The College authorities are most enthusiastic over the results. The land was hillocky, and the growth very tough, presenting a pretty hard proposition. The growth was completely turned under, and a splendid seed bed formed with half the labour usually required for breaking such land.

THE POULTRY PEN

Now is the time to weed out the poultry flock. The old hens must be disposed of without sentiment or pity. They will lay few eggs after this, and will probably spend the major part of the summer occupying nests that should be better used, and doing their best to spoil the good work of younger fowls. Kill and eat or market every hen that is two years old or more, unless there is very special reason to keep her for breeding purposes, and even that is a doubtful measure.

Swat the rooster! In olden days, before the invention of the clock, he had an important function as a kind of town crier to tell the time, and ancient literature has frequent references to the time of the cock-crowing. The modern world has no need of him for that purpose. It has much more reliable and musical means to awaken us to the new day. His crow is all he has to offer for his feed from this time forth until next Spring, and it is not worth it. The hens lay just as well—indeed experiments have shown that they do better—without his attentions. The infertile egg is the only one that is fit for market or even for food at home in warm weather. It is a well-known and a somewhat inappetizing fact that a few hours of warmth produce an amazing development of the life germ. A general rule is that the fertile egg becomes unfit for eating purposes almost as quickly as milk, if lying in a warm place, while infertile eggs have been used and betrayed no taint after 14 days in an incubator at 103 to 104 degrees. In other words the keeping qualities of fertile and infertile eggs is as 24 hours to at least two weeks.

Kill, sell, or confine all mature male birds as soon as the breeding season is over. "Swat the rooster!"

The idea is common that the cellar is the place to keep cream while ripening. It is in many cases a mistaken idea. Unless the cellar is perfectly ventilated and free from all roots and vegetables there is almost sure to be a taint on the cream. In the matter of cooling, cream left in the open air will cool very slowly. When taken from the separator it should be immediately placed in cold water. If our memory is correct it takes just about seven times as long to cool off any warm substance or liquid in the open air at, say, 40 degrees fah., than it does in water at an equal temperature.

The egg-laying contest announced by the Poultry Division, N. S. Dept. of Agriculture, is getting well under way. Quite a number of entries have already been made. The top limit is thirty pens, and any one wishing to make entry should do so at once and avoid disappointment. The management wish to make it clear that this is not essentially a test of breeds, although that may incidentally come into prominence when results are given out. The central dea is to stimulate a higher production per hen than now obtains in most quarters.

When spraying for bugs, spray also for blight and kill the two great foes of the potato crop with one does. Any arsenical poison may be mixed with Bordeaux mixture to accomplish the double function. By the way, persuade your dealer that you are not anxious to pay three times as much for a green poison than for a white one that does the work better. The cheapest buy poison at present is arsenate of lime, and it is being manufactured in enormous quantities now on account of its efficacy against the boll weevil, the foe of the cotton grower. If you cannot get it this year, however, use what is at hand.

While the number of those who manufacture butter at home is much less than it was years ago home made butter is still a considerable item, and when it can be obtained of good flavour and quality is preferred by many consumers to the creamery product. There is a surplus of Dairy butter at this time of the year also, and it must be made with the expectation of keeping until winter. This is not at all a difficult matter. Butter that ies carefully made and put down will turn out in equally good order whether used next week or next winter.

Cream kept in stone crocks or wooden churns while ripening is almost sure to convey a tainted flavour to the butter. The writer has again and again been victimized in greater or less degree by good looking and cleanly made butter, which at first had only a faint flavour of the receptacles in which the cream had been kept, but which rapidly deteriorated in quality until unfit for table use. In hot weather it is particularly necessary to exercise care in this matter. To get best results, and it will pay in the long run, keep the cream in clean tin dishes large enough to hold a complete churning. Keep it cool and well stirred. Do not add fresh cream to the old until thoroughly cool. The quality of the finished product, apart from this question of the kind of dish to use, will be largely determined by the treatment the milk and cream receive during the first half hour.

Why Not Name the Farm

It is rather unfortunate that more farmers in Maritime Canada have not adopted names for their farms. The average farm is usually referred to in some such way as Lot 21, Cincession 3, Township of A——, a description which, to say the least, is a perfectly definite and accurate way of locating it; but the question naturally arises, does it give any touch of "individuality" or "personality" to it? Does it bring out any feature which serves to distinguish the farm from lot 20 or lot 22 adjoining? Evidently not! The only way of giving the farm individuality is to name it. The ramshackle summer cottage is deemed worthy of a name, while the city resident often sports a name plate bearing some such inscription as "Inglewood," even though the owner himself is the only person who can explain the adaptability of the name to the house, or the house to the name. If such are worthy of special names, does not the farm merit one as well?

What's in a Name?

To use a military term, it might be said that giving a name to a farm improves the "morale" of the staff. The moment that "Riverside Farm" is painted on the end of the new barn, or appears on a nameplate at the front gate, automatically a sort of responsibility is placed upon all hands to keep things looking just a little bit better than before. The fact that the attention of the passerby has been directed to the farm an account of its name invites an effort on the part of every member of the farmer's family to keep everything looking spick and span. To have the name "Riverside Farm" connected with a poorly tended lawn, a dingy unpainted barn, a muddy lane, straggling fences, a weedy garden, or a shabby looking farm home is not a very welcome idea to the owner and his family, and they will be prepared to do everything possible to prevent such an impression from getting abroad. This brings to light one way in which the farm name claims value on a cash basis, as well as merely catering to sentiment. A farm where the buildings and equipment are in good repair is of more value and brings a higher price on the market than a place in bad repair. Giving the farm a name adds interest to the sort of humdrum task of keeping repair work promptly looked after, and hence adds value to the farm.

An Advertising Scheme

Naming the farm is a pood stroke of business for any farmer, no matter what his particular line may be. The breeder of pure bred stock, however, has a much better chance of reaping benefits from the use of a farm name, than a farmer who is not specializing along any particular line. He has the chance to turn it to good advantage as an advertising dodge—one which though it costs him nothing to carry on, keeps his name before the public, and in all likelihood, long after he has handed over the reins to more youthful hands, and exchanged the worries of business, for slippers and the easy chair. We refer to the plan of working the farm name into the pedigrees of live stock, born and reared on the farm. In the natural course of events representative animals from the farm herd will find their way into the stables of various stock farms here and there throughout the country. Some of them, if they fall into the right hands, will probably win honors in the show ring, others may perhaps come to the fore as efficient milk and butter producers. One thing certain, whatever may happen them, wherever they may go, they will reflect one way or the other on the farm they came from, and the breeder who bred and developed them, adding to or detracting from his reputation just according to their deeds.

The advertising feature of the farm name may be exploited in a rather more direct way than the one mentioned above. Letterhead stationery bearing the name of the farmer, and some sort of a business add outlining the sort of stock he may have for sale, along with perhaps an engraving of some exceptionally fine animal may be used. Then, too, if his banker is of the accommodating sort with an eye open for good business, he will supply him with prifate cheques with his name printed on them. Better still he might be persuaded to make up a special cheque carrying the name of the farm. The banker would not be in the least reluctant about doing this for a good customer, and in assisting his farmer customer to adpertise he would also be doing his bank a good turn.

THE MARITIME FARMER

And Co-operative Dairyman
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Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

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DATES OF ISSUE.

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JULY 22, 1919

WHAT COLORADO FARMERS THINK OF THE SILO

The following opinions from Colorado farmers were obtained by sending questionnaires to a number of silo owners. They are Colorado testimonials to the value of the silo.

"Ensilage has cut the cost of butter fat production in my herd 25 to 40 per cent."—W. C. Swinehart, Adams county.

"Ensilage feeding caused increase of 48 ibs. of butter fat per cow in my herd."—W. C. Swinehart, Adams county.

"I sold silage at $10 per ton on the place this year."—C. J. Birgasil, R. F. D. 1, Fowler.

"Harvesting the corn crop all at once instead of all winter with the wind blowing one-third of it away" is the testimony of W. A. Hobson, Swallows.

"My two silos have enabled me to increase the amount of stock that I can feed."—Victor Akin, beef feeder, Fort Collins.

"I like silage because it can be fed economically in any kind of weather."—F. P. Breniman, beef feeder, Fort Collins.

"Bigger cream checks and healthier cows," is the evidence of W. A. Atkinson, Hoehne.

"Silage keeps cows in healthy condition and increases efficiency of other feeds."—H. F. Lombard, Concrete.

"Silage saves veterinary bills and gives me a larger amount of feed per acre."—George S. Turner, Canon City.

"Ensilage is a cheap and satisfactory feed and the cows give down milk well in winter."—O. H. Chambers, Golden.

CULL OUT THE BOARDER COW

A good example of what cow testing is doing to help dairy farmers to cull unprofitable milk producers is shown by the experience of a dairyman who reports the results of his work in R. O. P. work. He found that one cow was paying him $2.40 for each dollar's worth of feed, while another returned only 58 cents. This dairyman lost no time in selling the poor cow, and five others which showed by test that they were not paying for the feed they consumed. This year he is producing milk at less cost, thus increasing his profits. He writes, "I have cut down on the feed cost by eliminating the boarders, and can still further reduce it by using more clover and alfalfa than was available last year."

THE SCRUB BULL

At a recent Ontario Winter Fair," writes Prof. Geo. E. Day, "the steer which was beaten in his class only by the steer which afterwards won the Grand Championship of the Show, was out of a little scrubby cow of no particular breeding. How did it happen that such a miserable little cow produced such a good steer? The answer is simple. The sire of the steer was a good Shorthorn bull.

"Perhaps an independently wealthy man can afford to use a scrub bull if he wants to, but the man who has to make his money off the farm cannot afford to use a scrub bull at any price—not even though received as a gift. The difference in the value of the progeny will pay many times over the difference between the price of a good bull and a scrub."

VISITORS WELCOME

The dairyman who makes an effort to handle milk in a sanitary way welcomes visitors to his farm and barns. He enjoys having them see the source of the products which they buy and the methods which he uses, and the fact that he is likely to have visitors encourages him toward better methods and use of better equipment. It is the dairyman who is careless about handling milk and whose methods are not up to standard who usually knocks against public inspection and closes his doors against the visits of his patrons. There is no better way for a local dairyman to advertise his product than to let it be known that he is glad to have visitors inspect his place, and that he takes pride in showing them his animals.

HAVE LADDER HANDY

Not a few farmers neglect to make preparation to protect their buildings from the dangers of fire. On many farms there is not a ledder long enough to reach to the roofs of the buildings where a fire may be stopped in its first outbreak. As the majority of fires start by sparks alighting on the roof, it stands the farmer in hand to be equipped for getting on to his roofs in haste, and not have to go to a neighbor to procure a long ladder. Any farmer who can handle tools, and every one should be able to do so, should make a good strong ladder and have ti ready for emergencies. Even at the high price of lumber, it is economy to have several good strong ladders on every farm.

THE NATIONAL VALUE OF CHARACTER

We are apt to think of character as belonging to individuals only, forgetting that groups of individuals form communities which by grouping in turn form large districts, until soon a whole nation is included. The old saying that "no nation is truly great and strong whose citizens are not great and good" is equally true to-day as when it was first spoken. Character is the greatest asset. This is as true of nations as it is of men and women who supoprt the nation.

WAR ON RATS

Farmers should keep up a constant fight against rats. They are enemies of the worst kind. Set traps, put out poison, clean up the premises to get rid of the breeding places, rat proof the buildings, keep a good rat dog and co-operate with your neighbors in ridding the community of rats. Don't wait until the governor of the state sets a rat day, but set your own rat day in which with your neighbors you institute a raid on rats. As long as rats are numerous every day in the year should be a rat day in which the fight of extermination is waged.

THRIFT KEY TO OPPORTUNITY

Thrift is the greatest asset an individual can have. He who lives up to his means, who lives from hand to mouth, can not weather unforeseen adversity. He can not meet the unexpected opportunity which knocks but once at a man's door. The thrift man has the golden key which opens the door to greater things.

MUD AND DUST

The muddier a road gets the more dust will result when it dries up. The sides of the ruts are ground to dust. The road bed that is kept well crowned, hard and smooth offers no place for water to stand, so it will not develop bad ruts or much dust. The road drag is one of the best implements for keeping a riad bed smooth, well crowned and hard, if it is used soon after each rain.

* * *

There is a whole lot of truth in the statement of a farmer who had made a close study of human nature, when he said: "Brother farmer, if you want your boy to stay on the farm and be contented, don't bear too hard on the grindstone while he is turning the crank." Many a boy has left the farm because his father was not considerate of him and did not realize the truth that young folks must not be expected to bear as heavy burdens as their elders wish to bear. The old saying, "You cannot put old heads on young shoulders," is a mighty good thing to keep in mind when dealing with young folks. Just look back to the days when you were young and wanted some joy along with the daily toil.

* * *

All users of farm implements should anticipate, so far as practicable, the necessity for repairs and replacements sufficiently in advance of the working season to make it possible to put their implements in good working condition before the spring operations begin.

Manufacturers and dealers declare that if they can know sufficiently in advance the needs of the farmers for repair parts, tese parts can be supplied when they are needed. If the needs are not known to the manufacturers and dealers until the actual time for use, troublesome and costly delays are likely to be caused—delays that may be felt in increased production at harvest.

* * *

The extra cost that is tacked on to a quart of milk after it leaves the farm may be justified under existing conditions and the present method of handling the milk business, but some day this food is going to be sent from the barn to the kitchen at far less expense. In order to do this it may mean municipal distribution, or some other way, but in any event it will mean less cost.

* * *

The modern dairy cow must be handled with understanding and her owner must have a knowledge of her wants and make every effort to supply them.

OBJECTS AND METHODS OF PLOWING TO PROMOTE GREATER FERTILITY OF FARM

How deep plowing should be done is quite an open question with many farmers, but the answer is regulated by the character of the soil and nature of the crops. Some sandy or light soils can be plowed to the depth of eight inches without injury, while others are impaired by plowing deeper than four inches. This difference is due to the soil formation and will readily become known on a farm or district from experience. On clay soils four to six inches will be found better, provided clover or alfalfa plants are used to break up the subsail. **The chief objection to plowing heavy clay or heavy loam soils year after year at the same depth is that it leaves a hard plow pan at the furrow depth that is apt to arrest the natural drainage, or moisture holding capacity of the soil.**

The depth intended to plow is determined by the kind of plow used. If plowing shallow it is best to use a narrow plow, ten or twelve inches, but if going ten inches deep the plow must be 14 inches wide to have room to turn the furrow over. Heavy, dry limestone soils give the best results when plowed seven and eight inches deep. The tendency, however, is to plow too shallow rather than too deep. The depth of plowing depends largely upon the type of soil and of sub-soil, and to some extent upon the crop raised. Deeper plowing is required for potatoes and root crops than for cereals.

Deep Plowing

Deep plowing on clay soils is objectionable if done all at once. It takes two or three years for the bottom soil, that has been thrown on top in large quantities, to become accumulated and get in condition for the plant to use the fertility that is there. It is all right to bring up an inch or so of the bottom soil when plowing for roots or hoed crop, once in a rotation, but to plow a clay soil eight or ten inches deep all at once is not a safe thing to do. The first cropping of such will prove unremunerative; the gradual way of bringing up the bottom soil is the safe way to bring a farm towards its ability to produce its maximum. By turning up an inch or so of bottom soil in the fall plowing and putting manure on that soil, thus gradually reaching to nine or ten inches deep, a farm will produce bigged crops than where shallow plowing is done and sub-soiling is left to clover and alfalfa. **Big yields year after year never come from shallow plowing.**

In plowing heavy clay soils the aim should be to prevent the formation of the hard plow pan by varying the depth from year to year. Also where deep plowing is resorted to there is less washing out of soils. It is a means of draining a soil also, by bringing it to such a texture that all water falling on it will be absorbed or pass through it. When soil is heavy this is hard to accomplish. Such soils, especially if heavy, may often be plowed into "lands" to advantage. Lands from 15 to 30 feet wide are often used, but lands 60 to 75 feet wide will drain the soil more effectively, because not enough water may flow into dead furrows from narrow lands to make sufficient current to carry it off. Level fields though fairly well drained, naturally or artificially, may be left in lands of 30 to 50 feet wide.

In Britain, where mose intensive cultivation is practised, there are no lands in the field, the underdraining that has been going on during the past 50 years is now so complete that one way plows are largely used, and level fields without dead furrows are universal.

To sum up deep plowing it may be considered that eight inches is sufficient for many soils, and rarely is it practicable to plow more than eleven inches deep. Most field crops feed much more deeply than is generally realized. Root crops and corn occupy the ground to a depth of four or five feet, according to the nature of the subsoil. But most of the feeding roots are in the plowed ground, because this is the richest, warmest and best ventilated part of the soil. Ventliation of the area in which the roots penetrate ein the soil, has as much to do with the healthy growth of plants as the ventilation of the barns has to do with the health of the animals housed in them.

Sub-Soiling

Another method of deepening the cultivatable area is by sub-soiling with a plow that follows the plow that turns the sod or upper soil. It does not throw the sub-soil on the top, merely breaks up the bottom and leaves it practically in the same place but broken and loose. About 30 years ago this method was practised by many farmers in iBritain, but it is not so popular now. The best method of having a deep soil in that country has now been proved to be with the practice of taking up an inch or so of subsoil every four, five or six years, according to the rotation practised on the farm. This has resulted in increased crop yields in roots and grain; in other words, it gives an extension of fertile areas by deepening rather than by widening. Where extension in surface areas cannot be procured, as in the confinedareas of a country like Britain, better results with less labor than is required on extended areas has been got by deepening the soil. It was found that the soil that was loosened by the subsoil plow quickly fell back again and became compact. It afforded only temporary relief and had to be replowed every few years with a subsoil plow to keep the bottom soil loose.

In Canada, where there is as yet unlimited choice, and areas in virgin soil, the tillage question has not become so necesary, and neglected farms and areas are the result. But when a farmer who has an interest in his business and elects to stay on his farm, he will find that he will double or treble the value of his holding by making a study of the closs of tillage that will best increase its fertility.

If one waits in the spring until the subsoil is dry enough to make subsoiling possible, the surface soil will usually be too dry to be plowed with advantage, and will have lost too much of the moisture needed for crop growth. Then, again, **loosening the subsoil in the late spring tends to cause the formation of large masses that wil limpede the movement of soil moisture.** In such a case it should be dones in the fal so that the larger clods may become disentegrated through the action of winter's frost.

The more general practice of underdraining is lessening the appreciation of subsoiling. Underdrainage loosens, deepens and areates the soli permanently and to a much greater depth than subsoiling. At present where subsoil plowing is done it is confined mostly to well-drained lands which have a hard-pan that is close to the surface. Subsoiling is injurious to a wet clayey soil tending it to puddle. It should follow, and not precede, underdraining.

The practice of shallow plowing and shallow tilling still lingers with the Canadian farmer, a clinging to the methods that gave esuccess to the first settlers. They forget that these pioneers were dealing with virgin soil. Shallow plowing was necessary then, but as soon as the native sod was subdued it was found that deeper plowing was needed. Farmers who persistently plow a shallow three to four-inch furrow and sometimes not at all for a year or two, the surface being sufficiently scratched to cover the seeds, could easily double the feeding crops by better and deeper tillage. **Good tillage—deep plowing, thorough harrowing, frequent cultivating—will delay the day when fertilizers will be needed, because it enables the farmer to get the most from the soluble plant food aready in the soil.** Thus is is seen that simply stirring the soil, the commonest work on the farm, and the work which often receives the least thought, sets at work agencies that exert a profound influence on the productivity of the land.

SOLDIER SAVES MONEY ON FARM EQUIPMENT

(From the Director of Information, Soldier Settlement Board, Otawa.)

Hon. Arthur Meighen dealt with the advantageous prices quoted to soldier settlers when the bill to assist soldiers in settling upon the land was in Committee of the House. He said:

Having decided that we ought to adress ourselves to the task of getting the soldier a better price in the purchase of his stock and equipment than the ordinary retail price, we entered into arrangements with the manufacturers of every article that the soldiier desires—that is, everything he is entitled to buy out of the Government loan. The Government, as is manifestly necessary, supervises every purchase. Not a single dollar of the money we loan to the soldier is spent except under the specific supervision as to every article by the Board itself, and in the determination of what he is allowed to purchase and the payment care is exercised and definite and iresistible rules are followed.

For example, the Board has determined that a man shall not be permitted to purchase a tractor; we did not think we should enter upon that phase of farming, as it is based upon a skill of operations that is beyond the capacity of a pioneer to be made a settler of. That is something which he could reach later on. If we permitted infraction of that rule we would be engaged upon payment and launching men upon work that perhaps they could not cope with, and so we do not permit it.

All the Soldier Requires

Limits are also placed upon the price that can be paid for horses, and so on. We have managed to succeed in effecting arranbements with the producers of all the goods that the soldier will require and would pay for out of his own money which redound t othe very great advantage of the soldier settlers.

In the first place we have effected arrangements with all, or at least all the principal manufacturers of agricultural implements, whereby the manufacturers of implements use their organization for the delivery of their implements as the soldier may choose, and they get those implements to the soldier at the wholesale price at that without any further charge whatever. In addition to that the manufacturers pay the cost of distribution, and pay their agents a special commission for handling the implements. The soldier pays nothing at all except the ordinary bulk freight rate on his shipments, which he gets at the wholesale cash price.

30 Per Cent. on Harness

As regards harness a still better arrangement has been made. The general saving which he makes on harness is 30 per cent. of the retail price. It is even less than the wholesale price, and he gets his choice. Our arrangement is such that the payment is made through the Board. The manufacturer of harness has no difficulty whatever. Shortly after the harness is delivered he gets his pay. Owing to the fact that there were considerable stocks on hand we made an especially advantageous arrangement as regards that commodity.

An arrangement is made as well whereby the wholesale price is secured for the soldier for his hardware. He can get it where he likes and pays the wholesale cash price and no more. He pays the wholesale cash price also for his lumber. They do not generally buy in less than carloads, in which case they get the mill price, but if they do not all they pay is the actual disbursement. The same arrangements have been effected as to the other commodities he buys, and I have here tables to show what the soldier settler saves at each point and what he would have to pay if he wrote buying as an ordinary purchaser. The total he saves is a most substantial sum.

(The Minister quoted figures from various distributing points showing that the soldier purchasing through the Board had effected an average saving of 21 per cent. on agricultural implements in April. He also quoted figures for horses, the average price being $152.

CUTING RED CLOVER FOR SEED

As a rule clover should be cut for seed when a large majority of the heads are thoroughly ripe. This may be ascertained by going over the field and rubbing a head here and there. If the seed will shell into the palm of the mand when the head is rubbed, it is ready to cut. If, however, the seed, in some of the heads is green and not properly hardened, the clover should be allowed to stand, even at the loss of a few over-ripe heads. It must be borne in mind that in any field there will be late flowering clover plants in which the seed never ripents. **A mistake is often made in cutting before the seed is ripe.**

Clover may be cut with the mower with a small table attached to the cutting bar so that the clover may be raked off with the hand rake. It may also be cut with the self-rake reaper and with the self-binder.

The binder is the best machine to use if the clover is heavy and stands up well . When cutting with the binder the cord should be removed and the spring slackened so that the binder will trip continuously. The binder has two boards to hold the sheaf, which boards should be slackened also in order to allow the clover a free course to the ground. In dropping to the ground the clover will not shell and will be light so that the wind and sun can easily dry it out. The windrow will be out of the way of the horses and machine and can be easily gathered with the barley fork.

As to the length of time the clover should be allowed to remain in the windrow, this will depend on the weather and on the condition in which the clover is cut. Sometimes it must remain two or three weeks. It is not wise, however, to alow the straw to become black and ruined for fodder. Just as son as it is well cured it should be gathered in.

SAVE CLOVER SEED.—NO OLD STOCKS.—HIGH PRICES ASSURED

Both the American and Canadian clover seed trade have practically no reserve sctocks of clover seeds being carried over for next season. On the Toledo market, red clover seed for autumn delivery advanced during the last two weeks in May from $19.90 per bushel to $21.80.

This situation indicates that special attention should be given to all clover seed crops in Eastern Canada. Most of our clover seeds are usually produced in Western Ontario, but prospects are very poor there this season as the new clover stand was badly damaged by the dry period of last summer.

nI districts with good clover crops, early cutting of the red clover ror hay will give the best chance for a seed crop. Weeds producing seeds which are difficult of cleaning from the thrshed clover seeds should be rogued from the standing seed crops.—Seed Branch, Ottawa.

HORTICULTURE.

RUST FLY

Pest of Carrots and Celery

By A. J. Gorham, M. Sc.

Last season the carrot crop in the gardens and farms about Sussex and other parts were badly affected by Carrot Rust Fly.

The chief damage of the rust fly is the riddling of the root with rusty colored burrows which impares its value and allows rot to start and destroy the whole root.

The first sign which appears in a field of carrots attacked by this fly is the reddish brown or rusty shade of leaves which eventually die; second, a cluster of fine small leaves at crown. The root will be found to have numerous fibrous rootlets.

The first generation appears along about the latter part of May or early in June. The rust fly measures about one-sixth of an inch long, has a black or dark green body, pale yellow head and legs, and black eyes. These flies lay eggs in holes or cracks near the young plants. From the eggs, yellowish white, legless larvae or maggots emerge and attack the carrot at the most susceptible part; that is, where it narrows down to the thickness of an ordinary root. After working in the root for four or five weeks, the maggots emerge and pupate in the soil. The escond brood appears early in August, and it is this brood which has given the most trouble.

The following control measures are suggested:

1. Rotation—Change the location of your carrot or celery crop year to year, using fields as far separate from one another as possible. Do not follow celery with carrots or vice versa.

2. A poison bait spray made up as follows: sodium arsenite, one-fifth ounce; molasses, one pint; water, one gallon. The sodium arsenite is dissolved in boiling water and then mixed with the molasses and properly diluted. It is applied in coarse drops by a sprayer or sprinkled about by means of a whisk broom dipped in the liquid. No attempt is made to cover the plants, as the flies are strongly attracted by the material. Perhaps, as in the case of the onion maggot, this solution could be applied on alternate lands, or checkerboard fashion, thus relieving the necessity of treating the entire field. Further experimental evidence is necessary in any case. The first brood which emerges in May should be controlled by the poison spray, but because of the uncertainty connected with the exact time of emergence of the second generation, this one cannot be controlled similarly.

3. Destroy all wild carrots on the place, as they are the breeding places for the flies. It is also well to clear up carrot or celery fields, removing small carrots which would be left in the ground over winter and destroying celery refuse about the fields.

It is stated that raking or cultivating fields to sufficient depth to expose the larvae to the action of the frost will kill many, and an early deep plowing of the land in the spring before flies have a chance to emerge should dispose of most of the others. What value the plan may have in the light of recent developments, I am not in a position to say.

PREPARING FOR THE HONEY CROP

The beekepper who gets the big crop of honey is the one who gets his bees erady to gather it. Much of the strength of the colonies depends on the way they are managed before the honey flow begins. If they do not get started early and build up fast they will not be in a condition to do more than hold their own or gather a moderate amount of surplus, but if they are made to build up fast and are kept from dividing up their forces by swarming, they will be so strong when the flow begins that they will store honey rapidly, and if the season holds out, will fill several supers.

The first thing to do is to find out whether the hive has a queen in it. To do this examine a few frames in the middle of the hive after the bees begin to fly in the spring. If they are showing eggs or larva in the middle of the frames you will be sure a queen is there, but if not you will be pretty sure that she has been lost, and will put a frame containing eggs from some other hive in exchange for one of the frames, brushing the bees off of each frame first before making the change. If you did not do this the bees of the hive into which it was put would be apt to kill all except the very young ones. The bees will rear themselves a queen from the eggs in this frame if they are queenless, and if not they will not suffer any harm from having it given them. You would gain time and make the colony stronger if you united it with some other colony, if it is very weak, or if you have another very weak colony with a laying queen that you could use. The two will stand a good chance to make a very strong colony while either one alone would not be likely to build up to be so very strong without taking bees from some other hive to help them. To unite, take the queenless colony and put it over the one with a queen, with a newspaper between them. When the bees have eaten their way through the newspaper and mixed with the bees in the lower hive they will have become well enough acquainted that they will not fight.

I have never fed bees much in the spring, and I do not advise the beginner to try it unless a long, wet, cold spell comes soon after the bees begin to fly and you see they have almost no honey in the hives. If you do have to feed you can do it by putting a super on top of the hive and then putting a half cup of this sugar syrup in a dish in it every night. Have the syrup hot, and made by dissolving one part of sugar to two parts of water. Put some cork shaving into the dish for the bees to stand on, unless the dish is made of wood so they can cling to it. They will drown in the syrup if this is not done.

The main attention the bees will need after they begin to get honey enough to feed the larva will be to give them plenty of room so they will not want to swarm. The entrance should be made just as large as possible, and a super put on top as soon as you see that the bees are sealing over honey in the outside frames in the hive below. When the first super is half filled raise it up and put a new super below it. The bees will finish filling the first and work on the second at the same time to a certain extent, and when you see the second is half full you raise the two and put another next to the hive. Keeping this up will insure even filling of the supers and at the same time give so much empty space next the hive that the bees will always think they have plenty of room.

The hives should be so located that they have the early morning sun and are protected from northwest winds, for the bees will start out early in the morning if this is done. Then the hives will be warmed up quickly and kept from being chilled by cold winds, and this will keep the beees inside at work making comb and feeding larva. Eraly heat has much to do with rapid building up.

When we take the best care to keep the bees supplied with room we cannot always prevent swarming. The next thing to do is to swarm them artificially, so we can do it when we please, and with no danger of losing swarms, or to let them swarm and hive the swarms on the old stand so as to get all the workers from both hives. As these are special processes too long to describe in this article we will not attempt it.—C. H.

POTATO BETTLES VERY ABUNDANT

By G. E. Sanders

It has been years since potato beetles were as abundant as they are this season. From present indications a

Massey-Harris

The Binder that Never Fails

The Massey-Harris Binder takes all the worry out of Harvesting, for its owner knows that no matter in what shape the grain may be, his "MASSEY-HARRIS" will handle it and get it all. Years of actual work in the field have proven that for heavy crops, or down and tangled grain there's nothing to beat the Massey-Harris Binder. Thousands of farmers now look forward with happy and easy minds to harvest, in contrast to the old-time anxiety that accompanies uncertainty, because with a Massey-Harris Binder they take no chances—it gets all that grows.

Trussed and re-inforced at every supporting point, it is unsurpassed for strength and permanence.

The Reel can be set in seventy different positions, from sweeping the Guards to 31 in. above the Knife, all positions being obtained through one Lever which is within easy reach of the driver. An Adjustable Reel Brace prevents the Reel from sagging.

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HANTSPORT, N. S.

large proportion of the fields will require treatment within a week of the appearance of the plants if the maximum crop is to be grown. On account of the fact that the adults or hard shells can very seldom be completely controlled by the early spray, it would be good business for all potato growers to make plans for thorough spraying when the plants are about ten inches high.

If the young plants are attacked by adult beetles within two weeks of their appearance, it is probable that the best treatment would be to dust the young plants with arsenate of lime. Spraying with arsenate of lime two pounds to forty gallons would be equally effective. Arsenate of lead or Paris Green may be used if arsenate of lime is not available.

When the plants are ten inches high or when the first larvae or slugs or soft shells, as they are often called, appear, growers should spray very thoroughly with a poisoned Bordeaux made up of,—

4 lbs. copper sulphate,
4 lbs. lime.
1½ lbs. arsenate of lime.

On making the Bordeaux the lime and the copper sulphate should be dissolved separately in upwards of twenty gallons of water and then poured together. In using arsenate of lime as an insenticide it is best to add it to the completed Bordeaux.

In New Brunswick where arsenate of lime is not available in all sections, arsenate of soda which is sold under the trade names of Arsenoid and Sol arsate may be used in Bordeaux only in place of the arsenate of lime.

Poisoned Bordeaux made according to the above formula should be applied every two weeks during the entire season after the plants are ten inches high. This will insure freedom from both insects and fungus diseases.

SPRAYING POISONS

Probably the standard poison for biting insects is still Paris Green. It is green, and therefor easily recognizable, and it is the best known to the average user. It would be well to lay in a supply of reliable stuff early. The market in some of these articles is incalculable, and the quantity obtainable limited. It should be remembered for what it is worth, however, that there are very much cheaper poisons which are equally effective, and steps should be taken at the earliest possible date to familiarize both the dealer and the man who uses them with some of these, and thus save a large part of the money which goes out of the country year by year for poisons. In the case of Paris Green it is literally true that a considerable proportion of the price is paid for the colour.

The effective principle in Paris Green is, of course, arsenic. When arsenic is combined with lime one resulting compound is arsenate of lime. In appearance this is a very fine white powder, the price is about one third that of Paris Green, and its killing properties greater since it is in a finer condition, requires less stirring and adheres better to the foliage. This poison is suitable for use alone or compounded with Bordeaux Mixture on all vegetable crops, including potatoes. It is already the standard spraying poison in the western part of Nova Scotia.

SPRAYING TO KILL INSECTS AND DISEASES

At this season of the year particular attention should be paid to the prevention of ravages by disease and insect pests. It is possible by a timely aplication of the proper sprays to control effectively many of our worst diseases and pests.

Spray materials may be divided into three classes. First, there the the fungicides, such as Bordeaux mixture and lime sulphur wash, which are used to control or prevent the development of fungous diseases such as Apple Scab and Potato Blight. Secodnly, there the poison sprays, such as lead arsenate, for the control of biting insects such as Potato Beetle, Tent Caterpillars, etc., and, thirdly, the contact sprays, such as kerosene, emulsion or nicotine sulphate, for the control of sucking insects like plant lice.

By selectiny the proper sprays under each of these three headings, a combined spray containing all three can be used and, thus, in a single application, one has a fungicide and a complete insecticide combined. A good combined spray is made up as follows: 4-4-40 Bordeaux, consisting of 4 pounds unslaked lime, 4 pounds copper sulphate, and 40 gallons of water, to which is added 3 pounds of arsenate of lead or 2 pounds of arsenate of lime in paste form (if the dry form is used, use one-half this quantity) for controlling biting insects, and if aphids or plant lice are present, one-third of a pint of nicotine sulphate should be added or, as an alternative, the lime sulphur could replace the Bordeaux mixture.

Do not delay the application until the disease or pest has become evident by its ravages, but make the application in time to prevent the damage. An application of spray is not a cure, it is a preventative.

Do not think that one application is sufficient. Remember that at this season of the year foliage grows rapidly and a large amount of new leaf surface is soon exposed after an application is made, and it is this new uncoated surface which is a source of infection. Three to four sprays during the season will be necessary to keep the leaves covered and the plants free from disease and pests.

Make the applications thoroughly, drenching all parts of the plant with a fine, mist-like spray. A coarse spray is not as effective as a finely divided one.

BLACK HEART

Will you please tell me all you know about black heart in apple trees? Do you think that Baldwin trees with this diseases will recover?—C. B.

Black Heart is a form of winter killing, and is very common in the Baldwin variety, even in the mildest parts of Ontario. Under these circumstances one is almost forced to the conclusion that Baldwin is scarcely hardy enough for the Ontario climate. This injury is very often induced and rendered much more serious by the forcing of trees for strong growth. In reality, a Baldwin tree should on no account be forced, even if recourse has to be made to laying the orchard down in sod for a year or two occasionally. If the trunk and main branches are perfectly sound without wounds of any kind through which decay might have gained an entrance, I should favor leaving them, providing they are growing satisfactorily. Black Heart will not kill a tree outright. So long as decay can be kept out the damaged wood simply dries up without any harm being done, but if at any point this injured wood becomes exposed to the air, decay is certain to set in. This means, of course, that it is much safer not to prune a Baldwin tree in its early years. If pruning is necessary, the wound should be covered immediately and thoroughly. It seems to me your only course is to leave the trees which appear sound and healthy and replace the others as fast as they begin to show signs of failing health.

Young trees will do well if cultivated. The young tree can not compete with grass and weeds. If the trees are planted 2 feet apart in rows, 8 feet apart, or 4 feet apart in rows, 4 feet, apart, the trees will in a few years throw enough shade to smother out the weeds. For good results, the cultivation must be kept up till the trees keep out the weeds by their shade.

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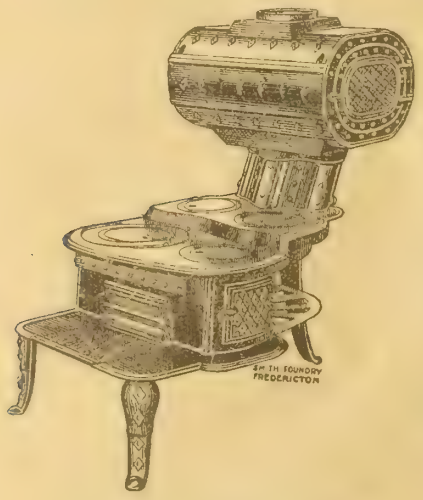

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DAIRYING

THE SEVEN DAY TEST OR THE "LONG GRIND"

When a real beginner goes out to buy pure-bred cattle, would it be advisable for him to depend on short time official records in deciding what to buy, or what not to buy, or should more confidence be placed on the showing the animal has made in the yearly Record of Performance Work?" This question was fired at representative of this paper not long ago by a dairy farmer, who is very much interested in the pure-bred stock business. Answering a question like the above one is not by any means the easiest thing in the world. A few score of men hold different opinions on this very subject, and all seem to have their own particular reasons to back up their views. The nearest the writer can come to arriving at an answer is to cite one or two of the ways in which he has heard the matter sized up by representative breeders.

A Believer in Short Test

"Well, if you really want my opinion, I am very strong for the short time, seven, fourteeen, or thirty day test," said one breeder whom we approached on the point. "I suppose, too, you will want to know my reasons. Well, here they are. To begin with, the test which is to be of most value, is the one which can be carried out under the most even set of conditions by all breeders alike, great and small, weathy or in ordinary circumstances. This to my mind is where the test of short duration has a marked advantage over the long grind. Every breeder who has learned the art of proper feeding has practically the same chance of getting his cow in the pink of condition for the test. Then when it comes to conducting the test itself, there are very few breeders except a few men of means to whom money is no object, who are in a position where they can milk four times a day, and handle all the rest of the extra work necessary in forcing cows at top speed for ten or twelve months. Then, on the other hand, there are also very few breeders cannot give test cows every last bit of attention that might be of any use, for a period of two weeks or perhaps a month. Hence, I claim that the short time test is carried by the rank and file of breeders under conditions more nearly alike than is the long test, and it is therefore a more reliable indication of what the animal can do."

The argument which this particular breeder put forward in favor of the short time test seems to be quite a reasonable one, and his point is well taken . The yearly test—if the best possible results are to be obtained—means milking four times a day for a large part of the lactation period, followed by a stretch of milking three times a day,—and undertaking almost too big on a farm where the available manpower is just barely sufficient to handle the routine work, as it comes along without having and additional chores added.

Quite a Different View

Another breeder interviewed, when asked his opinion as to the merits of the two different tests, expressed a view entirely differing from the one already ciited. 'Why, certainly, the Record of Performance yearly test is th eone and only way to size up a cow's capabilities," was his reply to one question. 'What a cow is capable of doing for one eweek, two weeks or a month for that matter, is not the sort of information I want about a cow before buying her. What I want to know is how big a year's work can I reasonably expect her to do at the pail. It is milk we are turning out here, and the Record of Performance record is the only real way of getting at the real capacity of the cow to produce milk throughout her whole lactation period. But here, too, is another point, the conditions under which a yearly record has been made should be published along with the record itself. It is all very well for the owner of the cow to advertise that the record was made under ordinary conditions. That statement means little to me, unless I am personally acquainted with the man and know pretty well the way he handles his cattle. The term "ordinary conditions" is too elastic to mean anything definite. If along with the record they would publish the fact that the cow was milked four times a day for so many months, three times a day for so many more, and so on, it would help greatly. To my notion, this would make the information which

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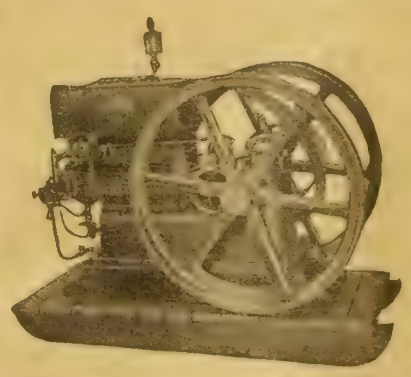

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the record gives a great deal more complete. However, this is just my opinion, and you can take eit for whatever it is worth; you have probably heard half a score of other views before now."

These two distincly different views on official and semi-official test work do not by any means begin to cover the ground, but they serve at least to show how some breeders are thinking on the matter and to indicate one or two of the strong points in favor of both kinds of test. One thing is certain, both the long test and the short has a good many followers, and probably will have unti lthe final trumpet sounds; therefore, the man who is out to make his cattle as valuable as possible through the medium of building up their reputation as producers of both milk and butter will put himself in line for the widest market, the best customers, as well as the most satisfactory business, by adding to his herd's history just as many of both long and short term records as working conditions will permit.

WHY CREAM TESTS VARY

The farmer who sells cream is sometimes surprised at the variation in the test reported by the creamery. In the early part of the summer the tests tend downward. The farmer should not assume that a variation in the tests means either carelessenss or dishonesty on the part of the cream buyeer. L. W. Morley of the University of Missouri College of Agriculture, mentions several factors which affect the richneses of cream and which make a variation in the test from time to time.

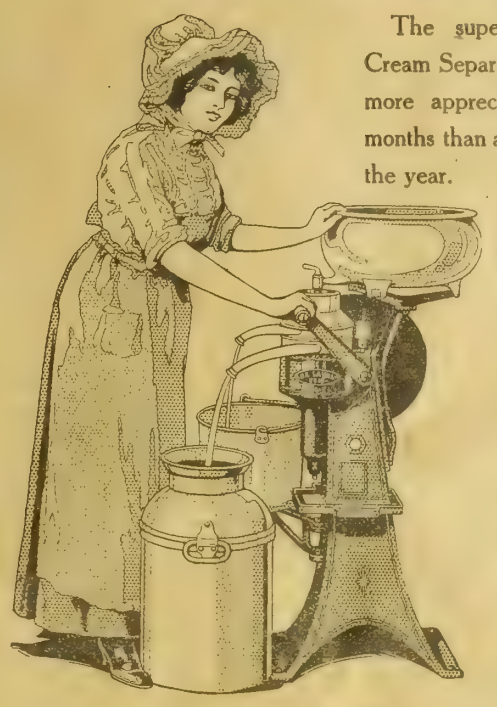
First of all the richness of the cream varies with the richness of the milk. In early spring and summer there are more fresh cows, which results in a lower testing milk and as a result of this the cream goes down in proportion. A herd of cows may produce milk averaging 4 per cent. in the fall and in the early spring and summer the average will run as low as 3.6 per cent. This much difference in the richness of the milk will cause a variation from 5 to 8 per cent. in the cream test.

The next most important cause for variation iis the speed of the separator. The faster the separator is run the larger the proportion of skim-milk and the smaller the proportion of cream. Consequently the high speed yield a richer cream. If a machine that is supposed to be turned 60 revolutions a minute is reduced to 40 the cream will be considerably lower in the test.

Another important cause of variation in cream tests, and sometimes the most important, is the amonnt of water or skim-milk used in flushing out the bowl. The difference of a pint used will make a noticeable difference in the test of the cream. A difference in the temperature of the milk separated wil lalso have some effect. Some separators are more sensitive to temperature than others. With some a difference of 20 degrees in the temperature of the milk when separated will make a difference of several per cent. in the test without affecting the thoroughness of the separation to any marked extent. It should be understood that these variations occur not as a result of more eor less loss of fat in the skim-milk but as a result of a larger proportion being taken out in the form of cream.

The milking machine is here to stay. It is a recognized implement at the present time and it has passed the experimental stage in many cases. Therefore, the person who doubts the advisability of such a machine might just as well doubt the advisability of a separator or a gasoline engine. It need an intelligent man to operate a milking machine, but for that matter it requires intelligence to operate any kind of a farm implement. The milking machine is a great labor-saving contrivance and it makes dairping possible on many farms. The milking machine can be criticized no more than any other farm implement.

Summer Advantages of the DE LAVAL



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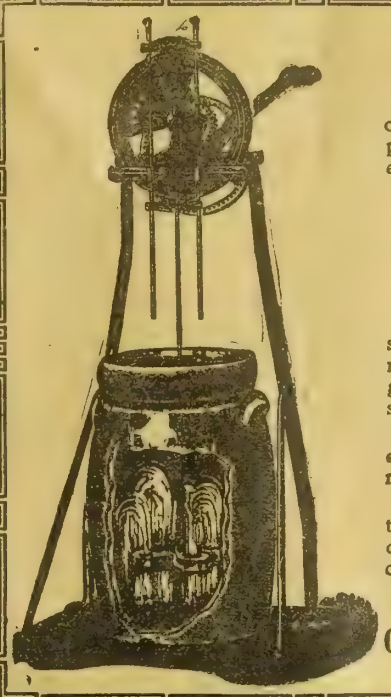

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LIVE STOCK.

FIXING TYPE IN FLOCK OF SHEEP AND THE EVIL EFFECTS OF CROSS-BREEDING

In going the round of the fairs there is a good opportunity granted the visitor who follows them to note the work that is being done in the different districts. Among farmers who are taking an interest in sheep breeding, and had forward entries in the various classes, there is an apparent lack of having a fixed type in the breed they have selected for their flock. One of the chief difficulties with all successful sheep breeders is to get a uniformity of type in the flock. There is every indication that the high prices of sheep and their products, is to tempt many to use all the breeding stock that is available at home without due regard to the fitness for that purpose. Flock owners as a rule are apparently too careless in selecting their breeding ewes in not giving more attention to grading out their inferior individuals or keeping up the work of retaining only animals that show a marked similarity. In the long run it means loss to the sheep breeding industry to allow the flock even for one season to deteriorate. Numbers against quality do not count in summing up the year's balance on the sheep adventure on the farm, and therefore does not fulfill economy in the call for increased production. It is waste of expensive feed to give it to a nondescript lot of lambs that will not command a ready market. A small flock or a few sheep on every farm, made up of the best types of whatever breed chosen is far more in line with greater production than breeding wholesale, without any attempt at selection.

No farmer has a right to expect that inferior sheep will produce good lambs. The chances are many to one that the lambs from such stock will be still less desirable than their parents, and that means that they will not be profitable. Sheep that are weak, or show a marked inferiority in any important respect, should be rejected for breeding.

Breeding with Immature Animals

Also the practice of mating last spring's lambs, even though good for their age, will probably be as disappointing as those which follow the mating of older animals which are of inferior quality. The lambs are not fitted to endure the strain of bearing young. If they are subjected to it there will probably be a heavy loss of lambs soon after their birth, and the ones which live longer will not be as large or vigorous as the lambs from older ewes. Then, too, the growth and development of the young mothers will be checked, and their usefulness will be seriously impaired.

The expense of obtaining a pure-bred good typical ram is also a great deterrent in affecting increase in quality of the flock. There is thus the danger that the desire to secure a large number of lambs and the reluctance to obtain high-class rams, will lead to mating of many mature sheep that are not up to the standard of quality that ought to be maintained, and to the use of many individuals which are promising, but are too young for profitable breeding. The choice of such breeding stock is short-sighted policy.

And just as objectionable as in the case of ewe lambs, the use for breeding purposes of a ram lamb of only average merit. There are farmers who sell all their best lambs for the sake of the extra income, and keep a poor specimen for breeding. Even breeding with a ram lamb is not advisable, but breeding with the weakest one that has failed to get a buyer, is ruinous. **Using sheep under one year old, whether ewes or rams, is likely to make them uncertain breeders when they are older.** Even where the individuals are promising, and their inheritance is good, the use of immature sheep for breeding will cause a certain, and if long continued, a steadily increasing decline in the appearance and value of the flock.

Ewes, like dairy cows, should be selected strictly on the basis of performance. Ewes that produce large, robust lambs and suckle them well are the kind of sheep that pay for their keep and return a handsome profit. But the average flock owner does not know the individual merits of his flock. In the sorting out, in the fall, ewes that are well run down are the ones that are picked for the fattening pens. These very ewes unquestionably are the most profitable individuals in the flock, but on account of their low flesh condition have deceived their owner. Few flock owners keep a note-book of performance of their sheep and are compelled to rely on general appearance in selecting their breeding flock for the coming season.

Indiscriminate Cross-Breeding Ruinous

Another practice that is leading some flock owners to chaos is the art of sheep breeding in the crossing of breeds. The practice as carried on by many is a waste of time and money. There is no logical reason why any flock owner should resort to cross breeding of any kind of live stock today. The whole effort of the builder up of a pure breed was the elimination of the undesirable results found in crossing and mixing breeds and types. The first cross of two distinct breeds generally produces very good results, but the continuous intermixing or breeding together of these crosses is on the downgrade tendency in seeking flock improvement. To produce the best crosses a farmer has to keep two pure breeds and is therefore under the necessity of buying all his breeding stock.

Where pure-bred stock is maintained it is a great deal easier to select uniform stock for breeding purposes than where blood from several distinct breeds are intermixed. The prudent selection of breeding ewes is made more difficult each year when promiscuous crossing is followed from year to year.

Fall and Winter Keep

After the ewes have been all bred keep them in a healthy condition on pasture until cold weather comes, then give a little alfalfa or clover hay. **Do not feed timothy.** When frost and snow drives them in from the fields give a little oats and bran, one pound per head, with about 5 lbs. of silage per day, and all the hay you can spare. **Keep all corn away from them; it is ruin to a breeder's flock.** Everything a sheep requires can be grown on the farm but the bran. If corn is grown, sell the sheep's portion and buy bran. Silage is a good feed, but hay or grain must be fed with it. **Keep all dogs away from the barns after ewes become pregnant, or it will give trouble with lambs coming wrong or ewes sinking them at immature periods.**

KEEP THE YOUNG PIGS GROWING

It is obvious that if pigs are to be matured and marketed under nine months of age, they must be kept growing and developing from start to finish. Our forefathers wasted time and feed, making their pork cost them nearly double what was necessary, by feeding their pigs when young a small amount of feed, growing them along slowly and letting them rough it for nearly a year before they were fattened for market. That kind of growth and increase in weight is made at great expense. A pig will make its increase in weight much cheaper while young than is possible to make it later in life. Pigs when only a few weeks old begin to nibble at the feed given their mothers; a feeding pen or creep should then be provided for their use, so that they may eat by themselves undisturbed by the sows. Feed twice a day, just what the pigs will eat up clean of slop and some grain, gradually increasing the ration as their digestive capacity increases. It should be the aim to keep the young animals growing steadily as it is not economical to allow them to progress slowly at any time for a more or less brief period and then try to hurry them along by more liberal feeding. It takes a large amount of feed to fill out the lines of a shoat that has been on short feed for a considerable period of time and get it back to a form of thrift.

A Balanced Ration

Care must be taken not to over feed, however. Overfeeding is just as bad as underfeeding, and both are expensive. Some feeders think that they are not doing justice to their pigs unless the animals have feed to eat and as much more to run over. This is not only a waste of feed, but it is ruinous to the pig's digestion. A pig in order to do its best and at the same time do this on the least amount of feed, or, in other words, to make its gains most economically, must never be fed more grain than it will clean up in a short time. Neither should a second meal follow until the first has had time to digest. A pig should always come to its meals with a good appetite, and if it does not do this it is either being overfed or is sick, and in either case the best thing that can be done is to cut down on the feed.

It was long since demonstrated quite conclusively by the experiment stations as well as by experienced feeders that by employing a variety of feeds—a balanced ration, in other words—and giving the growing shoats access to good pasture in season, more rapid growth is made and at less cost, than when grain is fed exclusively. With a balanced ration the animals are developed more uniformly, bone, muscle and vital organs all being constructed at the same time, and therefore greater weights can be attained than by using only fattening feeds. The balanced ration also affords an opportunity for utilizing numerous cheap feeds most profitably, thereby lessening the feed bill materially, but at the same time securing just as rapid gains in the animals. There have been many times during the last few years when fat hogs commanded a high price in the markets, but at the same time grain and other concentrated feeds also possessed a high market value, hence the margin between the cost of production of the hogs and their selling price was slight at the best, and if the high priced feeds were employed exclusively an actual less may have been sustained. But if at such times an effort is made to diminish the cost of production by using, as much as possible, cheap feeds which can eb grown on the farm, paying returns can generally be secured.

Some Bulky Feed

It is now generally conceded that the cheapest as well as the easiest way of growing pork animals is to feed grain while the pigs have the run of good pasture. Any gain made from pasture on forage crops is the cheapest gain possible to make, and at the same time the green feed keeps the hog's system in fine shape. Forage crops answer a triple purpose in pork production. First, while the hog is primarily adapted to concentrated feeds, at the same time is requires some roughage. Grain feeds do not build up well in the stomach and are not easily penetrated by the gastric fluids, and for this reason the appetite is better maintained and digestion is improved by the use of some bulky feeds at all times of the year. Secondly, most forage crops supply sufficient protein to balance a grain ration nicely; and finally, they furnish the pigs with exercise while securing the forage; and exercise is essential for active and healthy vital organs in the growing animals. Even during the finishing process it is considered advisable to allow the shoats as much exercise as they care to take. The more concentrated their feed the greater the necessity of some exercise every day.

There are all kinds of pasture suitable for hogs—clover, alfalfa, rape, winter rye, oats and peas, etc. They may be sown at various times during the growing season, so that some of

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them will be available at all times from early spring until late fall. Clover and alfalfa make very desirable summer pasturage, and they are more beneficial to the land than any of the other crops. All of the clovers are rich in protein and balance a grain ration nicely. It has been variously determined that when hogs have the run of good pasture they require or should have from one-half to two-thirds as much grain as when grain alone is fed. Rape is almost as good as clover in a way; what it lacks in quality as compared to clover it makes up for in quantity of forage produced. Rape may be sown at intervals of a few weeks throughout the summer so that a new crop will be coming on constantly. Under favorable conditions rape is ready for pasturing in six weeks from date of seeding.

PURCHASING STORE CATTLE

Among cattlemen who cater to the beef market it has always been a point of keen discussion whether it is more profitable for a farmer to rear his own stock or buy stores.

Some claim that they never find it profitable to grow steers, but prefer to let someone else look after the growing period. Other feeders believe that a reasonable number of young growing beef animals aer a source of profit to their owners during the period of their lives. But success in this depends largely upon the man, the kind of cattle bred, and his skill in raising calves.

The great disadvantage in buying rather than rearing lies in the fact that the farmer has great difficulty in getting the exact class of cattle he requires, and even when he finds a few the lot generally contains one or two bad doers, that run away with a large amount of the profit. As buying store cattle entails less trouble to the farmer than rearing them, the supply is generally not equal to the demand, and the price has to be paid for them is therefore almost invariably too high. Another great disadvantage is that the farmer does not know how the animals have been treated before he gets them, and, consequently, for a month of six weeks they make little or no progress. The system of buying stores also requires much greater capital expenditure than the rearing of calves.

On the other hand, the farmer who rears his own animals has always the class that he wants for the market, cattle that command the highest price. He also saves the middleman's profit for stores by no means an inconsiderable item. On a farm where rearing and feeding are combined much better use can be made of the farm grown feeds, some part of which will be more suitable for young stock than for old, and vice versa. The farmer who rears and feeds his own stock is more largely independent of any fluctuations in the price of beef or store cattle than the buyer of stores.

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20

Shorthorns

Cost of Rearing

Regarding the cost of rearing store cattle, the cost of keeping the cow is not nearly such a serious matter as it is with the dairy cow. A cow need not get any extra feeding, unless for a short period after calving, and if she calve about March or April this period need not be an extended one. Where calves of the right class can be bought, one cow of average milking quality can easily rear two, and do better to them by suckling, than can be done by hand when the labor bill is considered.

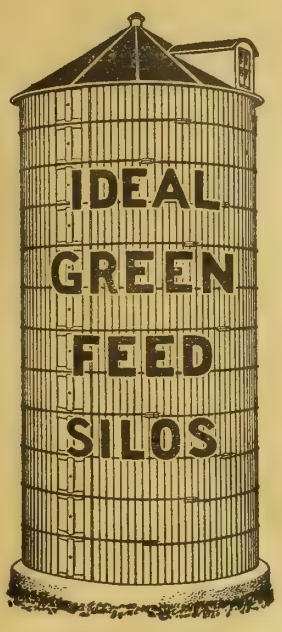
Some men are doing well using only what might be considered as cheap cross cows, counting largely on the influence of the bull to produce good feeders of quality and fattening ability. But for best results the best beef bulls should be mated with cows of a good beef type not necessarily pure bred. And also though the beef cow can be kept much cheaper than the dairy cow, reducing her winter feed to a straw ration while exposing her in the otuside during cold spells, is not at any time or under any market conditions conducive to a favorable bank balance.

The work of the feeder is devoted to the adding, by his feeding process, such amounts of fat over the body of the animal and through the muscular tissues as will give tenderness, flavor, and juiciness to the various beef cuts. It is the business of the feeder to so change the nature of the carcass, that the animal from being worth 8c or 10c per lb. live weight will after 4 to 6 months in the feed lot be worth 12c to 14c per lb. Thus; a 900 lb. feeder steer at 10c costs $90; a finished steer of 1,2000 lbs. at 13c, sells at $156. This gain or difference is got from the increase in weight and the spread in price.

A difference of opinion exists among buyers of feeders whether they should purchase smaller steers at a lower price per lb., that will take longer to finish, or larger and fatter steers at a higher price that can be finished in short time. Circumstances largely shape the course to be pursued. A man having plenty of rough feed, as straw, ensilage, roots, etc., but a minimum of grain might choose long keep steers, feed them cheaply through the winter and finish them on grass. Others prefer short keep steers. They finish quickly, can be sold in a short time, which gives a quick turn over of the investor's money. He can buy another lot of quick feeders, which in their turn can be sent quickly to the butcher. The feeding of short keep steers requires more grain and greater care than in the case of the thinner steers. The spread is not so great, either, but on the other hand the quick sales and rapid turn over compensates for this.

The basis of profitable steer feeding is animals of undoubted beef quality and growthiness. Added to this proper care and regular feeding of ordinary feeds as found on the farm should give fair profits. Trying to make profits out of expensive feds by feeding them to a bunch of steers that are crosses of the dairy breeds is on a par with the dairy farmer who feeds these expensive feeds to cows that average 4,000 to 5,000 pounds of milk. But there are lots of farmers in this business, and it is no wonder they demand better prices for their products.—O. V. J.

Simplicity



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MINNESOTA HOLSTEINS BREAK CONSIGNMENT SALE RECORDS

All previous figures for consignment sale averages were far surpassed in the First Annual Sale of Minnesota Holsteins, under the auspices of the Minnesota Holstein-Friesian Association. This initial event, which was held June 12 on the Schroeder Farm at Moorhead, resulted in a total of $217,795 for 76 head, which gives the sensational average of $2,865 per head. The highest previous average for a consignment sale was the National sale at Milwaukee in June, 1918, which showed an average of $2,430. The Cabana sale in May, 1919, now stands as the only sale of dairy animals boasting a higher average than this Minnesota event, but that sale with its average of $3,337, was a dispersal and not a consignment sale.

The fundamental factors in the success of the Minnesota Breeders' sale were that the breeders and sale committee alike went about the project with the determination to make it thoroughly representative of Minnesota quality and to tell the publir about it, truthfully, conservatively and in a manner to reflect the real merit of the offerings. The results of the sale came about simply because everybody back of the sale made good on their determination. The breeders selected of their very best, the sale committee was conscientious in its duty and rejected every animal offered that failed to measure up to the standard they had established, and finally an advertising campaign was put through more extensive and complete than was ever worked out for any previous state sale. These facts, in connection with the enviable reputation of Minnesota Holsteins in the matter of health, individuality, size and long-distance production were a practical guarantee of outstanding success.

The real sensation of the sale, as many expected, proved to be the proven sire, Sir Pietertje Ormsby Mercedes 41st, son of Sir Pietertje Ormsby Mercedes and the grand old matron Spring Brook Bess Burke, who has been called the greatest mother of the breed. Representing as he does a nick in breeding that has no superior in proven production of both milk and butter in long and short periods, combined with size and individuality, and with a splendid list of young daughters of his own, breeders from many sections of the country were present or represented, and determined to buy him at prices above anything previously paid in the Northwest. The bidding started off briskly, J. E. McMahon of the Ramsey County Home and E. C. Schroeder quickly carrying him to the $20,000 mark. At that point Good Hold Farms of Mentor, Ohio, entered a couple of bids but their limit was reached at $25,000. Gustav Pabst of Dousman, Wis., started at $26,000 and for a while it looked as though this might be enough to buy him. Soon however McMahon came back with a syndicate of other breeders and the bidding started again. At $35,000 Mr. Schroeder announced that he would take a half interest in the bull with whoever purchased him at whatever price he might bring. An exciting contest ensued between Mr. McMahon and Mr. Pabst. When Mr. McMahon's bid of $60,000 was raised to $65,000 by Pabst, the former threw up his hands, and Col. Mack struck off to Pabst and Schroeder the bull that is believed by those in the best position to know to be the most logical candidate to carry on the good work of Sir Pietertje Ormsby Mercedes. Mr. Gustav Pabst who is a brother to Fred Pabst, is developing a very high class herd at his Hollyhock and Tamarack Farms in Wauqesha County. It is thus assured that Sir Pietertje Ormsby Mercedes 41st will have a real opportunity for development. His two-year-old daughters already have made records up to over 27 lbs.

EXHIBITION DATES

St. Stephen	Sept. 9th to 12th
Woodstock	Sept. 9th to 12th
Fredericton	Sept. 13th to 20th
Chatham	Sept. 22nd to 27th
Charlottetown	Sept. 23rd to 27th
Port Elgin	October 1st and 2nd
Maritime Winter Fair, Amerst, N. S.	Dec. 15th to 18th

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THE HORSE

DISEASES IN TEETH OF HORSE OWING TO NATURAL CAUSES OR DUE TO CARELESS ATTION

Most of the diseases of the organs of digestion in horses are blamed on the errors in feeding, but there are equaly as many of them due to teeth diseases, and the general lack of attention paid to them. The long tract of the intestines in the horse, and the fact that he has but one stomach with which to do the work, for which four are assigned to the cow and sheep, renders him sensitive to morbid disturbances of these organs. There is a closer sympathy in the horse between the stomach and his masticating organs; digestion properly begins with the teeth, and if they are out of order the whole digestive tract suffers.

Localized Inflammations

There are quite a number of localized inflammations which occur in and around the mouth, and it is of great importance to know the different causes that give rise to them. A number of these iritations are caused by the edges of the grinders or molar teeth wearing off the enamel, or the irregular growth of the teeth, become rough, and wound the inside of the cheek. In this latter case it is necessary to adopt a summary but effectual method of cure, namely, to rasp them smooth. Many bad ulcers are produced in the mouth by the neglect of this.

The teeth sometimes grow irregularly in length, and this particularly the case with grinders, from not being in exact opposition to each other, when the mouth is shut. The growth of the teeth still going on, and there being no mechanical opposition to it, one of the back teeth or a portion of it, shoots up half an inch or more above the others. Sometimes it penetrates to the bars above, and causes soreness and ulceration; at other times, it interferes partially, or altogether with the grinding motion of the jaws, and the animal pines away without the cause being suspected. The horse that has once been subjected to this operation should afterwards be frequently examined, and especially if he loses condition. Every horse that gets thin or out of condition, without fever, or any other apparent cause, should have his teeth and mouth carefully examined.

Lampas

Some of the lower bars occasionally swell and rise to the level with, and even beyond the edge of the teeth. They are very painful, and arise from inflammation of the gums, propogated to the bars, when the horse is shedding his teeth. Older horses also have at times ,but young horses are more liable to lampas than others. The horse suffering from it, should get some mashes and gentle alteratives to relieve him. A few slight cuts across the bars with a lancet or pen-knife, taking care to avoid the principal artery and vein of the palate, will relieve inflammation and cause the swelling to subside. To apply the old custom of searing and burning with a red hot iron is simply torturing to the horse and is of no remedial value. It may be prudent in the case of lampas to examine the grinders, and more particularly the tusks, to see whether either of them is endeavoring to make its way through the gum. If two incisions are made across each other on the top of the tusk, the horse will experience immediate relief.

Canker and Mouth Wounds in the Mouth

The mouth is injured much oftener than the careless owner suspects, by the pressure of a sharp or ill-fitting bit. Not only are the bars wounded and deeply ulcerated, but the lower jaw between the tusk and the grinders is sometimes torn to the bone. Partially developed tusks in a mare are very apt to be irritated by a rusty or badly placed bit, and ulcerated sores are the result. It may be necessary to have a sharp bit for the headstrong and obstinate beast, yet too many willing and docile servants are subjected to torment which is quite unnecessary. A perfectly good mouth fit in every way to masticate the food properly, can be imparied by the careless usage of the bit, so that the animal's health will be undermined, no matter how well balanced a feed for him is put up or how regularly it is given. For the inflammation of the mouth, small doses of aloes (three to four drachms) given at intervals of a few days, will have a cooling effect on the blood, and for the ulcers themselves, tincture of myrrh, diluted with an equal quantity of water, or an ounce of alum dissolved in 15 times the weight in water, may be applied with advantage. The writer used this mouth wash for horses as a preventative against bit sores or tenderness of mouth due to teething, and found it very effective. It is largely used in Britain among hunters to keep the mouth in perfect trim, so necessary to reining while engaged cross-country riding, and for the draft horse on the farm it will add to his comfort and health if his mouth is kept free from canker and wounds.

Decayed Teeth

When a tooth is decaying it is known by the following symptoms: Pain in eating, as shown by ejecting from the mouth masses of half-chewed food; flow of saliva and "slobbering" while eating; swelling of the gum, redness and pain around the diseased tooth; presence of a black spot upon it; sharp pain when the tooth is smartly raped; a fetid and sometimes excessively foul breath. Animal den-

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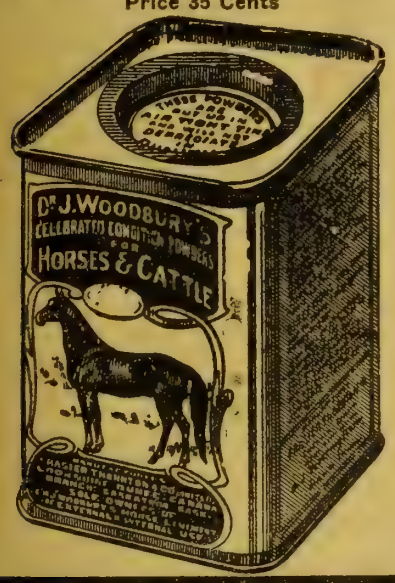

tistry has not yet done so far as to fill and preserve decayed teeth. It is generally the grinder teeth that are subject to decay, and the only thing to be done is extraction. The chief objection to this is that the corresponding tooth of the opposite jaw increase in length and becomes an object of serious annoyance. It must be periodicaly examined ever after, and when it encroaches beyond its neighbors it must be rasped back to their level.

When a four-year-old horse is cutting his sixth molar tooth he is sometimes subjected to a distressing cough. He will take fits of continued coughing for 20 or 30 times without cease, and the cough sound is loud sonorous and prolonged. The cause of the cough is an irritation, that extendts to the throat and is aggravated by the replacement of the third temporary molar by its permanent substitute, which also takes place when the horse has reached his fourth year. The mouth should be washed with the the cooling mixture already described. A moderate laxative should be given, as the bowels will get diordered from the half masticated food. A daily dose of bicarbonate of soda, about one ounce, in water, should be offered the suffering animal.

Chronic indigestion in almost every case is due to irritation of teething and in every case where indigestion occurs the mouth and teeth should be examined.

HORSES REQUIRE SPECIAL CARE

How to get the most work out of his horses without overdoing them or badly breaking them down in their condition of thrift and usefulness, is a problem that the farmer faces every spring and summer season. Upon how well he solves this problem depends a great deal of the success of spring and summer farming operations. In warm weather thorough grooming is almost as important as feeding. Without it, dried sweat, dead skin and dirt clog the pores, make the hore uncomfortable and affect his health.

Look out for sore shoulders and backs, especially in plowing. Be sure that the collars fit. A collar too big is as bad as one too small. If the collar rides up, use a martingale or a girth running from trace to trace, back of the foreelegs.

When the horses are at work on a warm day, lift up the collars now and then to cool their shoulders, and wipe off the sweat and dirt with a bunch of grass.

Wipe off the harness marks on your horses when you stop work at noon and at night, and clean the inside of the harness, the collars especially. The salt sweat, drying on the skin and on the harness, is what makes the trouble.

If the skin is wrinkled under the collar or saddle, bathe it with diluted vinegar or witchhazel. If the skin is broken, bathe it with clean, warm water containing a little salt. Fix the collar, with padding or otherwise, so that it will not touch the sore spot the next day. A little carelessness at the beginning may cause a lot of trouble to you and suffering to the horse.

Clean your horse's at night, water them, give them a good bed and water them again after they have eaten their hay so that they wil not be thirsty all night. Let them rest an hour or more before they are grained. The observance of these simple rules will not cost you a cent, will make a big difference in their condition, and will add much to their comfort and endurance.

THE HORSE MANURE PILE FIREFANGING

When horse manure is left in a loose and open pile the air works in, dries out the manure and starts a strong fermentation. This results in what is known as "firefanging." In this condition the manure heats to a very high temperature, becomes very dry and takes on a light color. During this process a quantity of the nitrogen is lost, being burned away by the high heat. When the manure, however, is stamped down hard and well soaked with water, this firefanging does not occur, as the air cannot work in freely. Under these conditions of moisture and a compact pile the manure decays instead of burning, and thus become more available as a plant food. The best way to hold such manure is to stamp it down hard and firmly and see that it is kept moist by using much water on it. If the liquid from the stable can be poured over the pile this would make an ideal practice, but keep the pile firmly compact so as to keep out an excess of air. Manurs handled in this way will carry through the winter nicely. In order to make it more effective there may be added 40 pounds or acid phosphate to each ton of manure. This should be scattered all through the pile and add needed phosphorus to the manure, and also make a chemical combination to hold the ammonia. Handled in this way you will have a very good product.

WIDE WAGON WHEELS

That wide wagon tries are not an advantage on a wet clay road, at least, is urged by a writer in the Prairie Farmer: "I have always kept both wide and narrow-tired wagons," he writes, "and have had road experience enough to satisfy me that the wide-tired wagon is at its best when the roads are dry and hard, or where there is much sand. When the roads are soft like we have in the spring of the year, I find they are fully 50 per cent. more destructive to the roads than the narrow tires, and under these conditions they pull a third heavier.

"The reason for these two deficiencies is that the mud squeezes in over the felloe and the mud is lifted all the time on the four wheels, making additional draft and leaving a gaping rut, while with narrow tires the track will nearly fill behind the wheel. Now suppose it freezes that night after the ruts are made, and we take the wide tire next day along with the narrow tired wagon. The wide tire strikes more high bumps, pulls harder, making more wear and tear on the wagon, the team and the driver.

"Supose it snows a few inches that night and we try the wide and narrow tire. If there is much crown in the road your wagon goes just where it pleases, while the narrow tire will line up with the team. Of course, I mean for the wagons to be loaded. The heavier you load the wide-tired wagon the more it will slip, while it is just the reverse with the narrow tire. No broad tires on the road for me, except when the roads are dry. I'll use the narrow tires and pay fines for violation of road law rather than be compelled to use the wide tread."

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POULTRY.

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[illegible]am, in addressing [illegible] council recently [illegible]sembled poultry

Your business is a national necessity. Why? Eggs are one of the very few human foods that contain the essentials of growth; the material in foods that gives and maintains our normal power of resistance against disease. Canada is a young nation. It is our undivided duty, as well as the duty of our government, to see to it that these protective foods of nature are produced in abundance; that they are produced economically; and gathered, stored, and distributed with the least possible waste and in the best possible manner to the consumer, whether he be rich or poor. Every human being in Canada required eggs. They are a national asset. It is your duty as individual poultrymen to produce them; our duty, with the co-operation of the trade of our government, to see to it that they are not spoiled in transit or unduly increased in price to the consumer.

"The history of poultry farms would suggest that the poultry business is one of doubtful value as an investment. There can be no doubt but that many poultry farms have failed but the proportion of successful farms is on the increase and today most failures are due to lack of knowledge of the essentials. It has been a pleasure to me and to those associated with me to study, daily, weekly, monthly and yearly, the question of producing a large number of eggs at low cost. There has never been much trouble to get hens to lay from March to September but from September to March has been a difficult period of production. There have been many obstacles in the way but practically all of these can now be fairly well controlled. As illstration of this, the following figures are given for the production of 540 pullets during the months of November, December and January. These birds weer hatched in March, April and May, and may, therefore, be considered a fairly representative type. The flock consists of 340 Barred Rocks and 200 White Leghorns. These birds laid 8,441 eggs in November, 8,378 eggs in December and 6,396 eggs in January, or a total of 23,215 eggs, or nearly 43 eggs per bird during what is generally considered to be the worst producing months of the year. These eggs would represent at least at cash value, over $2.00 per hen. There are commercial poultry farms doing as well or better. There is no place in this country for the slacker. There is now no excuse for one having a flock of non-productive hens if the owner does his or her part. A good hen will give a favorable account of herself if you will give her the materials and the surroundings to make her comfortable and happy.

"It has long been known that pullets were the best egg producers, and most successful poultrymen have known that there was a time in the year to hatch these birds in order to have them lay during the common periods of short production. The great bulk of the chickens in this country are hatched during May, but most May pullets do not lay as many eggs during the year as their sisters hatched in March or early April. The difficulty has always been that should we meet with an accident with our early chicks, our main source of revenue for the winter months is gone. Fortunately we now know that flocks of selected yearling high layers may equal, and in some cases exceed, the annual number of eggs laid by an unculled flock of pullets. The old hen has been considered as doing fairly well if she paid her way from November to March, but I think we are safe in saying that a way at small expense, is now known to have her do better.

"Given a person who is not lazy and is fond of poultry there is every reason for a bright prospect for the future. Whether you keep a dozen hens in your back-yard or one hundred on a farm, or a thousand hens on a one-man poultry farm, the business is sound economically if one uses the information available. We might look upon the business in this way, that now we do not have to put all our eggs in one basket, there is more than one way of getting results.

"The situation at present may be looked upon in the following manner:

"The good laying hens can be told from the poor layers; there is a vast dicerence in the rate of growth and time of maturity of different strains of chickens; there is a best time to hatch; theer are many good feeds; eggs can be produced in fairly large numbers in any week or month of the year; the amount and kind of feeds commonly consumed by hens are known; the various grades of eggs are standardized; the co-operative gathering and selling of eggs has been a success; the knowledge of how to conserve our supplies during the periods of high production, so far as to give the consumer an egg that will poach six months hence, is available.

"My feeling is that we have now got our foundations laid. We can see over the top but the building is not complete by any means. A start has been made. We have no fears of the future so long as the poultryman is given a chance.

SUMMERTIME CARE OF CHICKS

Growing chicks should be provided with a house that will give them a place to stay in bad weather and at night. No particular style of house is recommended, but it should be so built that it will provide the chicks with ample ventilation, dryness, sunlight, freedom from drafts, and be so arranged that it can be cleaned easily and frequently.

In placing the chicks in their growing house for the first time, it is best to confine them for several days by erecting a temporary yard wherein they can run five or six days, until they learn where to return when the fence is removed and they are allowed their liberty. Care should be taken not to crowd the chicks by placing too many in any one house. When the chickens cover the greater part of the floor at night it is an indication that they are too crowded. At such a time they should be thinned out and placed in another house.

Feed for growing chicks may be divided into three classes, grain feed, dry mash and green feed. In addition to the grain feed the chicks are likely to find when on free range, a grain mixture should be given them morning and evening. The following rations should produce good results: Equal parts cracked corn and wheat. As the chicks increase in size, oats may be added. To cheapen this ration, it may be changed to two parts cracked corn and one part wheat. When one part of oats is added to this mixture, as the chicks increase in size, the ration may be changed to three parts cracked corn, one part wheat, and one part oats.

In addition to the above feed, a dry mash should be fed in a hopper to which the chicks have access at all times. Charcoal, grit, and oyster shells should be provided so that the chicks can help themselves whenever they want to. If a continued supply of sour milk can be obtained it may be fed separately in a pan provided for the purpose. Sour and sweet milk should not be fed alternately as such practice is likely to cause bowel trouble. Whenever it is possible, growing chicks should be allowed free range so they may obtain as much natural green feed as they need in addi-

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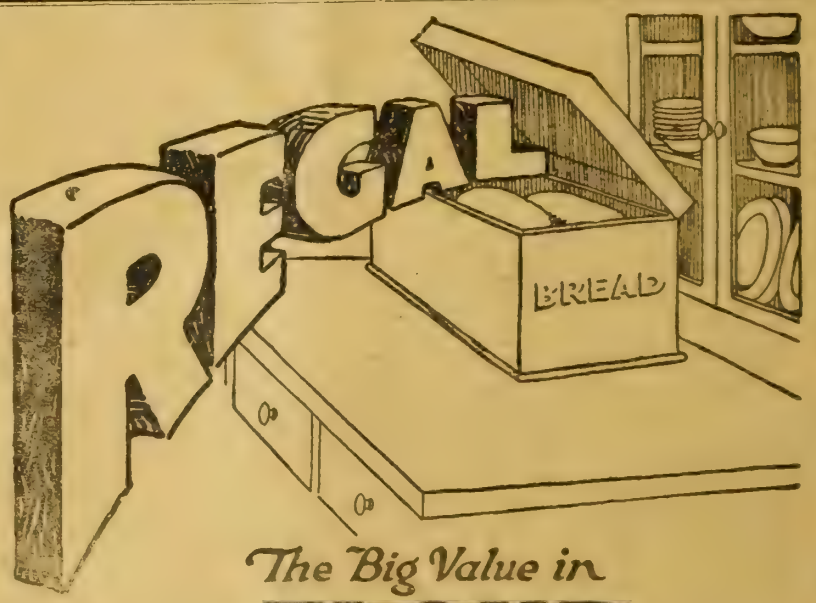

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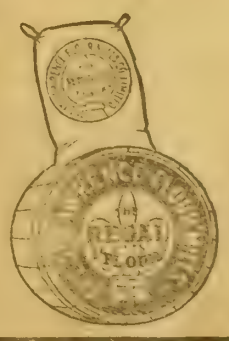

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tion to bugs and worms. When green feed can not be obtained on range such feed as sprouted oats, cut clover, mangel-wurzes, etc., should be fed daily.

The importance of clean, fresh water for chicks can not be over-emphasized. In very hot weather fresh water should be given to them twice a day. Whenever possible the pan of water should be placed in the shade to keep cool. The water pan should be cleaned every day before fresh water is added.

Plenty of shade should be provided for growing chicks. When allowed to range in an orchard or cornfield they will not only find ample shade and green feed, but will benefit the trees or corn as well as themselves by destroying bugs and worms. Sometimes sunflowers are grown for shade. Artificial protection against the sun's rays may be obtained by supporting frames covered with burlap a few feet above the ground.

Every effort should be made to keep the coops and houses clean and sanitary. Disease most frequently starts in unclean, poorly ventilated houses. The house should be cleaned at least once a week. Sand or litter of some kind should be scattered over the floor of the house, so as to assist in keeping it clean. When chicks are confined to a limited range, the ground should be spaded up at frequent intervals, so as to rpovide fresh ground for them to scratch in. Chicks should be examined frequently to see if they are infested with lice. When lice are found, every effort should be made to get rid of them, by applying a small portion of a mixture of equal parts of vaseline and lard to the top of the head and around the vent.

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SCALY LEG A COMMON DISEASE

Scaly leg is one of the most common of all poultry diseases, and one which is not difficult to handle, if well understood. It is caused by a minute parasite that burrows under the scale of the leg, usually beginning at or near the feet.

The progress of this disease is very slow, usually taking several months from the time it is first noticeable until the disease has reached advanced stages, so as to be easily discernible by the rough appearance of the fowl's legs.

The two legs are usually affected at the same time, and to about the same degree. The continued irritation by the mite causes teh formation of a spongy, powdery substance beneath the scales, which raises them more and more ntil they are nearly perpendicular to the surface and are easily detached. In the most severe cases the joints may become inflamed, the birds go lame, the intense pain causes loss of flesh, and, in some instances, the death of the fowl.

We have often met people who regard scaly legs as an indication of age in a fowl, and the reason their flocks survive is because those with rough legs are sorted out and sold on the market. But such is not the case, for a pullet five or six months old may have an extremely rough leg, while a hen five years of age may have as smooth a shank as any pullet.

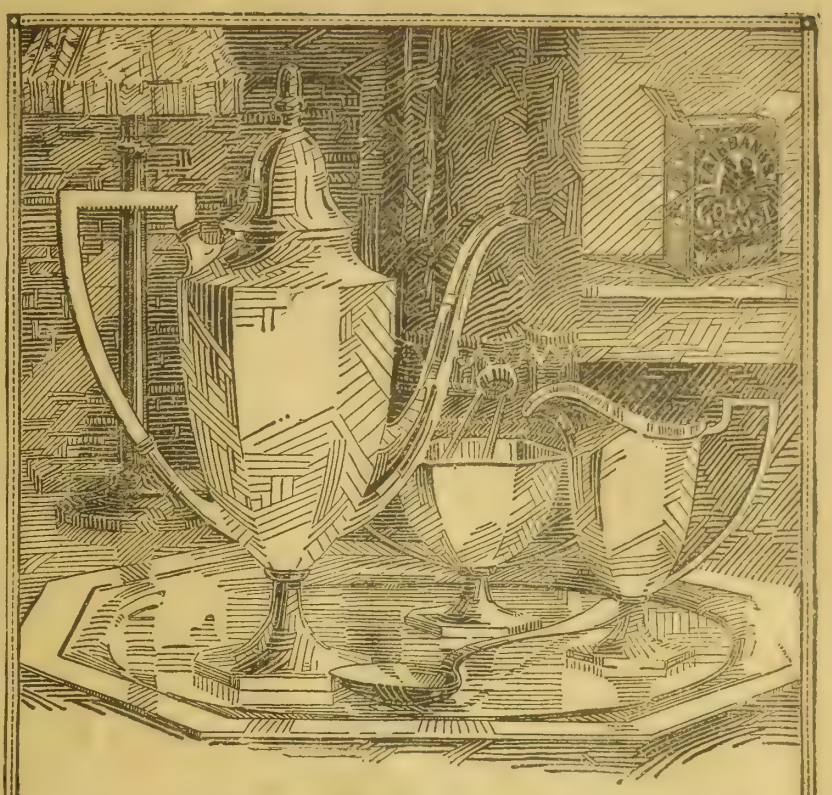
Treatment

This is one of the diseases that should be treated before any symptoms whatever appear, and this treatment is so simple and easily applied that there should be no loss or inconvenience from this inexcusable disease. Any kind of oil or grease, applied to the shanks before the disease is far advanced, will do the work, but for convenience of application a mixture of one-half each of sweet oil and kerosene, applied to the shanks by the use of a small machine oil can, is all that is necessary. This treatment will overcome the worst cases, if applied frequently enough; but in a flock where the disease is not prevalent, the application of this oil two or three times during the season will be sufficient.

The most convenient wa we have found for treating the fowls is to take the can and lantern at night when they are on the roosts, following from one end of the roost to the other, and squirt a small amount of the oil upon each shank. This will not only prevent scaly legs, but will keep the shanks in a bright, clean condition, and will greatly improve their appearance.

In cases where scaly leg has advanced to such a stage as to enlarge the shank to twice its natural size we would advise disposing of the fowl, except in cases where they are well bred and valuable birds; and in such cases we would advise applying an ointment composed of vaseline and flour of sulphur, wrapping the shanks with cloth and fastening it securely, allowing them to remain in this condition for several days. When the scales appear to be ready to come off, do not loosen too many of them at once, as they cause the fowl great pain, but when continually kept softened they will soon disappear.

Hens having scaly legs when brooding chicks will cause the chicks to be infected with this trouble. This is one of the diseases where "a stitch in time saves nine."



Makes Easy Work of Silver-cleaning

Yes, for silverware, too! You need only follow the directions on the Gold Dust package.

Gold Dust does away with gloves, powders and various polishing cloths. It saves muss, energy, time and patience.

Just a minute or two is long enough for ordinary cleaning. If the silver is badly stained or tarnished allow about five minutes. The tarnish is then softened and can be removed easily by gentle rubbing.

Rinse the silver in cold water after its Gold Dust bath.

LET THE GOLD DUST TWINS DO YOUR WORK

GOLD DUST

The Busy Cleaner

THE N.K. FAIRBANK COMPANY
LIMITED. MONTREAL

MADE IN CANADA

HOW TO MAKE SELECTION FOR EGG PRODUCTION

The rules that govern selection are as simple as A, B, C to any observing person. For instance, a hen that is slow to feather is lacking in vitality. Anyone ought ti know that. You can't stuff her and make her lay eggs. She is by nature a weakling. Hens do not lay eggs because they want to; they lay because they are strong and vigorous and egg laying is a natural result which they cannot avoid. That tendency must be bred in them.

Why, if the average farmer would give half the attention to his poultry that he does to his other live stock he'd find the poultry the oest investment in many cases. Success comes from being willing to discard.

Before mating your birds for another season, take one more look at them, and keep the following rules in mind when making your selection:

1. Market those which have been slow to feather or seem to lack vitality.
2. Keep the pullets which matured quickly and started laying first. Those which start laying when less than 200 days old will be the best layers if they have the right care.
3. Keep the late moulters.
4. Keep the birds with rather large, plump combs and wattles.
5. Hens with pale vents, pale beaks and pale legs have been good layers.
6. The skin of the best layers should be rather loose and flabby on the abdomen between the vent and breast bone.
7. The pelvic bones must be thin, straight, flexible and wide apart.
8. Market the hens which are baggy behind and which have a heavy, fat, thick abdomen which hangs down below the point of the breast bone.
9. Keep the hustlers and heavy eaters that go to bed late and with full crops.
10. Birds that have long toe nails that show no signs of being workers are usually unprofitable.
11. If a bird meets the above requirements, it should have a broad back, long body, be stoutly built and in good flesh.
12. If a bird is not moulting and still has a small dried up comb covered with a sort of whitish substance, or if a bird has thick or crooked pelvic bones, which will be found on each side of the vent and above the point of the breast bone, these are always money losers.

No man or woman can afford to keep and feed a flock of drones at the present prices of feed but the good layers will make more profit than in any previous year.

No poultry house will be found comfortable for the birds unless it is kept clean and free from parasites of every kind.

The two important things to be considered in planning the farm poultry house are the comfort of the hen and the comfort of the caretaker.

The question of profit in keeping hens has never been satisfactorily settled.

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

Creeping into the lives of men everywhere is the thought that co-operation is better than competition—we need one another. And by giving much we will receive much.—Elbert Hubbard.

"MOTHER'S WAY"

Betty was so lonely she wanted to crawl away out of sight and have a "good cry." Bob was a darling and all his people had been lovely. She had everything to make a charming home for a young bride, but she was lonley. She looked out on the back porches of the apartments abutting her own. There was Mrs. DeHaven, a pretty little woman, who never came in her kitchen except to give orders to the maid, and there was Mrs. Hastings, and Mrs. Greene, all young, all brides, and yet not one of them had called on Betty.

"If it were not for Bob, I'd go straight back home to the country, where people are human and care whether you live or die. If I'd been a young bride in the country everybody would have called by now. Bob's people are away out on south side, and it's a Sabbath day's journey just to go and come, and all day long, day in and day out, I haven't a single soul to say a word to but delivery boys, from 7.30 when Bob leaves, until 6, when he returns." Betty was small and forlorn looking as she dabbed a handkerchief to her wide, blue eyes. "I wish," she went on, "that mother could manage to get up for a while. But dad needs her—and——. But so do I. It's been six whole months since I gazed on my mother's face—and I do——"

"Why," Betty raised her head and listened intently, "whatever can that mean?" She rose and hurried to the kitchen door. "That sounds like mother, and coming in the back way!" Betty ran out the back door and down the single flight of steps and grabbed in her arms a small figure with twinkling blue eyes, silvered hair, and bonnet awry.

"Mother!" she squealed, and stopped on the landing for another hug. "Where in the world did you drop from? And why did you come in the back way, and why didn't you send us word, so we could meet you?"

"Land sakes, child, but it's good to see you. I just told pa I couldn't wait another minute, and I started right off, 'tween two days, as the sayin' is, and I got your gardener to bring up my bags the back way and I came right along with him——"

"Janitor, dear—" And, oh, I could eat you. I'm so glad to see you!"

"Janitor is it? Well, wait a minute. I want to let a lady who's been kind in bringing me up in her automobile know that I got here all right. There, she lives right over there." Betty's mother walked to the porch rail, waved a hand airily, and called chummily, "I arrived all right. Run in some time. I'd like to have a chat with you." Then to Betty, "that a fine little body over there; made me think of home folks, so kind and sort of commonlike——"

"Mother," Betty managed to get a word in at last. "Where did you meet Mrs. DeHaven, and how in the world did you get acquainted?"

'She was at the train waiting for friends who failed to arrive, and I thought she looked like a companionable body, and I smiled at her, and she smiled at me, and then I told her I had a girl living here and asked her to show me the way to get here, and she insisted that get right in her car that was waiting out front and I came right along with her. Then when we got here, I asked the janitor, you call him, to fetch up my bags, and I followed him right along."

"Mother, that's the wealthy, stuck-up Mrs.. DeHaven, and she's never even spoken to your daughter since she lived here." Betty took her mother's hat and smoothed her hair and hustled about as happy as a lark.

Her mother nodded. "Did you speak to her, daughter?"

"No. You see, I'm the newest comer here and I thought they ought to call on me——"

"Yes, I guess that's etiquette, but I reckon they don't stick close to that in a big city. But, daughter, there's one thing you'll find is always observed everywhere you go, and that is a touch of human nature. Just smile and follow it up with a kind word and a good act, if you get the chance, and, land sakes, I shouldn't wonder if your house would be the meeting place for the whole neighborhood before long."

"Just the way yours is back home?"

Mother nodded again. "Let me get my own tea ready. You just tell me where verything is and I'll do the rest. It'll make me feel right at home quicker. Then you ought to rest quite a bit now. I was telling that nice Mrs. Greene who came up from the last station on the same train with me and said she lived here in the city somewhere about you, and that I was coming to stay until everything was nicely settled."

"Mother, you're a darling! What did day say? Will he be able to manage without you that long?"

Mother, making toast, replied: "Of course he will, a great big fellow like he is. Well, it's high time he learned to get along with me away, for I've stuck around home till all you children are away and settled and now I'm going to have a little spell of visiting. But I was telling you about that Mrs. Greene. She said she wished she had a mother to come to her; that she's so lonely she could cry. She lives out this way in something like 'Recall Place.'

"Why, that must be Mrs. Greene right along the next street. They call that Recall place and this is Fifty-second street. Why, she has a house full of company all the time. And she's so lonely.

"Said they were her husband's people who come in and boss things around, and she longs for a good friend, and would give anything if her mother was living."

"Mrs. Greene!" Betty murmured. "You never can tell, can you, mother?"

"Never, honey. And don't you know, I think that is the great secret of life—say the little word; do the little deed, for you never can tell how much the other fellow may need it. Don't take time to feel sorry for yourself; get busy keeping the other fellow from being sorry for himself."

"That's all right to tell, mother, but everybody does not meet with the reception that you do. Now, there's that Mrs. Greene. She's lived next to me for nearly a year, and she's never thrown a smile in my direction."

Mother nodded again. "Yes, she has a kind of haughty look," she said. "I noticed that, and then I smiled at her and she smiled, but drew her face straight quickly as if she didn't want anybody to see it. Thinks I to myself, there's something wrong here. So I leaned over—she sat right in front of me—and said, 'Excuse me, but did you knit that handsome scarf yourself?" And she said she had, and then I got to telling her that I'd knit three sweaters so far and was going to do more. She said she didn't think she could manage a sweater, and I asked her to let me show her, and I got out my stuff, and we had a real nice visit together, and when she departed she had learned how to do a sweater."

"Mother, your'e a wonder you get acquainted with a woman on the train, wheedle her out of her grouchiness, teach her to do something useful, get acquainted with and tame a crank, visit me and cure the blue imps, and now you've go tea and toast ready for me, and you haven't been here an hour. Wait: there's some one at the kitchen door." Betty tripped to the door. "Mrs. DeHaven's maid with a glass of preserved figs for you," Betty announced when she returned to the dining room. "And, mother, Mrs. Greene just waved to me from the kitchen window. I wonder what it is about you——"

"Just a touch of human nature, honey. You try it and see."

'I will. And then I'll teach it to—" Betty smiled at a pleasant fancy.

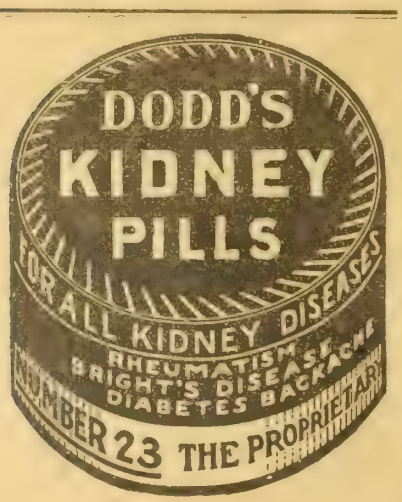
SOME PRINCIPLES IN THE COOKING OF THE COMMON VEGETABLES

The object of cooking vegetables at all is to render the cellulose and starch of which they are mainly composed (leaving water), digestible. Nature gradually carries on the proces of softening them, in their ripening, by means of the sun which heats the air and the soil, while woman completes it by the artificial or stored up heat of coal, oil or electricity.

Cleaning.—All vegetables should be thoroughly washed. Green vegetables such as spinach, beet tops, dandelion etc., should be washed in a collander with a stream of cold water running through it. Some root vegetables can be cleansed, only by being scoured with a brush. Cabbage and cauliflower should be soaked in salt and water for at least half an hour to rid them of insects. All vegetables should be kept crisp and fresh by being completely immersed in cold water for some time before needed. Limp lettuce, shrivelled beets and celery, potatoes, carrots, turnips and beets, peeled and thrown unwashed into tepid water, and left to soak half out of water, present a sorry sight of color and texture when brought to the table.

Preparation.—Peel thinly or scrape the root vegetables, cutting away all woody parts. Boil the shells of fresh, green peas and put the peas to boil in the shell liquor. Keep the liquor of spinach and asparagus to make the sauce to put over them when cooked. Potato water helps to make a rich meat gravy. The waste from table celery should be dried and kept for soup. Break or cut neatly into pieces of uniform size the vegetables to be cooked, so that they may all have the same heat.

Cooking.—Take a loaf out of nature's note book. Continue or reverse her processes, in the cooking of vegetables. The harder the vegetables, the longer they should be soaked, and the longer and slower they should be cooked. Tender vegetablese may be boiled rapidly. There are two ways of cooking vegetables, boiling and



ROYAL YEAST CAKES

There is more energy in a pound of good bread made in the home with Royal Yeast Cakes than in a pound of meat. Bread making is a simple operation and requires no previous experience. Full instructions in Royal Yeast Bake Book, mailed free on request.

E.W.GILLETT CO.LTD.
TORONTO

What Does Wash Day Mean to You?

Is it a burden—a toil—a weary round of drudgery? Get a

Maxwell

"High-Speed Champion" Washer

and laugh at washday. Just put the clothes in. The washer does the hard work. Clothes come out clean and white—better than if you spent hours scrubbing over a steamy tub. The Maxwell washer works with crank handle at side as well as top lever. Use which you like—easy either way!
Ask your dealer to show you the Maxwell High-Speed Champion.

MAXWELLS LIMITED
Dept. X. ST. MARY'S, Ont.

baking. Fresh peas and beans may be boiled first, and finished up, in their own fluid in the oven. Most vegetables retain their flavor better and require less watching if cooked in their own liquor in the oven, in a covered porcelain dish called a casserole. Try cooking the vegetables in this way, if it is new to you.

Salt and Pepper.—Add the salt shortly before dishing the vegetables. Remember the saying of a famous French chef, "Monsieur, I am pleased that none of the gentlemen last night touched the salt cellar. I could not desire for a finer compliment."

THE ICELESS REFRIGERATOR

A companion convenience to the fireless cooker for the hot summer days is the iceless refrigerator, or milk cooker. This consists of a wooden frame, covered fith canton flannel or some similar material. It is desirable that the frame be screened although this is not absolutely necessary. Wicks made of the same material as the coverings rest in a pan of water on top of the refrigerator, allowing the water to seep down the sides. When evporation takes place the heat is taken from the inside, with a consequent lowering of temperature. On dry, hot days a temperature eof 50 can be obtained in this refrigerator. The following description will aid in the construction of this device:

Make a screened case 3½ feet high with other dimensions 12 by 15 in. If a solid top is used, simply place the water pan on this. Otherwise fit the pan closely into the opening of the top frame and support it by a 1-inch cleats fastened to the inside of the frame. Place two movable shelves in the frame, 12 to 15 inches apart. Use a biscuit pan 12 inches square on the top to hold the water, and where the refrigerator is to be used indoors have the whole thing standing in a large pan to catch any drip. The pans and case may be painted white, allowed to dry, and then enamelled. A covering of white canton flannel should be made to fit the frame. Have the smooth side out and button the covering on the frame with buggy or automobile hooks and eyes, arranged so that the door may be opened without unfastening these hooks. This can be easily done by putting one row of hooks on the edge of the door near the latch and the other just opposite the opening with the hem on each side extended far enough to cover the crack at the edge of the door, so as to keep out the warm, outside air and retain the cooled air. This dress or covering will have to be hooked around the top edge also. Two double strips one-half the width of each side should be sewed on the top of each side and allowed to extend over about 2½ or 3 inches in the pan o fwater. The bottom of the covering should extend to the lower edge of the case.

Place the refrigerator in a shady place where air will circulate around it freeley. If buttons and buttonholes are used on the canton flannel instead of buggy hooks the cost should not exceed 85 cents.

A TIMETABLE FOR VEGETABLE COOKING

Potatoes, new, will take about 15 minutes, old potatoes, 25 minutes. Onions and Spanish onions, from one to three hours. Old carrots, one and one-quarter hour. Young carrots, 25 to 35 minutes. Young cabbages and greens, 15 minutes. Old cabbages, 25 to 30 minutes. Cauliflowers, 15 to 30 minutes. French beans, 15 to to 20 minutes; 30 minutes may be allowed for quite old beans. Vegetable marrows, 20 minutes. Salsify, from two to two and a half hours. Aritchokes, 30 to 35 mintes. Turnips, the same time. Celery, boiled or braised, two or three hours. Young green peas, 15 to 20 minutes, and old ones 35 to 40 minutes. Spinach, 15 to 20 minutes. Brussels sprouts, the same time. Board beans, 18 to 35 minutes. Beet root, one and a half to two and a half hours.

VOL-PEEK
Mends Pots & Pans
Cooking utensils, Graniteware, Aluminum, Enamelledware, Tin, Copper, Brass, Iron, etc. Easy to use, no tools required, ready for use in 2 minutes. Saves a pot for ½ a cent. 15 cents at your Dealer, or postpaid by Vol-Peek- B.Co., Box 2024, Montreal

"I Am So Afraid it is My Heart"

VERY many people live in constant dread of heart trouble when the heart is in no way diseased.

There is perhaps no organ in the human system which is worked so hard and yet the heart seldom goes wrong so long as it is supplied with plenty of rich, red blood.

In fact the heart repairs its own waste and plods on, lifting tons of blood each year and pumping it through the body.

But the heart's action is the result of the contraction and expansion of muscles and these muscles are operated by the nervous system. When the blood gets thin and watery and the nervous system is starved the action of the heart, just like that of the stomach, bowels and other organs, is slowed down.

As a result, you are easily tired out, experience shortness of breath, palpitation of the heart and general bodily weakness.

The quickest and most rational way to overcome this condition is by the use of Dr. Chase's Nerve Food to enrich the blood and build up the exhausted nerves.

With the nerves in a run-down condition you are sure to get downhearted and discouraged and to imagine that all sorts of dreadful things are likely to happen to you.

But when you have been using the Nerve Food for a week or two you will begin to see the silver lining to the cloud and to realize that you are on the way to health, courage and happiness.

Mrs. Nellie Dertinger, Simcoe, Ont., writes: "I was a great sufferer with my nerves and with pains about the heart. I could not sleep at nights and though I tried several doctors could not get much relief. A friend advised the use of Dr. Chase's Nerve Food and I am happy to say the results have been a surprise. My health has been built up wonderfully. I have no more pains about the heart, my nerves are steady and I sleep and rest well."

Dr. Chase's Nerve Food, 50c a box, 6 for $2.75, all dealers or Edmanson, Bates & Co., Ltd., Toronto. The portrait and signature of A. W. Chase, M.D., the famous Receipt Book author, are on every box.

THE HOME LAUNDRY

The laundry should contain besides the washer and tubs, two or three pails for drawing water; a long, smooth stick for stirring the clothes while boiling; one medium sized tin pail; one large dipper; one large and one small jacket; two cotton bags, in which the most delicate articles can be placed before being boiled; one or two high wooden clothes-horses, and a line on which to dry clothes in bad weather; an ironing table; a closet for holding irons, ironing blankets, etc., is very convenient. In this closet should be kept 5 or 6 dozen clothes pins, a board 1½ feet long and 8 in. wide on which to iron shirt bosoms; a paper or cushion of pins; and three or four good iron holders.

PILES Do not suffer another day with Itching, Bleeding, or Protruding Piles. No surgical operation required. Dr. Chase's Ointment will relieve you at once and as certainly cure you. 60c. a box; all dealers, or Edmanson, Bates & Co., Limited, Toronto. Sample box free if you mention this paper and enclose 2c. stamp to pay postage.

Cramps in Stomach

Never Suffered Worse Pains.

There is no other kind of bowel trouble that comes on one so quickly and with so little warning as an attack of cramps in the stomach. These are very painful, and when you are seized in this way, and are all doubled up, you want a remedy you are sure will give you relief, and give it quickly too

You don't want some untried medicine that might only help you. You want Dr. Fowler's Extract of Wild Strawberry. Every one who has ever used it knows that a dose or two will give instant relief.

Dr. Fowler's Extract of Wild Strawberry is one of those remedies that should be in every house, as no one knows just when some member of the family may be attacked with diarrhoea, dysentery, cholera, cramps colic or some other bowel complaint.

Mrs. S. E. Clark, Dorion Station, Ont., writes:—"While visiting my mother in town, I was taken very sick with cramps in my stomach. I don't think I ever suffered worse pains. I sent and got a bottle of Dr. Fowler's Extract of Wild Strawberry, and in a couple of hours I was all right again, and able to ride eight miles home in the evening. I can't praise your wonderful medicine enough."

Dr. Fowler's Extract of Wild Strawberry has been on the market for the past 74 years. Don't experiment with new and untried remedies. Refuse substitutes. They may be dangerous.

Price 35c. at all dealers. Put up only by The T. Milburn Co. Limited, Toronto, Ont.

SWEET SANDWICHES FOR THE PORCH PARTY

By May Belle Brooks

Sandwiches with a sweet filling are more wholesome than heavy cakes during hot weather—and ever so much easier to make. The only requirements are neatness and a generosity of filling. By cutting the bread in various shapes, variety is introduced. For some reason or other, possibly because it resembles a cake, the round shape is the most attractive for this sore of a sandwich. A sharp biscuit or cooky cutter will produce neat forms. Be careful to have the bread well buttered before spreading on the filling. It is a good plan to butter the loaf and then cut off a slice, rather than buttering after the slices are cut.

Grape juice, sweetened and cooked to a jelly consistency with a little corn-starch, is a new idea for the sweet sandwich. Be sure to cook it (using a double boiler) about ten minutes or the starch will have a raw taste. Another excellent filling made with corn-starch is this: Put two-thirds of a cup of granulated sugar, two etaspoonfuls of cocoa, one-half cup of cold water, and a tablespoonful of butter in a double boiler. When the butter is dissolved, stir in two tablespoonfuls of corn-starch dissolved in one-half cup of water. Cook ten minutes after it tsarts to boil. Cocoanut, nuts, or fruits may be added and the cocoa omitted. While warm, spread on the bread.

Jams are always convenient, and a particularly nice filling is made of peach jam and chopped almonds. Honey and nuts are food for the gods. Grated chocolate mixed with ground nuts and enough sweet cream to bind the mass will please the most fastidious appetite. Another popular combination is peanut butter and ground seedless raisins.

All of the candied fruits make delectable fillings, either alone or combined with other ingredients. A favorite calls for equal parts of candied pears, citron, and ginger, all chopped fine and thinned with a little fresh pineapple juice or other fruit juice one may have on hand. Spread between the thinnest rounds of brown bread. Fresh pineapple, shredded and mixed with an equal amount of ground pecans and with just enough thick syrup to give it body, has refreshing qualities.

Lady fingers, a trifle stale, make good sandwiches with a dainty filling like the following: Candied cherries and raisins—a little more of the cherries than raisins—run through the chopper and flavored with rose extract. If too thick, thin with orange or cherry juice, or a little hot water will do.

If you wish something especially toothsome, try mashing six bananas to a paste with lemon juice, honey, and whipped cream. Baked bananas mashed to a pulp is a novel suggestion, but it needs lemon juice to relieve a certain flatness of taste.

Lemon preserves, made like orange marmalade, except that only lemons are used, is one of the daintiest additions to the fruit cupboard. It comes in handily when a plate of sandwiches is wanted in a hurry. Spread between bread, crackers, or sweet wafers, it is as nice a tidbit as any one would care to eat on a sultry afternoon with a glass of lemonade or iced tea.

Lemon honey is something that will keep indefinitely. To make it, heat in the double boiler six tablespoonfuls of butter, one cup of sugar, the yolks of three eggs, and the grated rind of one large lemon. When it begins to thicken, add the juice of the lemon and cook until thick like honey.

Dates are good mixed with orange marmalade or apple jelly with a sprinkling of cloves. And they are equally good with nuts. Raisins and nuts are always easy to obtain, and no sandwich could be nicer than these two ingredients, ground fine and mixed with thick cream.

A filling that all children enjoy consists of cocoa blended with sugar, ground walnuts, and cream enough to make a soft paste. Add a flavoring of vanilla and cinnamon.

Many sweet things are frequently combined with cheese, which gives a sandwich a tribe less cloying. Dates and cheese are especially harmonious, and watermelon preserves also combine favorably with it. Cottage cheese mixed with apple butter is new. A different way to make up a sandwich is to cover one slice of bread with soft cheese and another with ground raisins, then press together. A bit more unusual is the combination of ground popcorn, gooseberry jam, and cheese. Or orange marmalade and cheese.

Marshmallows have earned a name for themselves in fancy conceits for the tea-table. They may be melted alone and poured over thin slices of toasted bread or crackers or cakes, or mixed with candied fruit or nuts, or melted chocolate. Sweet melted chocolate, either by itself or embellished with fruits and nuts, spread while hot between the slices, is quite tempting enough for most palates. Fudge sandwiches are made by spreading the fudge before it sets between bread and allowing it to cool before serving.

Maple walnut sandwiches are delightful. Boil together one cup of maple sugar, one cup of granulated sugar, and one cup of rich milk or cream. When it reaches the soft-ball stage, add a tablespoonful of butter and a teaspoonful of vanilla. Remove from the fire and set in a pan of cold water until partly cooled, then add one-half cup of very finely chopped walnuts and beat until creamy. If the mixture hardens too soon set in a pan of hot water.

Mocha filling is made by creaming one-half cup of butter with one and one-half cups of confectioner's sugar, adding a pinch of salt. Beat in gradually one-fourth cup of strong coffee, two tablespoonfuls of melted chocolate, and a few drops of vanilla.

Everybody likes caramel goodies, so one would be safe in serving this filling: Cook together one cup of sugar and one-fourth cup of water until it spins a thread. While this is in progress, cook one-fourth cup of sugar in a saucepan until it starts to burn, add a tablespoonful or two of hot water and stir until dissolved, then add to the boiled syrup. Pour while hot over the beaten white of one egg, add some pecan nuts and spread between little squares of whole wheat bread.

Remember that the most successful sandwiches have their filling minced fine or mashed to a paste—never filled with coarse particles of food.

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We have published a little book that is not only interesting, but helpful. It contains, besides a complete Section of "Hints for Canners," a large number of exceptionally good recipes which will be appreciated by housewives during the preserving season.

In the interests of the family health and for true economy "Can all the Fruit and Vegetables you can"; and to get best results in so doing, have a copy of this useful book before you.

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DEPT. 13

DOMINION GLASS COMPANY, LIMITED
MONTREAL

A WATER SYSTEM

Just to turn the faucet over the kitchen sink and draw all the water you need! Any housekeeper who knows that comfort after having had to carry water into the house by the pailful for years and years knows well there is no other labor-saving appliance that can surpass running water in the house. Generally it costs less to have this in any farm house than the farmer's wife expects. If there is a gasoline engine on the farm a trifling sum of money will be sufficient to pipe the water into the kitchen from an over-head tank.

MAKING ICE CREAM; FEW GOOD RECIPES

Ice cream can be made by cooking or without cooking the cream and sugar. It is easier to make it without cooking, and the cream is of a white and snowy texture, but cooking removes any possibility of curdling and gives the cream more richness. If the cream is cooked, put it in a double

Back at His Work in Quebec Woods

WILLIAM H. McDONALD SHOUTS PRAISES OF DODD'S KIDNEY PILLS

His Troubles Were Not Only Painful but Alarming Till He Found Relief in Dodd's Kidney Pills.

Bury, Que., July 20th (Special)—William H. McDonald, a young man living near here, is shouting the praises of Dodd's Kidney Pills. Rheumatism in his arms, severe pains in his back and head and an alarming pain in the region of his heart rendered him not only helpless but much alarmed as to the future. He found the relief he needed in one box of Dodd's Kidney Pills.

"I will recommend Dodd's Kidney Pills to anyone with weak kidneys," Mr. McDonald says in telling his story. "I am back at work in the woods feeling as well as ever. What with rheumatism and those pains in the head and near the heart, I was sick and anxious.

"But after a week's illness I tried Dodd's Kidney Pills. One box of them made me as well as ever I was in my life."

Rheumatism is caused by uric acid in the blood. If the kidneys are right they will strain the uric acid out of the blood. Rheumatism is caused by weak kidneys. The natural cure is to make the kidneys strong by using Dodd's Kidney Pills. Ask your neighbors about them.

Had Fainting Spells.

TOOK AWFUL FALLS.

Miss Eva P Yateman, Krugersdorf, Ont., writes.— 'I feel that I must write and tell you of the great benefit I have received from Milburn's Heart and Nerve Pills.

About three and a half years ago I was taken terribly bad with my heart, nerves and fainting spells, and was down in bed for about six months. I doctored with two different doctors and seemed to get better although the fainting spells would not leave me. I would take such terrible falls wherever I was that it was not safe to leave me alone at any time. At last I decided to resort to proprietary medicine and took several different kinds, but seemed to receive but little benefit from any of them. One day noticing the advertisement of Milburn's Heart and Nerve Pills, I decided to try them and before I had taken more than two boxes I could see they were helping me. I have taken about ten boxes and am almost cured of those terrible spells. I sincerely feel that your medicine has proved a blessing to me, and I would advise anyone troubled with their heart to try it as I am confident they will find relief.'

Milburn's Heart and Nerve Pills are 50c. a box at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

boiler, set it on the stove and stir often; take it off the stove when the water in the outer pan boils, add the flavors and sugar, stirring it until the sugar dissolves; let it stand a few minutes, strain, and put into the freezing can, and freeze.

If uncooked cream is used, it is well to whip a part of it, chill it, and stir it in just as the freezing cream is beginning to set.

Before beginning to freeze ice cream it should be allowed to stand in the freezing can, packed with ice, but covered only with gauze, until it is thoroughly chilled; if this is done it will freeze more readily and take less ice, and also, if not cooked, it is apt to become granular, or curdle, if attempt is made to freeze it right away, without first chilling.

Coarse salt must be used, the coarser the better. Fine table salt melts the ice too rapidly and is not suitable. Snow ice, which is full of airholes, is the best to use, being more readily penetrated by the salt. The ice should be broken into pieces no larger than a nut shell. Pack it into the freezer, add enough water to make it into a thick mush, and then put into the salt, in the proportion of 2 to 3 parts ice to 1 part salt. The water need not be drawn off until it floats the ice.

When newly frozen, ice cream is apt to be mushy, and lacks flavor and consistence, so that it is advisable to pack it down and let it ripen 4 or 5 hours before it is served. In packing it down, if it is to be kept thus for some time, pack in some ice, chopped coarser, and salt, and cover with some heavy material, an old piece of carpet for instance, and keep the covering wet.

Following are some good recipes which provide the different flavorings for ice cream:—

Fruit Ice Cream

Soft fruit, like raspberries or strawberries, should be mashed, sweetened, strained through a colander, if so preferred; this is not absolutely necessary, and stirred into the ice cream when partly frozen. Peaches, apricot, or such like fruit should be cut into small pieces, sugar added, allowed to stand until the sugar is dissolved, and then stirred into the cream when it is partly frozen.

Caramel Ice Cream

Until about three tablespoons of caramel for each quart of its cream. A little less sugar will be needed when caramel is used.

Chocolate Ice Cream

Use about four ounces of chocolate to each quart of ice cream; it should be mixed smooth in a little milk. A little vanilla is also added often, and a little cinnamon gives it spicy flavor; steep the cinnamon in warm water, and use the clear liquid for flavoring.

Philadelphia Ice Cream

Take one quart of rich cream, one heaping cup of sugar, and flavor to taste, and proceed as with other ice creams.

Almond Ice Cream

After blanching the almonds, pound them to a paste, adding a little rosewater to prevent their oiling; then add it as a flavor. Use about three ounces of almonds to the quart of ice cream.

Pineapple Ice Cream

To each quart of ice cream, allow one large pineapple; pare, slice, cut it very fine, lay it in a deep dish and sprinkle with sugar; cover the dish, and let it stand two or three hours; then strain through a sieve, mashing and pressing out all the juice; stir it gradually into the cream, beating well. A few slices of pineapple can be added, cut into dice, when the cream is partly frozen.

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I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
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Windsor, Ont.

CARE OF HAIR BRUSH

It is impossible to overestimate the danger to the hair of unclean combs and brushes. Such toilet instruments should be carefully cleansed and disinfected once a week and there is a way to do it so as not to injure them. The brush and comb must first be quickly washed, then dipped in a water with boric acid and then sunned and aired. An expensively-backed brush may be cleansed by dipping the bristles alone in a strong solution of ammonia and water. After this, run hot and cold water alternately over this part of the brush, shake it vigorously, and put, bristles down, over a rest of some sort to dry in the open air.

If the bristles of the brush have lost their stiffness or elasticity, treat them to an ammonia and salt bath. First wash the bristles in hot water to which ammonia has been added, and then dip directly into water to which salt has been added. Dry the brush, with bristles up, in the open air.

Borax also cleans a brush well. Dissolve the borax in hot water and dip in the bristles. Rinse thoroughly, when clean, and dry, with ristles up, in open air. Combs can be cleaned with borax or ammonia, but ammonia sometimes discolors colored celluloid combs.

Another admirable method of cleaning brushes is to use dry bran. Naturally, this method is easier on the brushes. Rub the bran in thoroughly, as you would rub orris root into the hair, then shake and rub it out. It will take out all grease; bran can be safely used with brushes having bristles set in rubber, which cannot be cleaned with water.

LARD AND FRUIT PRESS

A very simple but handy device for pressing out lard, juices for jelly or fruit for marmalade, is made from two boards, each about 18 in. long, 3 in. wide and ½ in. thick, formed into the shape of paddles and hinged together. The hinge is made by running a wire through holes bored in one end of each of the paddles, and twisting the ends together. This presser is easily cleaned, and will save the hands from stains and other effects of the juices.

EMBROIDERING HANDKERCHIEFS

A woman who prides herself on her beautifully embroidered handkerchiefs has solved the difficulty of fastening the handkerchief in the embroidery hoop so that the corner may be easily worked. She bastes the corners of four handkerchiefs together, making one piece, which, when put into the hoop, brings the corners into the centre of the open space convenient for working. The same method may be followed when embroidering napkins.

A good bread to use for sandwiches.

1 cup scalded milk, 1 tablespoon lard, 1½ teaspoons salt, 6 cups sifted flour, 1 cup boiling water, 1 tablespoon butter, 1 yeast-cake, dissolved in ¼ cup lukewarm water.

To milk and water add shortening and salt; when lukewarm, add dissolved yeast-cake and flour, beat thoroughly, cover, and let rise until light. Add flour until dough is stiff enough to knead; knead thoroughly, let rise, shape in loaves, let rise again and bake.

RECIPES FOR RHUBARB

Rhubarb is not only one of the ever-ready and reliable early spring herbs, of which delightful desserts can be made, but it may be used to advantage from the canning storage cellar or the forcing plot during the winter.

The following recipes will prove to you just how good this herb can be made.

Baked Strawberries and Rhubarb

Place dried rhubarb, sugar and strawberries in layers in a baking-dish. Bake slowly in a moderate oven.

Rhubarb Fluff

1½ cupfuls rhubarb, 1 cupful water, ½ cupful sugar, 3 egg whites, ¼ teaspoonful lemon extract, 2 tablespoonfuls flour.

Cook rhubarb in water until tender, add sugar and flour mixed together and cook 5 minutes. Flavor and cool. Beat egg whites until stiff and fold rhubarb mixture into them. Put into glasses, heaping up in center. Pour around outer edge a custard sauce made as follows:

3 egg yolks, 2 tablespoonfuls sugar, ½ supful milk, ½ teaspoonful vanilla.

Rhubarb Tapioca Pudding

2 cupfuls rhubarb (diced) ½ cupful tapioca, 2 cupfuls water, ¼ teaspoonful salt, ½ cupful sugar, ¼ teaspoonful lemon extract.

Soak tapioca in cold water 4 hours. Cook in double boiler until transparent. Add salt, sugar, lemon extract and rhubarb and cook until rhubarb is tender. Serve with cream.

Pineapple Rhubarb Cream

½ envelope gelatin, ¼ cupful cold water, 1 cupful rhubarb, 1 cupful grated pineapple and juice, ½ cupful sugar, ½ cupful water, 1 cupful whipped cream.

Soak gelatin in cold water. Cook together the rhubarb, pineapple, sugar and ½ cupful water, and add to soaked gelatin. Set aside to cool. When it stiffens, add cream, beaten until stiff, and chill.

Rhubarb Strawberry Mold

½ envelope gelatin, ½ cupful cold water, ½ cupful boiling water, 1 cupful rhubarb, 1 cupful sugar, 3 eggs (whites), ½ cupful strawberry preserves.

Soak gelatin in cold water. Cook rhubarb in boiling water and sugar until tender. Add to soaked gelatin and stir until gelatin is all dissolved. Cool, and when it begins to set, add gradually to stiffly-beaten egg whites, beating mixture constantly. Add strawberry preserves, put in mold and chill.

Rhubarb and Raisin Tarts

1½ cupfuls rhubarb, diced, ½ cupful raisins (chopped) ½ teaspoonful candied orange peel (cut fine), ½ cupful sugar.

Roll pastry to ⅛-inch thickness; cut with biscuit-cutter; mix ingredients; place 1 teaspoonful in center of each piece; fold edges together: pierce top and bake.

GRASSHOPPERS IN THE WEST

(From the Saskatoon Phoenix

Western Canada is threatened by a visitation of grasshoppers. This, if not checked, can develop into a far-reaching and serious catastrophe. The plague has gained strength in Manitoba and has been reported in Southeastern Saskatchewan. Dr. A. E. Cameron, who is in Saskatoon at present, is taking steps to fight the grasshopper, btu the farmers of the Province must carefully co-operate with the authorities if this devouring pest is to be destroyed. In 1888, and earlier, Manitoba was overrun by grasshoppers, which literally consumed every green thing in their path, but the country has been fairly free of them since that time. The difficulty of securing arsenic with which to fight them is so great in Canada that it may become necessary to obtain a supply from the United States. Wherever grasshoppers appear in Saskatchewan reports should immediately be made to the university authorities and to the Dominion and Provincial Departments of Agriculture and no effort should be regarded as too great to check and obliterate this destructive visitation.

SOME OLD DATES

How many people know that if the old calendar makers speak truly, Cain killed Abel on the first Monday in April, which was Cain's birthday.

Superstitious people used to avoid this day for business transactions. In his Precepts to his son, William Lord Burghley wrote: "Though I think no day amisse to undertake any good enterprise or businesse in hande, yet have I observed some, and no meane clerks, very cautionaire to forbeare these three Mundayes in the yeare, which I leave to thine owne consideration, either to use or to refuse, viz: 1.—he first Monday in April, which day Cain was born, and his brother Abel slain. 2.—he second Munday in August, which day Sodome and Gomorrah were destroyed. 3.—The last Munday in December, which day Judas was born that betrayed our Saviour Christ."

Another recent Biblical anniversary which I'll wager not one in a million noted, occurred on March 17th. On this day Noah is said to have entered the Ark and he came out again on April 29th.

How the old calendar makers established all these precise dates is difficult to say. Perhaps, after all, some of them were only guesses.—The foregoing is from the London Answers.

Minard's Liniment Co., Limited.

Gents,—I cured a valuable hunting dog of mange with MINARD'S LINIMENT after several veterinaries had treated him without doing him any permanent good.

Yours etc.,
WILFRID GAGNE.

Prop. of Grand Central Hotel,
Drummondville, Aug. 3, '04.

HINTS FOR MOTORISTS

by ALBERT L. CLOUGH — Editor Motor Service Bureau Review of Reviews...

WHAT IS A "GAS KNOCK?"

There's Much Yet To Be Learned About Engines

When there is a knock in an engine and its cause cannot be attributed to carbon deposits, preignition, over advanced spark or mechanical derangement, it is often diagnosed as a "gas knock." Calling such a sound by this name is quite often a confession that the exact cause is not ascertained and so little is actually known as to precisely what happens in the gasoline engine cylinder, that no one need be ashamed to admit ignorance as to the origin of such disturbances. A great part of the "doings" of the gas and the engine is yet hardly more than theory, although it is talked of as if it were a settled fact. Things happening so inconceivably rapidly, in closed spaces are not readily followed or fully understood. An engine running on a weak mixture frequently "pounds" when working hard, at low speed and this is generally called a "gas knock." The origin of the sound is probably as follows: The weak mixture produces an effective pressure, so low in comparison with the resistance against which the engine si working, that during the power stroke, the moving parts pass from a condition of delivering useful work to that of receiving power from the flywheel and, if there is looseness in the bearings of such parts, there is a tendency for such looseness or "play" to be taken up first in one direction and then in the other—the striking together of the surfaces involved being the immediate cause of the pounding. A research recently reported to the Society of Automotive Engineers throws light upon another kind of "gas knock." It seems that the gasoline now in use has a habit of burning by stages. There is a combustion when the spark occurs, that may result in the breaking up of a portion of the fuel into compounds, which may then explode with very high pressure, detonate as it is called, if the temperature to which they are subjected is very high. It is these detonations, subsequent to the initial explosion and not self-ignition, that produce the knocks in many engines, that run hot and with too high compression. Pressure diagrams are shown that seem to demonstrate this detonating action. The research also tends to indicate that carbon deposits cause knocking not by causing self-ignition, but by increasing the compression anw combustion temperature to the point where detonating hydro-carbons are formed and fired.

COMPRESSION DATA

W. S. F. asks: (1) How do you figure the compression pressure in a motor-cylinder, (2) In a cylinder of 2½ inch bore and 3½ inch stroke, what should the clearance space be to give a gauge compression pressure of 90 pounds per square inch? (3) What degree of compression is ordinarily used and what is the highest that can be employed without causing preignition?

Answer: (1) The absolute compression pressure per square inch (gauge pressure plus 14.7 pounds), is equal to the absolute pressure at admission (14.7 pounds or less), multiplied into the compression ratio raised to 1.3 power. The compression ratio is the ratio of the clearance volume to the total volume above thee piston, when at its lowest point. A table of compression pressures is found in Heldt's "The Gasolint Automobile," p. 26, the use of which will eliminate calculations. (2) To obtain a compression pressure of 90 pounds per square inch gauge you will require a compression ratio of about 47.6. Your assumed cylinder will have a piston displacement of 17.18 cu. in. and the clearance volume should be about 4.56 cu. in. (3) Most engines carry lower pressures. Nninety pounds is safe only in small cylinders which are well cooled.

WEAK MIXTURE AND COLD INTAKE

W. W. A. asks: Why doesn't my car pick up better? It coughs, spits and sputters for a time, before it can handle the gas, when the throttle is first opened. Besides it does not seem to get kas enough, as I generally have to use the choker to get the desired power.

Answer: These symptoms indicate that the cylinders receivse weak mixture, that backfires into the carburetor occuh and the engine lacks power. Adjusting the carburetor for more gasoline, in proportion to air should relieve the situation, but we should not be surprised if the root of your trouble lay in the fact that your carburetor and intake are insufficiently heated to handle the present grade of fuel. The result of this condition is that the heavier constituents of the gasoline fail to vaporize, thus rendering the mixture leaner than it ought to be, considering the amount of fuel supplied. If you can apply exhaust heat to the intake system, we fancy that your engine will run properly upon your present carbuertor adjustment and more economically than it will if you open the gasoline adjustment to supply fuel.

Carhartt's Allovers

I FIGURE that when a man wears overalls he wants to be able to bend, twist or stoop freely without being conscious of them. So I purposely made my Carhartt's extra roomy, and double stitched every seam. The suspender buttons stick as if they were imbedded in concrete. Interlacing suspenders give you shoulder ease you never knew before —and they stay together in the wash, while the first grade denim cloth I use has a staunch durability that ensures a surprising length of service.

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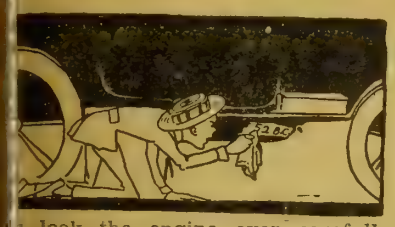
DRIVING OVER BAD ROADS

Th emtjority of motorists stick pret- close to city streets and country ghways that are at least somewhat iproved, but occasionally, through istake or intentionally they have to ive over very bad roads, such as tally neglected country byways, log- ng trails and even, in rare instances er fields. Here are a few sugges- ons applying to such unfavorable nditions: Drive at very low speed, ing middle or low-gear if necessary, r there may be rocks that will stone- uise the tires or cause such severe ocks as to break springs. There ay also be "bumps," perhaps hidden long grass. If sharp stones are countered, run over them, if pos- ble, with power shut off, as the cut- g effect on tires will then be less. ok out for stumps or rocks high ough to be struck by the car. Us- lly if the front axle will clear the st of the car will, but this not uni- rsally the case. Beware of spring les or wet places, where the wheels y sink and lose traction. Don't ist too much to the rude bridges d causeways found on neglected ads, for they may fall under the ight os a heavy touring car. As a neral rule, drive in the center of e road, following the ruts made by eceding vehicles, for the sides of ch roads are frequently soft and ish under heavy loads. Following ep ruts is, of course, hard on tires, t it is preferable to taking more rious chances. In turning out for ner vehicles, use special care on ac- unt of the danger of ditching.

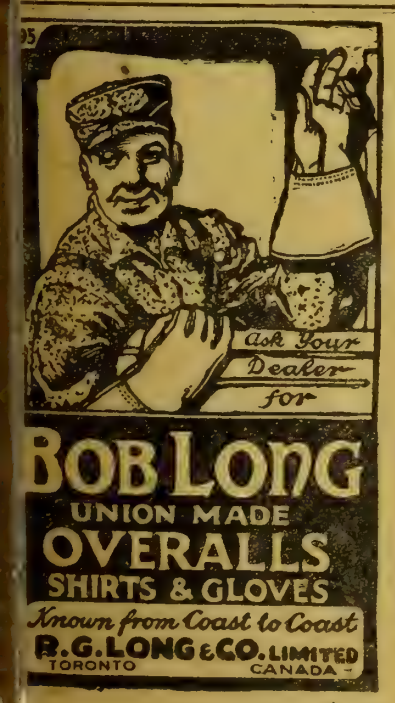
DETERMINING A CAR'S "VINTAGE"

F. M. W. writes: I am thinking of ying a used ——— car, that is said be a 1915 model, but there is some ubt in my mind as to what year it s built in. How can I find out pos- vely as to this?

Answer: The serial number it rs will tell when it was built. If



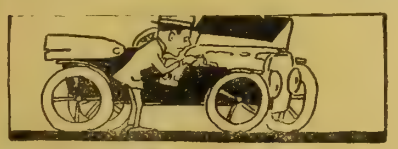
look the engine over carefully, ought to find a number stamped the metal, probably upon some t of the crank case. This number y be obscured by dirt and escape ir attention at first. When you find and submit it to any agent for this ke or to the manufacturer himself he should be able to give you the year immediately. In the case of many makes ther eare peculiarities of construction or equipment by which anyone familiar with the cars of this particular company, can tell you exactly when it was produced.



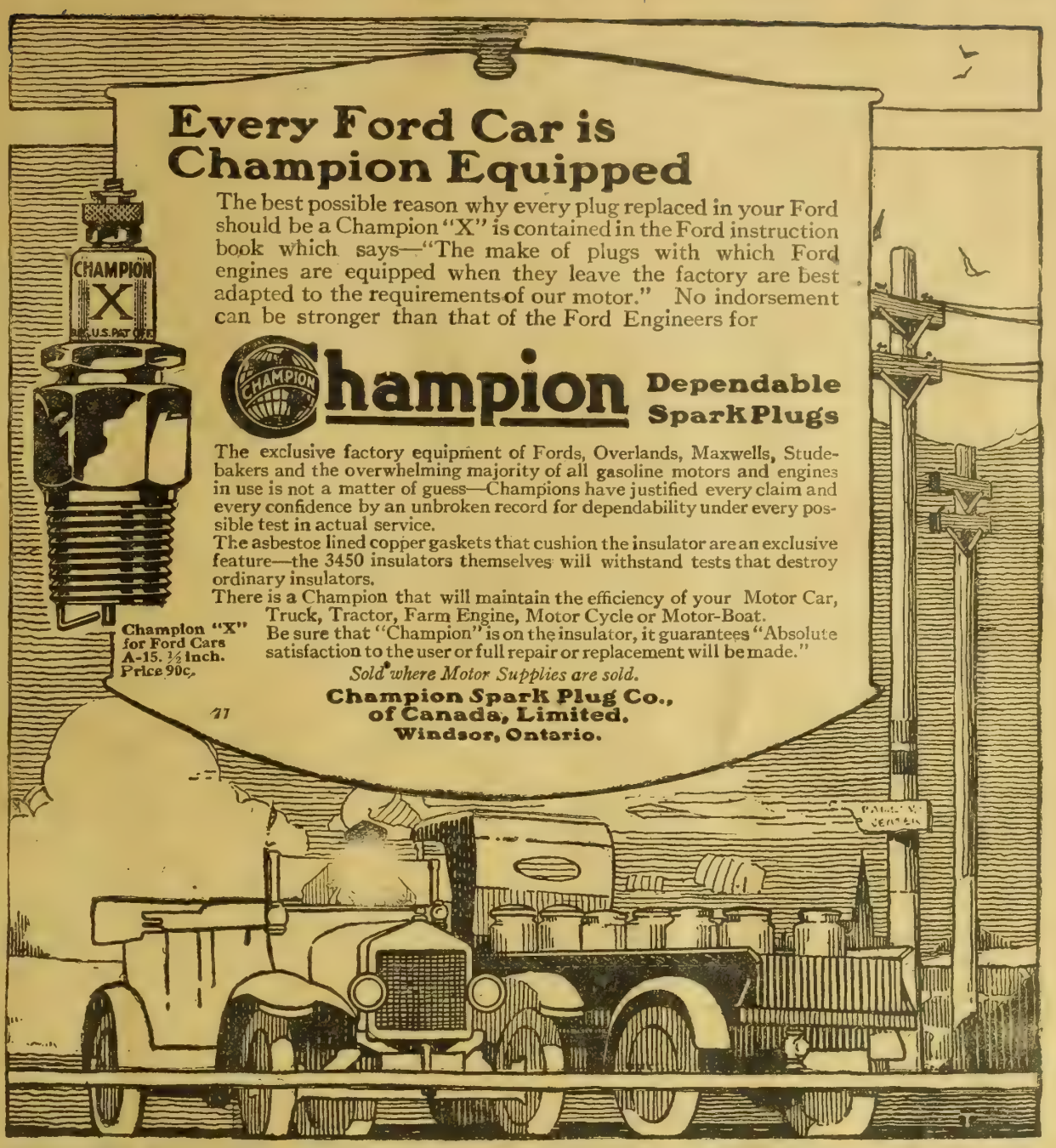
LUBRICATION OF MAGNETOS

T. W. L. asks What oiling does a magneto need?

Answer: As a rule, it only requires to have a few drops of light oil suplied to the two bearings of its armature shaft, once in each 500 miles or



so. There may be a few models which require ea drop of oil applied occasionally to the breakerbar bearings. You can obtain an instruction book from the maker of your magneto, which will inform you as to its lubrication requirements. Do not oil any other parts than those specified and keep all other parts free from oil and dirt. Oil tends to cause sluggish action in small, light parts which should work instantaneously and, when mixed with metal or carbon dust, may injure the insulation of the wire windings and cause short-circuits in the distrlbutor, that may result in interrupted or misdirected sparks. Too much oil aplied at the shaft bearings, may escape to other parts of the mechanism and cause trouble.


Every Ford Car is Champion Equipped
The best possible reason why every plug replaced in your Ford should be a Champion "X" is contained in the Ford instruction book which says—"The make of plugs with which Ford engines are equipped when they leave the factory are best adapted to the requirements of our motor." No indorsement can be stronger than that of the Ford Engineers for
Champion Dependable Spark Plugs
The exclusive factory equipment of Fords, Overlands, Maxwells, Studebakers and the overwhelming majority of all gasoline motors and engines in use is not a matter of guess—Champions have justified every claim and every confidence by an unbroken record for dependability under every possible test in actual service.
The asbestos lined copper gaskets that cushion the insulator are an exclusive feature—the 3450 insulators themselves will withstand tests that destroy ordinary insulators.
There is a Champion that will maintain the efficiency of your Motor Car, Truck, Tractor, Farm Engine, Motor Cycle or Motor-Boat.
Be sure that "Champion" is on the insulator, it guarantees "Absolute satisfaction to the user or full repair or replacement will be made."
Sold where Motor Supplies are sold.
Champion Spark Plug Co., of Canada, Limited.
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Champion "X" for Ford Cars A-15. ½ Inch. Price 90c.

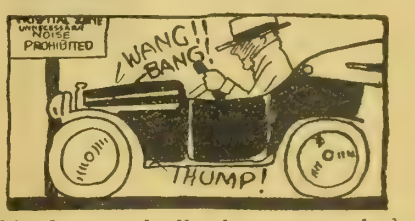
STARTER MOTOR FAILS TO ENGAGE

W. P. asks: What is the probable cause of my starter failing to turn the engine over? When I push the pedal, I hear a low humming but the engine does not move. There are teeth on the flywheel by which the engine should be set in motion.

Answer: It appears that your starter is of the type in which a pinion upon the electric motor shaft is caused to engage with the flywheel gear. Evidently this engagement does not take place. By watching the parts while someone else performs the starting operation you may find the trouble. In the starter drive in most common use the pinion is mounted upon a coarsely threaded sleeve upon the armature shaft and must move along the thread in order to engage the ring gear. If it turns with the threaded sleeve; it cannot move along it and sometimes dirt or grease upon the threads prevents it travelling into the engaging position. Sometimes also, through some abuse the screw threads become wedged in the pinion. If you find any such condition, free the pinion and wipe the thread perfectly clean and dry using kerosene to clean off all dirt and very likely you will not be troubled further.

ENGINE DEVELOPS HEAVY POUND

S. H. writes: I have lately had my car completely overhauled, the engine having been taken out and thoroughly gone over. After being put on the road again, it ran splendidly for several days and then I began to hear a slight pounding when the engine was running slowly and pulling heavily.



This has gradually become so bad that I am ashamed to operate the car. I have kept plenty of oil in the engine and do not see how a bearing could have burned out. Where should I look for this very heavy pound?

Answer: As you state that the engine has been dismounted from the chassis, it occurs to us as a possibility that, in replacing it, some of the bolts fastening it to the frame may not have been set up properly and have since gradually loosened, permitting the engine to vibrate upon its supports. If this hapens to be ean old engine with key-on flywheel, the wheel may have developed play on its shaft. If you find the engine fastenings all secure and the flywheel on

Auto Tires $17.50

Fine non-skid tire for small cars, size 30 x 3½, fully guaranteed for 3500 miles

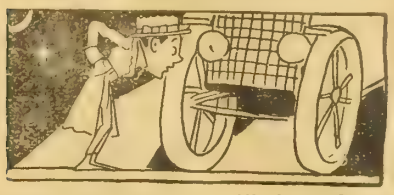
The Maritime Farmer begs to announce a substantial reduction in the price of non-skid tires for small cars, Fords, Chevrolets, Maxwells, etc. They are FIRSTS, fully guaranteed and we will sell them to you, provided you are a paid-up subscriber to the Maritime Farmer for $17.50 f. o. b. Sussex. Plain tires for $16.25, fully guaranteed for above mileage. Tubes for same size tire $2.90. These goods are all A1 stock and are made by a well known tire house. Of course these prices are for spot cash with order. The Maritime Farmer was able to take advantage of the recent break in the market and its large buying capacity to get you the benefit of this substantial cut in price. IT'S THE BEST BUY IN CANADA Today. Write the Auto Department, Maritime Farmer, Sussex, N. B.

tight, a loose crankshaft bearing is the most probable cause of the pound. Are you sure the cylinders are fast to the crank-case?

FORESTALLING SPRING BREAKAGE

L. E. W. writes: On my last trip, I broke a front spring, right at the center and had a hard time getting my car home. How can I guard against future breakage?

Answer: Avoid the use of springs with center bolts. The bolt hole constitutes a point of weakness. Take great pains to keep perfectly tight the clips that secure the spring to the axle. When this is done, the whole spring acts as a unit but, if it is not,



individual leaves are likely to be subjected to abnormal stresses, which they cannot sustain. Supply lubrication between the leaves. They necessarily slide one on the other when being deflected and, if this is prevented by their rusting together, excessive stresses are concentrated upon the outer ends of the leaves. Use a recoil strap or snubber to limit the recoil. While the chassis is moving downward the interleaf friction acts to limit the bending, but on the rebound, this friction is much reduced and under extreme conditions the leaves come largely out of contact, so that finally the upper leaf takes the whole stress and snaps. If a certain spring breaks more than once, it may be too weak for its purpose and another leaf should be added to it.

ELECTRICAL SHORT-CIRCUITS

Like People, Currents Seek "The Path of Least Resistance"

When, in an electric circuit, the current finds a path of flow that is shorter and "easier" than that which it was intended to follow and thus fails to pass through all the devices that it should operate, there is said to be a short-circuit. When flowing through a short-circuit or taking a "short cut," the current meets less obstruction (resistance) than its regular circuit offers and thus a greatly increased current may flow; so great in some instances, as to prevent other circuits from obtaining any current at all, to dangerously heat the wires through which it passes and to rapidly discharge the battery which supplies the electric system. The electrical devices, horn, lamps or ignition apparatus, in the deranged circuit, which are prevented from receiving current by the short-circuit, of course, fail to operate. Insulation, in the form of an air space, rubber, porcelain or some other material, is supposed to intervene between the two wires of a metallic circuit and between the single wire of a one wire circuit and the so-called "ground," which is the car frame, engine and other important metallic parts. When such insulation is abesnt, as by the chafing away of wire covering or by the coming into contact of metallic parts, a short-circuit is likely to occur. On some cars, each circuit is provided with a fuse, which melts and interrupts the current flow, when a short-circuit causes its volume to become abnormally large and others are fitted with automatic switches, which accomplish the same result. In the case of a car, so equipped, if the short-circuit is severe enough to cause the fuse or automatic circuit breaker to act it is at once apparent upon which circuit the trouble is, as the circuits usually all begin at a connection board, where the fuses or other protective devices are also located and the burned out fuse or the sprung circuit breaker is in the defective circuit. It then becomes necessary to locate the short-circuit and remove it. Suppose that one of the headlamp circuits is "shorted." If the battery is still charged and a test lamp is connected around the burned out fust, this lamp will remain lighted until the "short" is removed. With the test lamp lighted and the lighting switch "on," remove the head lamp bulb, remove its socket, move any loore parts of the wiring and generally examine the circuit. When the test lamp goes out, the "short" has been removed and, it only remains to restore the defective insualtion, the failure of which caused the trouble.

TROUBLE IN GEAR SHIFTING

A. F. asks: Why do the gears of my 1914-car shift so hard? The gears seem in first class condition and the cone-clutch appears to be in good order.

Answer: If it is merely that the operation of sliding the gears from one position to another is difficult, quite likely it is caused by lack of lubrication of the shifting mechanism. If you have the gearbox packed with hard grease, it sometimes happens that this collects around the outside of the case and leaves the working parts almost dry. If your trouble is that the gears cannot be brought into mesh without a great deal of clashing, the trouble probably is that the

clutch does not truly release and keeps the gears spinning or that the clutch brake, if one is used, does not stop the spinning of the clutch and gears as it ought to do. With the clutch and gears exposed to view and the lever in neutral, watch how the parts act, when the engine is running. If the clutch-cone and gears keeq on running, persistently, when the pedal is away forward, you will have to do something to stop this or clashing will result. Sometimes the use of a thick adhesive lubricant in the bearbox will tend to stop spinning, but you should have the clutch carefully examined to see if a cause for your trouble cannot be found there.

MARKETS.

Montreal, July 10—There was no further change in local prices for eggs today, but the undertone to the market continues strong under a steady increasing demand, and quite an active trade was reported in a wholesale jobbing way. There was also a good demand here for car lots of western eggs, and sales of seconds were made at 47c per dozen, f. o. b. Regina for shipment, and wires were received cancelling this figure for any more. The receipts today were 1,699 cases, as compared with 1,644 for the same day last week, and 737 for the corresponding date a year ago.

We quote wholesale jobbing prices as follows:

Strictly new laid eggs	00c to 60c
Selected stock	00c to 55c
No. 1 stock	00c to 50c
No. 2 stock	43c to 45c

A good steady trade continues to be done in dressed poultry for local consumption, and for shipment to outside points, and, in consequence, the market is fairly active, with no further change in prices to note. Supplies of fresh-killed and live poultry are steadily increasing and, in consequence, the demand for cold storage stock is not so keen as it was of late, but the movement of the latter is fair.

We quote wholesale prices of cold storage poultry, as follows:

Choice turkeys, per lb	48c to 50c
Milk-fed chickens	45c to 47c
Ordinary chickens	36c to 40c
Fowls, heavy	32c to 36c
Fowls, light	30c to 32c
Ducks, No. 1	45c to 48c
Ducks, No. 2	40c to 42c
Geese	30c to 31c

There were no further developments in the market for potatoes today, but the feeling is much better than it has been of late, and a fair trade in a wholesale jobbing way was done in old crop stock, with sales of good Green Mountains at $1.50, Quebec white stock at $1.25, and Manitoba stock at $1 per bag of 90 lbs. ex-store, while American new crop No. 1 Red Stars sold at $7, and No. 2 at $4 per barrel.

Chicago, July 18—Eggs, higher. Receipts, 20,138 cases. First, 41½c to 42c; ordinary firsts, 39c to 40c; at mark, cases included, 39½c to 41¼c; storage packed, firsts, 43½c to 44c.

New York, July 18.—Eggs, irregular. Receipts, 18,549 cases. Fresh gathered, extras, 51c to 53c; extra firsts, 47c to 50c; firsts, 43c to 46c; state, Pennsylvania and nearby western hennery, whites, fine to fancy, 58c to 62c; State, Pennsylvania and nearby hennery, whites, ordinary to prime, 45c to 58c; State, Pennsylvania asd nearby hennery, browns, 54c to 56c; do. gathered, browns and mixed colors, 50c to 53c.

CATTLE ACTIVE AT ADVANCED PRICES

July 18.—At the Montreal Stock Yards, West End Market, the receipts of live stock for the week ending July 12th, 1919, were 1,300 cattle, 1,700 sheep and lambs, 3,100 hogs, and 2,100 calves. The supply on the market today for sale consisted of 1,050 cattle, 1,400 sheep and lambs, 2,450 hogs, and 1,650 calves. Although the offerings of cattle were much larger than they have been of late the undertone to the market was stronger and prices were fully 25c to 50c per 100 lbs. higher than a week ago, which was due to the fact that frozen meat supplies have now been fairly well cleared out of the cold storage plants and, in consequence, there was a keener demand from packers for the best grades of cattle, which hesulted in a more active trade being done, and sales of straight loads of choice steers and heifers, weighing 1,150 to $1.200 lbs. each were made at $13.75 to $14.50, and good stock at $13.25 to $13.50, while choice lots of heavy cows sold at $12 to $12.50, and old ones of extra choice quality as high as $1[illegible] per 100 lbs. There was also a go[illegible] demand for the common grades [illegible] sales of bulls were made freely [illegible] from $6.50 to $8.50, and cows from [illegible] to $7 per 100 lbs.

The feature of the small meat tra[illegible] is the continued strong undertone [illegible] the market for hogs and, althou[illegible] prices showed no further advance [illegible] compared with those paid last We[illegible] nesday, the prospects were that th[illegible] would reach a still higher level in t[illegible] near future owing to the fact that s[illegible] plies throughout the country are fa[illegible] being depleted on account of the c[illegible] tinued keen demand from packe[illegible] The trade here today was brisk in [illegible] grades and sales of selected lots w[illegible] made freely at $24. extra heavies [illegible] $22 to $22.50, sows at $19, and st[illegible] at $17 per 100 lbs., weighed off c[illegible] Another feature of this market wa[illegible] the strength displayed in calves a[illegible] prices for good to choice lots ha[illegible] scored a sharp advance on accou[illegible] of the active demand for such and [illegible] somewhat limited offerings. Sales o[illegible] choice lots were made at $15 to $[illegible] good at [illegible] grades at from $7 to $10 per 100 l[illegible] In addition to the demand for ca[illegible] for local consumption, there is a[illegible] [illegible] shipment to the United States on [illegible] count of the much higher prices [illegible] ing in that market as compared w[illegible] those here. There was no furt[illegible] change in the condition of the mar[illegible] for lambs, but the undertone is e[illegible] on account of the fact that supp[illegible] coming forward are in excess of [illegible] local requirements, and there is no [illegible] mand from outside sources for t[illegible] at present. Sales of choice lots of [illegible] tario stock were made at $17 to $[illegible] and Quebec at $15 to $16 per 100 [illegible] The trade in sheep was qui[illegible] prices ruled easier at $7 to $9 per [illegible] lbs., as to quality.

At the Canadian Pacific Live St[illegible] Market the receipts for the w[illegible] ending July 12th were 700 cattle, 1[illegible] sheep and lambs, 1,850 hogs, and 1.[illegible] calves, while the offerings on the ma[illegible] ket today for sale amounted to 1.[illegible] cattle, 800 sheep and lambs, 1,300 h[illegible] and 700 calves. The trade in all line[illegible] at this market was also active, ther[illegible] being a good demand for supplies an[illegible] the tone of the market for cattle an[illegible] hogs was strong and calves sold [illegible] higher figures.

We quote prices as follows:

Steers, per 100 lbs.—		
Choice	$13.75 to	$14.[illegible]
Good	13.25 to	13.[illegible]
Fairly good	12.75 to	13.[illegible]
Fair	12.25 to	12.[illegible]
Medium	11.75 to	12.[illegible]
Light	11.00 to	11.[illegible]
Common	8.50 to	10.[illegible]
Cows—		
Choice, heavy	12.00 to	12.[illegible]
Choice, light	11.50 to	11.[illegible]
Good	11.00 to	11.[illegible]
Fair	10.50 to	10.[illegible]
Medium	9.00 to	10.[illegible]
Common	7.50 to	8.[illegible]
Canners	5.00 to	9.[illegible]
Bulls—		
Choice, heavy	11.50 to	12.[illegible]
Choice, light	11.00 to	11.[illegible]
Good	10.50 to	10.[illegible]
Fair	10.00 to	10.[illegible]
Medium	9.50 to	9.[illegible]
Common	8.50 to	9.[illegible]
Canners	6.50 to	7.[illegible]
Hogs—		
Selects	00.00 to	24.[illegible]
Heavies	00.00 to	22.[illegible]
Extra heavy	00.00 to	21.[illegible]
Sows	00.00 to	19.[illegible]
Stags	00.00 to	17.[illegible]

ANOTHER ADVANCE IN BUTTE[illegible] PRICES

Montreal, July 18.—The receipts [illegible] butter today were 722 packages, [illegible] compared with 3,341 for the same da[illegible] last week, and 354 for the correspon[illegible] ing date a year ago. In sympath[illegible] with the higher prices paid in th[illegible] country for creamery butter on Satu[illegible] day and the keener competition b[illegible] tween buyers for the offerings he[illegible]

today at the auction sale prices were advanced ⅞c to 1c per lb. as compared with those paid last Friday. On account of the above a stronger feeling developed in the open market and prices were also marked up with an increased demand for supplies, and a fair amount of business was done. In a jobbing way a steady trade was reported in finest creamery in 54c per lb. in solid packages, and at 55c in 1-lb. blocks, but these prices will be advanced 1c per lb. on Tuesday.

We quote wholesale jobbing prices as follows:

Pasteurized creamery...54½c to 54¾c
Finest creamery.....53½c to 53¾c
Fine creamery.....53c to 53¼c
Finest dairy.....48c to 49c

The receipts of cheese today were 9,510 boxes, as against 11,925 for the same day last week, and 8,940 for the corresponding date a year ago. The export of cheese for the week ending July 12th, were the largest of any previous week so far this season, there being 106,821 boxes shipped, which shows an increase of 2,561 boxes as compared with last week. There was no further change in prices for cheese at the auction sale held today owing to the fact that the demand for the offerings was entirely from the local packing concerns, exporters not being in the market.

MILLFEED AND ROLLED OATS

Montreal, July 18.—There was no change in the condition of the market for millfeed, prices being firm, with a steady trade passing for the season of the year in most lines, and sales of broken lots of bran in mixed cars were made at $43 to $43.50, shorts at $45.50 to $46, pure barley meal and mixed grain moullie at $62 to $64, mixed moullie at $56 to $58, dairy feed at $48, and oat middlings at $44 per ton, including bags, delivered to the trade, while car lots of bran were quoted at $42, and shorts at $44 per ton, including bags, ex-track. On account of the strength displayed in the market for oats of late a stronger feeling has developed in the market for rolled oats, and prices have been advanced, with sales of standard grades to wholesale dealers at $4.50 per bag of 90 lbs., and to retail dealers at $4.75, delivered to the trade. There was no change in cornmeal prices, but they are very firm at $5.25 to $5.35 per bag.

THE BALED HAY MARKET

Montreal, July 19.—There were no new developments in the market for baled hay, but the feeling continues easy on account of the fact that supplies coming forward are ample to meet all immediate requirements, and the prospects are for a bumper crop, which is a bearish factor. The trade is fair, with sales of car lots of good No. 2 timothy hay at $30, No. 3 timothy hay at $28 and clover and clover mixed hay at $25 per ton, ex-track.

Utica, N. Y., July 14.—At the session of the Utica Dairy Board of Trade today, the total sales of cheese were 2,490 boxes, all selling at 30½c.

New York, July 14.—Butter, steady. Receipts, 15,314 tubs. Creamery, higher than extras, 54¼c to 55c; creamery, extras, 92 score, 53½c to 54c; firsts, 51c to 53c; packing stock, current make, No. 2, 45c. Cheese, firm. Receipts, 3,211 boxes. State, whole milk, flats, current make, specials, 32¼c to 32¾c; average run, 31¼c to 32c; State, whole milk, twins, current make, specials, 32¾c; average run, 31¾c.

Belleville, July 14.—At the regular meeting of the Cheese Board 595 boxes of white were offered. All sold at 29c.

CLOVER SOD BEST FOR GOOD CORN CROP

Ideal soil conditions for the corn crop are represented by a well-drained, medium loam plentifully provided with decayed vegetable matter (humus). That the successful growth of corn is closeyl associated with abundant soil humus will be clearly apparent on a brief consideration of its functions as related to the needs of corn.

Humus is the most important soil constituent and imparts that highly desirable, mellow physical condition, denoting warmth and life, to both light (sandy) and heavy (clay) soils. The practice of manuring is based on this fact. Humus is the medium which supports the favorable bacterial life of the soil and is the chief source of the valuable nitrogen which these organisms release—along with the mineral constituents of humus—for the nourishment of the growing crop. Furthermore, the acids produced during the decomposition of humus exert a solvent action on the mineral soil compounds, liberating phosphoric acid, potash, etc., in assimilable forms. Humus acts like a sponge absorbing and retaining moisture; it is the upper-soil reservoir of water which it yields up gradually to the feeding roots and will thus enable a corn crop to withstand or more rapidly recover from the effect of a prolonged period of drought.

For its favorable germination, corn demands a warm seed bed, and to lack of this essential condition many failures are due. Corn makes a rapid, succulent growth and—like all leafy crops—imbibes and transpires water freely, requiring therewith a bountiful supply of nitrogen and mineral for the building up of its tissues.

A good crop of red clover (cut for hay) is an ideal forerunner of corn; the decaying residues of clover stems, leaves and roots furnish a large amount of humus rich in nitrogen. Clover, alfalfa and other legumes possess the unique faculty of assimilating atmospheric nitrogen and thus of enriching the soil in that valuable element. Furthermore, their deeply ramifying roots draw mineral plant food, in solution, from the subsoil, and, in their subsequent decay, liberate this mineral matter in zones accessible to the roots of corn.

A sod carrying a heavy aftermath of clover or alfalfa may furnish such an abundance of humus-forming material as to dispense with the necessity for the addition of barnyard manure.

According to experiments conducted at the Central Experimental Farm, a vigorous crop of clover contains, in its foliage and roots, from 100 to 150 pounds of nitrogen, 30 to 40 pounds of phosphoric acid, and 85 to 115 pounds of potash per acre—approximately equal, in fertilizing value, to ten tons of good barnyard manure. Further investigations showed that the roots, dead stems and leaves (the clover residues ordinarily remaining after removing the crop), collected immediately before spring ploughing, contained from 60 to 80 pounds of nitrogen, 20 to 30 pounds of phosphoric acid, and 50 to 70 pounds of potash per acre or the approximate equivalent, in fertilizing value, of six tons of the best barnyard manure.

THE IMPROVEMENT OF TOMATOES BY SELECTION

Importance of good seed.—In all northern districts, where the season is barely long enough for a heat-loving plant such as the tomato, trueness to name is a very important consideration, because most fruits will not mature and the grower will lose his time if, accidentally or otherwise, seed of a late variety is sold for that of an early one.

Some commercial seed unreliable—A great many of the best growers now save their own seed, as they know that there are large quantities on the market which come from canning and catsup factories where it is cheaply separated by machines. The mere fact that most seedsmen will not guarantee what they sell shows that the commercial article cannot very well be relied upon.

What to select for—First of all, it must be remembered that tomatoes cross, so that only one variety can be grown. Theoretically, a person should select tomatoes for extreme earliness, great productiveness, bright red colour, large size and high quality. But, as there is no such thing as an all-round perfect strain, it is better, in practice, to breed for one thing at a time. It is also no use to work for contradictory attributes; for instance, when the size of fruits is larger there are generally fewer in a cluster, though the total yield may be greater.

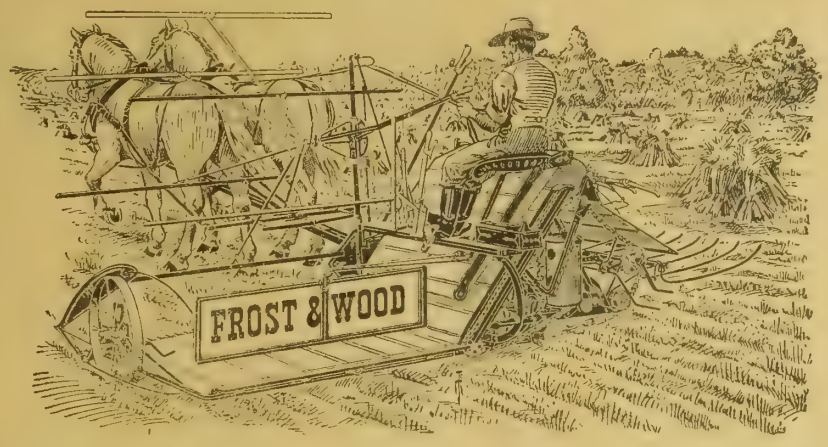
Plant and not fruit is the unit.—It should always be remembered that attention must be directed towards the whole plant and not only to a part of it. Thus, it is a mistake, in selecting for earliness, to save seed from a plant which bore one very early fruit whilst the others were rather late in maturing; what should be done is to save seed from a plant having the largest number of fruits maturing early enough for tre locality where grown.

Work Done at Cap Rouge.—A few strains were isolated at Cap Rouge, for yield, in certain cases, and for earliness, in others. A selection of Prosperity from Bolgiano 1914 stock produced 20% more in 1917, after three years' work, than seed bought from this firm that year; a selection of "Sunnybrook" Earliana from Burpee 1914 stock produced 46% more in 1917, after three years' work, than seed bought from this firm that year; a selection of Danish Export from Wiboltt 1914 stock matured fruit in 135 days, in 1915, whilst seed from this firm took 140 days; a selection of Bonney Best from Harris 1911 stock matured fruit in 163 days, in 1913, whilst seed from this firm took 167 days.

Free distribution to interested parties.—Strains of Earliana have been specially selected at the Experimental Station, Cap Rouge, Que., since 1911, and a limited quantity of choice seed is distributed free to interested parties who apply to the undersigned.—Gus. Langelier, Supt. Experimental Station, Cap Rouge, Que.

It Guarantees the Harvest

You have only a few precious days in which to cut and stock your crop so your whole year's work may well depend on the reliability of your Binder. That's why wise farmers buy the



FROST & WOOD BINDER

It has won a reputation, during many years, and under all kinds of Canadian crop conditions as "the Binder that is always ready—and able to get ALL the crop." It's "ready" because its simple, superior scientific design and its high grade materials keep it out of the repair shop—and it "gets all the crop" because it is so easy to operate that fast, clean work is always possible with it.

LIGHT DRAFT - SURE CUTTING AND TYING - DEPENDABILITY

Its big power wheel and strongly braced steel frame ensure ample strength—high grade roller bearings at all friction points ensure light draft—a wide range of adjustments of the reel ensures that any crop, heavy or light, lodged or straight, is easily handled. Big capacity elevators and positive binding attachment, all show the hand of the master designer. Get a Frost & Wood Binder Booklet from our nearest agent—and see the Binder itself—you'll see why it "Guarantees the Harvest."

THE FROST & WOOD COMPANY, LIMITED

Truro, N. S. ST. JOHN, N. B. Charlottetown, P. E. I.

WHEN BALKY HORSE FORGETS THE HABIT

I would like some information regarding the training of a balky horse. At times my horse is eager to go, but at other times she will throw her head from side to side and not start.

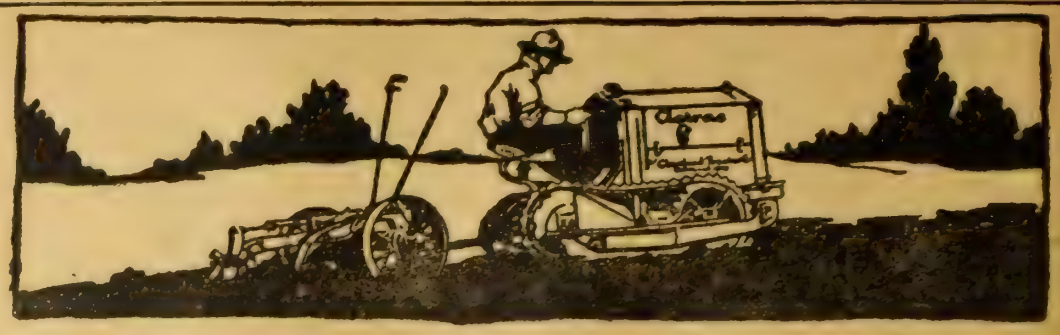
There is no sure cure for a balky horse, and one which has acquired the habit to a bad degree will likely never get over it. A balky horse should never be overloaded and the harness should always be properly fitted. The horse also should not be expected to work too long. The only way to overcome the balkiness is to give the animal no reason to balk for a long period of time, in which case he may entirely forget the bad habit. Various humane and inhunmane devices are practiced in getting a balky horse to move. We believe that none of the inhumane devices should be used. A balky horse will often start if the driver stops and readjusts the harness, picks up the feet or performs any other little act which is likely to distract the animial's attention and make him think that the driver is not acquainted with his cause for stopping.

WHAT'S A PEDIGREE?

Peedigree is a record showing the animals that have in succession entered into the breeding of the individual. It shows, too, that the animal belongs to a distinct breed, possessing, therefore, the prepotency of that breed, and in addition to this possession it guaranteees a certain degree of individual prepotency dependent upon the excellence and known prepotency of the ancestors on each side of the pedigreee. To insure both breed — prepotency and indiividual prepotency—the animal should have several recorded animals upon the dam's side, and the more and better the more certain will be the good breeding qualifications of the pedigreed animal.

The sires should be of equal merit, and the most important point is to see that they are of known purity of blood and individual excellence; also that upon neither side is there an objectionable outcross or the presence of a sire or dam noted for unsoundness or other objectionable trait, character or feature. Furthermore the character of the man back of the pedigree should be taken into account. The pedigree is comparatively valueless unless the breeder and seller are noted for integrity; nor is a pedigree a sufficient criterion of merit or an apology for individual imperfection or unsoundness. The animal should be a good individual, and if, in adition, there is a long line of excellent ancestors upon both sides of its pedigree, there will be good reason to expect that it will, with considerable fidelity, transmiit to its progeny the true characteristics of its breed, those of its family and those of its individuality.

In some instances an individual with a long line of reputable ancestors is itself a comparatively poor individual, yet may prove an impressive sire, or dam, and, on general principles, the somewhat different individual that has a fine line of ancestors, as shown by its pedigree, is greatly to be preferred to a scrub, grade or cross-bred animal for breeding purposes. We say this for the good reason that the progeny will be likely to partake of the good qualities of the ancestry rather than the indifferent qualities of the individual. There are many exceptions to this rule, and experiment is, therefore, the sure way of proving the prepotency of the individual. It is always best, however, to choose an animal that has both excellent breeding and individual excellence of form and quality in every respect.—S. Alexander, V.S.



An Acre an Hour

From every part of Canada come letters of praise for the Cletrac Tank-type Tractor.

Here is the experience of Wesley Walden, of Lindsay, Ont.

In direct competition with his two sons, each with a three-horse team, he plowed two acres to their one.

Plowed when all neighbors had stopped because of rain.

Never mired the Cletrac in the softest ground.

Fits his seed-beds without a horse.

Uses his Cletrac right through harvest and winter.

He says, "I have my farms in the best shape I ever had them, thanks to the Cletrac Tractor."

You should know more about this economical, powerful, 100% useful farm machine. The Cletrac dealer, or we ourselves, will be glad to send you our book, "Our Owners Say," containing Mr. Walden's letter and many others. Write for it to-day.

The Cleveland Tractor Co. of Canada
Windsor, Ont. **Limited**

Digby, N.S.

Cyrus & Manning Ells, Port Williams, N.S.

Gentlemen,—I take great pleasure in answering your letter of the 20th re Cletrac Tank-type Tractor. I have one, and in fact the first one in the Province. It was demonstrated at Truro in competition with the ——— Tractor, and I had the privilege of buying either one or both, but decided on the Cletrac. We have been called upon to give more demonstrations with this machine than anything else I ever owned. To my mind, it is as much ahead of the ——— Tractor, as the ——— car is ahead of the ——— car.

The Cleveland makers are the best people to give service of any concern I know of putting out machinery. This of itself is a strong incentive to one buying. There are many things you can do with a Cletrac, that you cannot do with a ———. It has the best running motor you ever saw.

While I am holding out some strong inducements for the Cletrac do not think I am interested in any way.

If I have omitted any information you would like to have, I would be glad to communicate with you further.

Yours truly,

(Signed) H. T. Warne.

Cletrac
TANK-TYPE TRACTOR

R. O. P. STANDARD HAS CHANGED NEW AMOUNTS REQUIRED IN ORDER TO QUALIFY FOR A CERTIFICATE

At the last annual meeting of the Holstein-Frieisian Association a motion was passed to raise the standard of qualification in the Record of Performance to at least 400 pounds of fat for a mature cow, with the same rate of increase between the standard for a two-year-old and a mature cow as under the former rules The original rules provided for a daily increase in the amount of fat required of .0931 pounds and of milk 2.75 pounds with a standard fat percentage of 3.40. In other words, a four-year-old was required to produce 34 pounds less fat than a mature cow, a three-year-old 34 pounds less than a four-year-old, and a two-year-old 34 pounds less than a three-year-old. Retaining the same ratio of increase in fat and milk, and keeping the standard percentage of fat at 3.40, it was found advisable that the yearly production of milk be maintained in round numbers for convenience in calculation. Accordingly all cows entered in the Record of Performance after April 30, 1919, will be required to reach both the following amounts in order to qualify for a certificate.

Class	Milk lbs.	Fat lbs.
Mature	12,000	408
Four-year-old	11,000	374
Three-year-old	10,000	340
Two-year-old	9,000	306

WHY SOME FAVOR WINTER DAIRYING

When the cows freshen in the winter there is more time for milking and caring for the calves. The milk brings the best price and the income is often needed more during the winter than in the summer when more money is constantly coming in for the varied crops and produce that can be sold. On some farms there is a steady income from produce from the time the asparagus and early truck are sold until the last apple is picked in the fall. From November 1 until April the income from a few dairy cows is much appreciated and it has often brought a family many pleasures which would have been impossible if it were not for the money received from the cows.

MILK PRICES IN SCOTLAND

Fixed prices and some measure of control still exist in Scotland in regard to the sale and distribution of milk. The prices for the five months —May to September—have now been announced, and they work out at an average of 36c per gallon. This price is regarded as moderately satisfactory. The prices could not be made further ahead than September, pending the determination of future policy in respect of control. One cent a gallon less is paid the farmer who delivers the milk without it being cooled.

The reason for giving a bigger price for August and September is obvious. It wil ltend to encourage the fixing up of such arangements as will provide for a greater flow of milk for the winter months.

CREAM COOLING TANKS

We like the idea in Iowa, as expressed in the "Cream Improvement oCntest" and carried on by the Buttermakers Association of that State. One hundred dolars was voted by the Association as a "starter" for the fund. The main points are expressed in a scale—"15 points for a milk-house; 10 points for cooling tank; and 10 points for moving the separator from unsanitary to sanitary places." It is claimed, "the cooling tank will eliminate practically all cellar or food flavors." How would it do to inaugurate a cooling-tank campaign among the patrons of Canadian creameries for the season of 1919?—H. H. D.

The dairy cow has a nervous temperament which is eeasily disturbed by unusual onises in the barn such as barking dogs or unnecessary shouting among men. It pays to be quiet around the cattle, as everything disturbing them helps to reduce the milk flow and cuts down the dafry products.

Whether or not a man can make his dairy pay depends wholly upon the attention he pays to the cows.

Now comes an inventive chap who says that the vacuum cleaner is just the thing when a thorough horse cleaning is desired. Whoa there, Dobbin!

OILING THE AUTO

Correct lubrication of a car has perhaps more to do with its long life and successful operation than any other thing. eRpairmen will often tell you that many of the motor ills are due to improper or insufficient lubrication that might have been prevented had a study been made of the oiling chart and the oil applied and renewed at regular periods.

It is an excellent plan to change the oil in the motor several times during th eseason. Constant use at a very high temperature causes the oil to become too thin for correct lubrication. Friction causes minute particles of metal to be broken or worn off and the old oil contains this injurious material. The oil in the crank case should be drained and a gallon or so of kerosene put in the rersevoir. The motor should now be run slowly for three or four minutes thoroughly flushing the motor. The kerosene when drained off will be very black showing the impurities it contains. The fresh oil that you put in will stay clear and clean for some time.

Your oiling chart will tell you which parts require lubrication every 100, 500 or 1000 miles. These instructions should be carefully carried out in order to prevent friction and prevent avoidable wear. The grease cups should be carefully cleaned off when filled so that no dust or dirt gets in the grease or the greasing will do little good. Always see that the motor is well supplied with lubricating oil. The absence of oil may cause the motor to overheat or even stop.

Only the best oils and greases should be used in a car. Cheap oil may not be able to withstand the high temperature and become too thin to lubricate well. Also poor oil may break up under the heat and cause carbo ndeposits thus causing motor trouble. The best greases are necessary to prevent wearing the gears in the transmission and the rear axle. Graphite or a mixture of graphite and oil can be used on the springs when needed.

For the magneto several drops of the highest grade sewing machine oil would be suitable. It should be applied one or twice a month. The clutch, fan and parts that are in continual use will require attention frequently.

If the car owner desires his car to be long lived and run smoothly and quietly it will pay him to study the oiling diagram for his car and follow the instructions carefully.

CUTWORMS

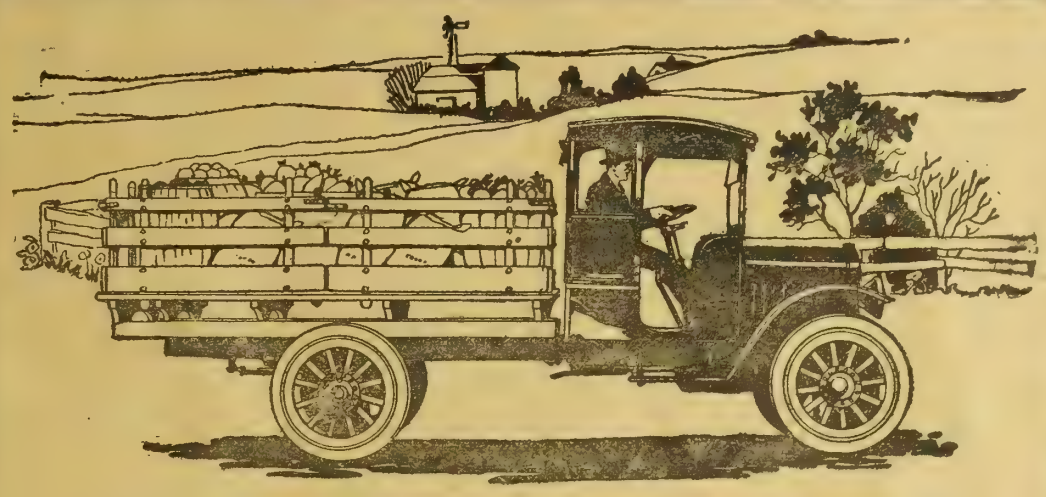
By A. J. Gorham, B. Sc.

Cutworms are doing a great deal of damage this year, to corn, cabbage, beans and other crops. These pests do their destructive work at night. They are the larvae of Owlet-moths. There are a great many different kinds of cutworms. Their life history is as follows: The moths lay their eggs during mid-summer. The larvae soon hatch, and feed upon the roots and tender shoots of herbaccous plants. At this time, as the larvae are small and their food is abundant, they are rarely observed. On the approach of cold weather they bury themselves in the ground and there pass the winter. In the spring the renew their attack on vegetation. But now as they are larger and in cultivated fields the plants are smaller, their ravages quickly attract attention. They have the unfortunate habit of cutting off the young plants at the surface of the ground and thus destroy much more than they consume.

Remedies: Poisoned baits of fresh clover or other green vegetation. Probably the best remedy is Poisoned Bran Mash. Take ten pounds bran, add enough water to make soft mash, spread out on table in thin layer, sprinkle on this about three ounces of Paris Green, add this in small lots, spreading out, mixing and re-mixing until all the poison is thoroughly distributed through teh bran mash. To this may be added a little molasses and the juice of a lemon or orange. This makes it more tasty.

Toward evening sprinkle this mash along the rows or around the plant. Look for dead cutworms in morning.

The 2temptation is great on the farm to get just as much work out of the brood mare whe she has a foal as is possible, and is all right to do so if the owner uses just a little bit of judgment when to let the foal suckle and when not to do so.



This Maxwell Truck Will Give You More Land More Money, More Time

A MAXWELL truck will go farther, do more than six good horses—in less time. And it costs no more. It feeds only when it earns. It defies weather. It is always on the job—ready to haul anything from 50 bushels of grain to 3,000 pounds of potatoes—anywhere, any distance.

It takes 5 acres to feed a good horse. Thirty acres to feed 6 horses. The wheat you can raise on 30 acres of land will pay for a Maxwell Truck—now.

Those 30 acres are then free to make money for you. And your Maxwell Truck will make money for you. It will enable you to market your crop quickly—in the best market—at the best price.

It will save you hours—days—of valuable time. It will make your work easier, pleasanter, more profitable.

Travels faster than heavier trucks. Yet it is big enough to handle 90 per cent of all hauling jobs.

Has the same type of worm drive which $7,000 trucks advertise as their great feature. $7,000 truck construction and sold with a $7,000 truck guarantee. 10-foot loading space. Power enough to pull a wagon when truck and wagon are fully loaded. Electric lights and generator. Chassis $1,550, f.o.b. Windsor, Ont.

See your nearest dealer. If you don't know him write and we'll tell you.

P.S.—You can get Maxwell service wherever you are.

Maxwell

More miles per Gallon
More miles on tires

MAXWELL MOTOR CO. OF CANADA. Limited, WINDSOR, Ont.

COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep

Orders now booked for EWE and RAM LAMBS for fall delivery, several extra good animals for sale out of Ewes clipping 10 to 12 lbs. and sired by an Imported Ram weighing about 400 lbs. with a clip of 18 lbs.

BREED LEICESTERS the Sheep with THE HEAVY FLEECE.

G. C. Cossar, Proprietor. J. Meiklejohn, Agent.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm
OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired by Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

Clearing Sale of Shorthorn Cattle

Am offering for sale my herd of pure bred registered Shorthorn cattle. These cattle range in age from 7 years to 3 years, or a little less, with one bull calf two weeks old, and are all fine in type and color.

I have also exceptionally good grade cattle of various ages for sale. All will be sold at a reasonable price and offer an unusual opportunity to anyone desiring to start a herd of choice stock or to renew an old herd.

J. E. HETHERINGTON, - Codys, N. B.

FOR SALE !

Two excellent Guernsey bulls from good stock, will be sold reasonable if taken at once.

SARAH E. M. SMITH,
Woodwards Cove, Grand Manan, N. B.

FOR SALE
R. O. P. HOLSTEINS.

Two bulls ready for service, and several bull calves. The right type and prices right.

For description and price write,

D. R. NICHOLSON,
"Riverview Farm", Coxheath, N. S.

FIRSHADE FARM
DUAL PURPOSE SHORTHORNS
Present Offering:—Two Bull Calves

No. 1.—Son of Daisy Lodge, R. O. P. 21,638 lbs. milk, 480 lbs. fat. This cow led the four-year-old class in the Canadian Record of Performance.

No. 2.—Son of Queen Charlotte. She as a two-year-old has a R. O. P. of 7224 lbs. milk, 316 lbs. fat. This cow stands eighth in milk and sixth in fat production in the two-year old class.

The sire of these calves is Nivelle, whose dam as a two-year-old has a R. O. P. of 5496 lbs. of milk, 240 lbs. fat in 295 days.

P. R. L. FAIRWEATHER, Rothesay, N.B

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

TILE-DRAIN YOUR LAND. IT PAYS

On the Illustration Station at Stanbridge East, which Station is owned and operated by Mr. Charles S. Moore, very interesting and profitable results have been obtained. At this Station, two four-year rotations are being carried out, one on land which is fairly well tile-drained, teh other on land odjoining, with good surface drainage, only narrow lands being ploughed and the furrows kept clear. The soil is similar in character on both areas.

In 1918, Banner oats were sown on both fields. Those sown on the tile-drained land were sown much earlier than those on the undrained land and yielded 55 bushels per acre, costing 36¾c per bushel.

The surface drained land could not be worked nor sown until several days later and yielded 21 bushels per acre, costing 74¾c per bushel, a difference of 34 bushels per acre. The highest yield is low compared to what may be expected after the drained land is cultivated a few times and the drains have been working to the best advantage.

Results

The tile-drained laid yielded 55 bu. per acre, costing	$20.21
If sold at $1.00 per bus	55.00
Balance, profit	$34.79
The undrained land yielded 21 bushels per acre, costing	$15.70
If sold at $1.00 per bushels	21.00
Balance, profit	$5.30
It will here be seen that tile-drained land gave a greater profit of	$29.49

A good time to put in tile drains is as soon as the hay harvest is over.

JOHN FIXTER,
Division of Illustration Stations,
Central Experimental Farm,
Ottawa, Ont.

A VERY VALUABLE BOOK

The Veterinarian, by Charles J. Korinck, V. S., is a work on the afflictions of horses, cattle, sheep, swine, poultry, etc., which every farmer should have in his home. The story of how treatment can best be administered is told in simple every-day English that any person can understand. The methods suggested by Prof. Korinek are simple and easily followed. The book will cost you seventy-five cents, postage paid. It may be the means of saving you as many dollars in the near future. How many men are there who meet trouble by writing to the Maritime Farmer or some other paper for information which will be found in the Veterinarian? It is strongly bound in cloth, has serviceable illustrations and is well indexed. Seventy-five cents will bring it to you.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM
Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

Bloomfield Stock Farm

Clydedales horses, Ayrshire and Guernsey cattle, Shropshire sheep.
Present offering: 1 imported Pure Bred mare.

J. ROBIE MacDONALD,
Shubenacadie, - - Nova Scotia
Successor to J. MacDonald & Son

FOR SALE !

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st, 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and 1st in grade cow, competing against all breeds at our late show at Charlottetown, with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

Present offering: one bull two years old, two aged seventeen months. Also a number of younger ones. Females any age. This herd is bred for production having the combined strain of "Jean Armour" and "White Heather"

J. FRANK ROACH, Proprietor,
Phone 111. - - - - Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.

We have young bulls for sale whose two nearest dams (both Canadian champions) average as high as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows: and one ready for service from a 41-lb. sire and an 18,000-lb two-year-old dam. Send for our BOOK OF BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT

BELLEVUE STOCK FARM
Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, HAMMOND RIVER, N. B.

We are offering for sale calves of both sexes, sired by Dutchland Pieterje Count, a bull of splendid size and type, whose four nearest dams have records averaging 28.61 pounds of butter in seven days. His dam is a daughter of Colantha Johanna Lad, who has 101 A. R. O. daughters, 4 over 32 lbs., 7 over 30 lbs., three of them world's records for 365 days. If you want something choice, come and see these calves or write for further particulars.

We will also book orders for young Yorkshire pigs for next spring's delivery.

WM. S. HARDING, Prop.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

We have sold 13 head in the last few weeks but there are some dandy good ones left yet. Special offering—2 heifer calves and several bull calves, sired by Prince Colantha's Canary B. whose four nearest dams average 32.84 lbs. butter in 7 days; 105 lbs. milk in one day. These are beauties. A couple of yearlings and two-year-old heifers, bred to Prince, due in the fall. Several young cows and heifers milking, due to calve from August to December. We have a couple of bull calves fit to head the best herds in the provinces. Come and see them. We would be pleased to meet you at Truro if notified.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

BULL'S CREEK FARM

R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lbs. butter each in seven days. These cows have in turn been bred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkable combination of breeding and will sell a heifer calf or two. Get your orders in quick, they won't be here long.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

FOR SALE !

Ayrshire bulls, eleven to fourteen months. R. O. P. ancestors and best of breeding.

A. A. H. MARGISON
EAST CENTREVILLE - - N. B.

Five Ayrshire Bulls for Sale !

From good milking strain. All fit for service.

Prescott Blanchard,
Truro - Nova Scotia

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 24. SUSSEX, NEW BRUNSWICK, AUGUST, 5 1919. Number 21.

Spray Pink and Green Potato Aphids

Aphids are Capable of Very Rapid reproduction---Rose Bushes are Host Plants--How to Make and Apply Spray

By Edith M. Patch, Entomologist, Maine Agricultural Experiment Station

The Green Potato Aphid has been doing considerable damage to the potato crop in Maine durinig the last two or three years and has been gaining a foothold in New Brunswicw. Our readers will be interested in the following article from the columns of the Potato Magazine, the official organ of the Potato Association of America:

Throught wide publicity given, for economic reasons, to the "white pine blister disease" and "the black stem rust of wheat" we are all familiar with the fact that the one migrates between white pine and currants or gooseberries and the other between the common barberry and certain grains. That the life cycles of many aphids include an alternated diet with reference to different stages of their development which is comparable to that of such fungius diseases is, perhaps, not so well knonw.

The migratory habits of many of our most serious pests among the plantlice, however, have to be taken into consideration with refernce to an understanding of their economic status; for it sometimes happens that a species con be controlled on one plant and thus its attack on the alternate food plant prevented. Or, on the other hand, this same habit of migration may double the difficulties in handling the situation.

The pink and green aphid of potato, which seriously infested fields all the way from the Atlantic coast to the Mississippi valley in 1917 and 1918, is a migrant species.

This insect passees the winter in the egg on rose bushes. The aphid which hatches from the egg in the spring is commonly spoken of as the "stem mother," a wingless form which upon maturity, gives birth to living young, the egg being represented but once in the many generations of the annual life cycle of the species—that is the hibernating stage already mentioned. The progeny of the stem mother are all females which in turn give birth to female generations. Most of these consiist of part winged and part wingles sindividuals. During the spring these develop upon the tender shoots and leaves of the rose, both wild and cultivated varietiies.

Watch Now for Aphids

About the middle of July in Northern Maine, a few scattered aphids may be found upon the potato vines which previous to that time were uninfested. These are the first of the migrants to appear on this plant and are fully mature and ready to produce young. In Connecticut this migration occurs at least a full month earlier and it is recorded for southwestern Ohio early in June.

These first individuals to settle upon the potatoes in small numbers here and there are an inconspicuous factor in the history of the infestation. These little objects, measuring approximately ⅛ of an inch, seeking the under surface of the leaf or resting quietly upon the tender growing shoots, would neitiher by their presence nor the direct injury they do be anything to distrub the most watchful potato grower. But though these migrants are inconspicuous and the amount of sap they drink inconsiderable, they are not for all that an insignificant item in the season's potato crop. To illustrate, an observation made in Ohio might be cited. A single aphid this species was caged on an uninfested plant, and at the end of 12 days her progeny (daughters and granddaughters) totaled 76, five of which were already producing young, it requiring under Ohio climatic conditions only about 10 days for one of these females to become full grown and begin producing.

The pink and green aphid is a restless species, the females upon becoming mature showing a marked tendency to move from the plant on which they developed to stems not yet crowded with the pest and in healthier condition, before establishing their colonies of young. Both the winged and wingless forms exhibit this habit so that, by dispersal, the area of infestation soon widens to include plants not touched by the early migrants, a process carried much further by the winged forms than the wingless, the latter of course being restricted to plants within their easy walking diistance.

By the middle of September in Maine, and several weeks earlier farther south where the infestation gets an earlier start, the potato vines are as free from aphids as they were before the spring migration. To illustrate what has happened to the potato crop before the fall migration, however, the following quotation from the report of the State Entomologist of Connecticut for year 1917 might be cited.

"Apparently this infestation seriously checked the crop; the tubers were arrested in theiri development and a very small yield resulted. In a field at the Station farm at Mt, Carmel, the vines were large and vigorous and promised a good crop; but this field was heavily infested with aphids in July, and though sprayed and most of the aphids killed, the plants did not recover and died in a few days. The yield was very small, some portions of the field being hardly worth digging."

It is not an easy matter in most instances to ascertain how much of the injury concerned in an aphid infestation is due to the direct damage done by these countless minute insects each with its sharp beak plunged into the tissues of the plant and sucking sap incessantly for the duration of its life; and how much may be involved with early blight and other fungous diseases whose access to the plant is made easy by the innumerable wounds laid open by the greedy aphids. Both factors doubtless often function simultaneously, their co-operation working disaster to the potato crop.

It is always well to bear in mind concerning the injury inflicted by any plantlouse that so many elements of uncertainty enter into the career of these insects that it is quite impossible to predict whether such a pest is likely to trouble us for two or many consecutive years or succumb to some adverse condition and practically disappear for a long time.

The weather, for instance, plays an important part in the welfare of aphids, heavy rains washing the tender forms from the plants, cold days retarding the rate of their increase, while on the other hand, excessive heat hastening the development of the aphids as well as otherwise interfering with the normal growth of the plant.

Certain climatic conditions are favorable to fungous parasitism which may sweep out the plantlice from a large area in a few days' time. Then, too, in some seasons, predaceous and parasitic insects appear in numbers sufficient to render any artificial remedial measures superfluous.

Remedial Measures Discussed

A clear cut recommendation regarding remedial measures for the pink and green potato aphid is at present impossible to formulate so that it will apply definitely and equally to all localities and conditions of infestation.

If, as in the case with the "black stem rust of wheat," this insect proves to have but a single overwintering host plant there might be good reason for recommending an extermination of, or compulsory fall and spring spraying of, rose bushes in the vicinity of large industrial potato areas as the only means of control necessary to keep the pink and green aphid in check. But, though in Maine the rose is by all odds the favorite goal of the fall migrants and the plant upon which develop the sex forms of the aphid and which suplies the nesting site for the over-wintering egg from whch the stem mother hatches in the spring; it is by no means certaini that the rose is an absolute necessity to the life cycle of this insect in all localities. There is no doubt, however, that the potato grower who encourages a roadside growth of unsprayed wild roses in the vicinity of his fields and neglects to apply an aphid spray spring and fall to his cultivated roses is thereby providing the most suitable propagating site for an insect whose reputation for damage may be summed up in its Ohio nicknome of "Kaiser bug."

Records of successful spraying campaigns have been published from Ohio and Connecticut.

The final recommendations from the former state (Ohio Agricultural Experiment Station Bul. 317) are as follows:

"Based upon our observations and findings, confirmed by the general results of the field demonstration spraying campaign just referred to we believe:

"Nicotine sulphate 1½ to 2 teaspoonfuls to a gallon of water, or about 1 to 500, with enough soap added to form a suds, is the most satisfactory spraying material for the control of this species.

"Two applications or more may be necessary to control the scourge, and these applications under conditions such as prevailed this season should not be more than 3 days apart.

"Thoroughness of application is essential to success. Many failures to control are due to insufficient or improper spraying.

"Because of the wide range of hosts, clean culture is an important adjunct to other control measures.

"Spraying in the early stages of an outbreak is essential to successful control.

With proper equipiment, proper materials and thorough work, the pink and green potato aphid may be effectively and economically controlled."

During the outbreak in 1917 in Connecticut the demand for nicotine solution was so great that most retail dealers sold out their stock, and could not obtain more from the factory until too late to save the crops.

In consequence (to quote from the account by W. E. Britton and M. P. Zappe in the Journal of Economic Entomology, Vol. 12, p. 71. 72.)

"We decided to spray with kerosene emulsion to kill aphids only and demonstrate to the growers that they were not wholly dependent on nicotine solution. A common formula for

(Continued on page 790)

Prematuring and Wilting of Potatoes

Puzzling Trouble in Connecticut Discussed---Comparitively Little Known—Suggestions Given

There appeared suddenly in southern Conecticut an unusual trouble popularly designated as a blight, which was first called to the writer's attention on July 6th last year in a field that had grown potatoes for three years. In this field a spot had yellowed up and was dying prematurely and the owner said he had first noticed the trouble two or three days previous. Since then the writer has seen many fields and received numerous complaints of the same or similar troubles confined chiefly to the southern half of the state. Many fields have been visted and a careful examination made of the plants in the field and in the laboratory. The trouble seems to be a complicated one with indications that more than one factor may be concerned with it. However, the general conclusion that we have come to, to date, is that primarily, at least in most cases, the trouble is not due to fungi but rather to lack of sufficient food and moisture for continued plant growth. The fields visited have shown two or three types of the trouble, as follows:

1. A prematuring of the vines in which the stem and leaves gradually turn yellow, the plant often remaining erect, the leaves dropping off or dying, and finally the whole plant succumbing.

2. Plants wilting and flopping over as if the stem had not enough strength to support them. Parts normally green and no particular spotting on the stem.

3. A bronzing more or less of the stem and spotting; plants lopping over somewhat; frequently the stem is rather soft near the ground so that it is easily pinched together and giving somewhat the appearanec as if some fungus or borer had been at work.

We have carefully examined the stems above and below the ground in the field and cut many sections of the stem and leaves in the laboratory, and while we occasionally find bacteria and fungus threads which might aid in wilting, and a Phoma that might cause rotting, we have found as yet no definite association of these particular agencies with these troubles.

Professor Whetzel of Cornell who has made some study of the trouble in Long Island, seems to have come to the conclusion that the trouble there may be caused by a form of Phoma fungus disease which he claims to be new to this country. His investigations are not complete and we are inclined to believe that this fungus, if associated with the trouble, is not the responsible agent in the majority of cases in this state, although we have found such a fungus on some of the stems.

Our investigations lead us to the conclusion that the trouble cannot be associated with any particular type of seed, whether home or northern grown, or the character of the seed, whether first class or poor, or the conditions under which it was stored as to freezing, aeration, etc., although there are other troubles that may be connected with such unfavorable conditions. Neither does the trouble seem to have been associated in any way with care or lack of care, regarding spraying for either insects or fungi, since some of the fields thoroughly sprayed for both have gone down just as badly as those receiving no treatment whatever. We have found, however, that there are certain conditions under which the trouble has appeared more or less injurious, as enumerated below.

Time of Planting and Maturing Factors

The trouble first showed on Irish Cobblers or other early varieties, later appearing on the late varieties. Of course Irish Cobblers and Green Mountains are the varieties most frequently planted in this state and are the ones upon which the trouble has appeared most prominently. Dibble's Russet seems, so far, to have been the least injured variety, but is rarely grown. The time of planting or maturing of the plants seems to have had considerable to do with its appearance. In other words, the trouble does not seem to develop until the plants have bloomed and are in the stage where teh foliage has made its growth and most of the energies of the plant are bent to the formation of tubers. We have seen the trouble very prominent on Irish Cobblers when Green Mountains beside them did not show it, or on Irish Cobblers when near-by rows of the same variety planted a few days later did not show it. In time, however, both the Green Mountains and the later-planted Cobblers did show the trouble when they reached the same stage of maturity. We know of one farm where the owner planted Irish Cobblers and Green Mountains on four different dates covering a month, and the trouble appeared in the fields and varieties in the order of their planting and maturity, being quite severe on the earliest when just beginning to show on the latest, and the Irish Cobblers, showing sooner than the Green Mountains.

We have seen many cases where the trouble showed over a field when the vines under shade trees, especially apples, which are likely to be within the fields, were still quite green and unaffected. In many other cases we have seen where th efield was quite irregular that the vines were always green in the gullies on the lower portions where the earth was more moist and got the wash from the fertilization. Invariably in fields with gravelly knolls the trouble first appeared and showed more prominently in thees spots, no matter what the fertilization. In poor fields, insufficiently fertilized, and in leachy soils, the trouble has always been most pronounced especially if only artificial fertilizers were used. Fields that have been heavily manured, or had a complete fertilizer containing potash, have not suffered like fields where only a 4-10 fertilizer has been used. We have seen fields where a heavy coating of manure applied over part of it and a 3-10 fertilizer applied over all of it, having the vines on the manured part stand up in good shape while on the remainder it went down prematurely. In other fields we have seen where part of the land had been in crops the previous year and part had been newly plowed, with a 4-10 fertilizer used over all, having the vines make a better showing on the sod than on the remainder of the field.

We have also seen fields of poor or leachy soil on which a 4-10 fertilizer was used producing a fairly luxuriant growth under the favorable moist conditions of the spring and early summer, going down when this fertilizer had been used up or leached out, when it really needed plenty of fertilizer and moisture at the time of rapid tuber formation.

Possibly Lack of Plant Food

All these facts, together with the further one that a fungus should work most destructively in a rank vegetation where there is plenty of moisture, which is the condition in which the potatoes do not go down so readily, lead me to the conclusion that lack of moisture and sufficient plant food, of which potash is one of the factors, are primarily responsible for most of the troubles, rather than fungi, poor seed, or insects, especially lice, all of which have been attributed as the cause.

That plant food is a prominent factor is further impressed upon my mind by the fact that in the northern tobacco-growing sections, where manure and complete fertilizers, especially those containing a considerable amount of potash, have been used abundantly in past years, I am not able as yet to find this trouble prominent although in some sections the crops are beginning to suffer from lack of moisture. Furthermore, in school and war gardens where the soil in many cases is rather poor and only commercial fertilizers have been used, the trouble seems to be more prominent than elsewhere, as we might suspect.

I understand, besides Conencticut, this trouble has appeared in New Jersey, Long Island, Southern New York, and complaints are now coming in from Rhode Island and Massachusetts.

In 1916 in the Aroostock potato district of Maine, Irish Cobblers suffered with a trouble similar to that described under the third type. In this particular case many investigators, who were in that region at that time, attributed the troubel to lack of potash with possibly fungi as secondary factors. We had some slight yellowing of Irish Cobblers in Connecticut that year. In 1917 we had no complaints of exactly this type in Connecticut, although many fields did poorly which were said to have been injured by lice. Dr. Britton, our Entomologist, is now inclined to believe that not all the trouble attributed to lice was caused by them, although theer is no doubt that where they were especially abundant on the young vines serious injury resulted.

All these observations have led me to the conclusion that we must be careful in the future, so long as our fertilizers remain incomplete, in the character of the ground which we chose for potatoes, and in the manner in which we fertilize the same. If feasible, select sod land or land that has been well fertilized with the previous crop. Avoid worn-out or leachy soils. If possible fertilize with a heavy coating of well-rotted manure plowed in the previous fall or in the spring. This will supply humus, which retains moisture and nitrogen and potash, the most essential elements for potato growing. Where possible use a complete fertilizer. Where an incomplete one is used, do not place all of this on the land before planting potatoes, but use part of it once or twice after the vines are up. Practice rotation. Unless the soil is especially well adapted for growing potatoes never plant two years in succession in the same place. Use preferably northern-grown seed and of the best quality, and give the vines thorough cultivation and protection against insects and fungi. In other words, a potato vine, like a human being, responds to the best treatment and what it needs most are moisture, nitrogen and potash, with favorable conditions for obtaining these.

The fact that lack of moisture has had a very important bearing on this trouble is shown by recent injury to other plants, dying grass and trees losing their foliage, from the dry hot weather of July 21st to 30th. The potato is the most subject to drought injury of any of our cultivated crops, so naturally this is the first to show its ill effects. Ordinarily this is shown as tip-burn but this year the injury has not been so much of this type as in the prematuring of the foliage. Vines not too early or suddenly killed still put a considerable growth into the tubers, so the injury will not be so great in some fields as suspected. We have had no complaint of rotting tubers. Late blight is now here in some fields, but under dry conditions is doing no particular harm as yet. The abundant and general rain of July 30-31st put an end to the dry weather and should prove of great value to those potato fields not too far gone at that time.—By G. P. CLINTON, Botanist, Connecticut Agricultural Experiment Sation.

GRASS AND CLOVER ENSILAGE

(Experimental Farms Note)

When the term "ensilage" is used in Canada, it nearly always refers to ensilage made from corn, for the reason that corn is practically the only forage plant which is used for ensilage in this country. There are, however, a considerable number of forage plants which may be converted into ensilage of high feeding value but, so far, only such plants which cannot very well be cured into hay and which, at the same time, produce bulky crops have been utilized for the purpose. For the same reason, grasses and clovers are not looked upon as belonging to the class of forage plants from which ensilage may be satisfactorily and economically made, and yet the first ensilage produced in modern times was made from grass.

Thus, history tells us that the people living in the countries bordering on the south eastern coast of the Baltic Sea in Europe made it a practice long ago, to preserve their grass crops in an unique manner. Trenches were dug in the ground to a considerable depth and filled with freshly-mown grass. The grass was packed as hard as possible and, when the trenches were well filled, it was loaded down wit large stones so as to be kept under heavy pressure. After a certain time a product was obtained which to all intents and purposes was identical with what is now called ensilage. This method of converting the grass into a wholesome and nourishing food was later, in a somewhat modified way, applied to Indian corn in France where, as a matter of fact, the making of corn ensilage was first successfully attempted. From France the method was brought to this continent where it was perfected and soon gained universal popularity wherever corn could be raised remuneratively for fodder.

It is the irony of things that, while corn became increasingly popular as an ensilage crop, the fact that common grass was the first crop used for ensilage purposes was soon forgotten, so much so that at present only comparatively few farmers are awart that grass may be advantageously made into ensilage. And not only grass but clover and alfalfa as well, may be converted into excellent ensilage. Some experiments with grass, clover, and alfalfa ensilage fed to dairy cows which recently have been conducted at the Dominion Experimental Farm, Agassiz, B. C., strongly indicate that ensilage made from the latter forage crops constitutes a most valuable feed, the use of which spells profit to the dairy farmer. The practice of putting the grass and clover crop into the silo in about the same manner as for clover—ma therefore well be encouraged, especially if weather and labour conditions at harvesting time are not favourable to the making of cheap hay of the best quality.

M. O. Malte.
Dominion Agrostologist.

At the American Guernsey Cattle Club Sale held in New Jersey the other day a cow five years old sold for $12,500, a bull calf for $25,000, a yearling bull for $5,400, a mature bull for $5,500, and a heifer rising two years old, for $3.500.

Apple Orcharding in New Brunswick

By A. G. Turney, Prov. Horticulturist

The outlook for profitable apple-growing in this Province was never better and, indeed, so far as the opportunities are concerned, it is doubtful if it was ever as promising.

Profitable Apple-Growing An Established Fact

During the past few years the Department of Agriculture has done much to demonstrate that commercial apple-growing in New Brunswick is no longer something about which there is any doubt, but rather, that is is a fact—a natural resource of proved value and capable of large extension. The greater and more general realization of this fact has been accomplished by the holding of three large apple shows in St. John, second only in Eastern Canada in point of size and excellence to the Ontario Horticultural Exhibition, by the prominent displaying of our apples at the various agricultural exhibitions in the province, and also in Montreal, Toronto, Boston and London; and, lastly, by the conducting of demonstration orchards and the general educational work of the Fruit Division. These means of publicity of bringing the accomplishments of our fruit growers into very general realization will be continued and new ones, already, under consideration, will be put into effect.

Demonstration Orchards

The policy of conducting demonstration orchards will be continued in a modified improved and extended form. Some fine new large orchards which were planted about seven years ago as a direct result of the publicity campaign of this division, and which are now coming into bearing, will receive specal attention in the confident expectation that they will inspire the planting of many others. The teachings which they will undoubtedly yield and their relation to the present and future methods of apple-growing, selection and adaptability of varieties, etc., will be carefully and advantageously used.

Concentration on Certain Varieties

The work of the last few years has established clearly that our leading varieties of apples, those on which the extension of the industry is based, are Wealthy, Alexander, Fameuse and McIntosh (with McIntosh preferred to Fameuse) there are others that may be profitably grown in particular sections or localities but these four we can grow to perfection—so why ask for anything better? Given these varieties of proved worth and adaptability, the obvious thing to do is to exploit their production in the very best sense of the word—to demonstrate as widely as possible their superiority over other varieties for our conditions, and to ascertain the best and most economical methods of producing them.

To this end the efforts of the Fruit Division will be concentrated and new steps have already been initiated and much important work started. In 1918 the Division established nine new test orchards of Fameuse, McIntosh and Alexander and this year we will set out eight more new, but larger orchards of these varieties, including Wealthy, in various combinations and planting distances. These new commercial demonstration orchards, as they will be known, are being placed with leading growers so that the conditions of care and culture may be the best obtainable. Accurate and detailed records as to the cost of growing, etc., will be kept and published, and to a large extent these orchards will be pruned and their care supervised by the Fruit Division.

Provincial Nurseries

Previous to 1913 the demand for apple trees of the most suitable varieties for planting in New Brunswick could not be supplied entirely by the local grown stock, and hence the importations from Ontario, Nova Scotia and the United States. It is gratifying, therefore to report that, with the active encouragement and support of the Fruit Division, there has since been a comparatively large development of the nursery business, and the present supply of New Brunswick grown trees of the best varieties is fully equal to the demand, and consequently there is no need of sending out of the province for apple trees. The stock in these nurseries has been inspected for the past five years by officials of this division and found to be apparently free from the San Jose Scale, and generally in a thrifty and desirable condition.

The Fruit Growers Association

A strong and active Fruit Growers Association is essential to the progress of the industry and the Department has always given a large measure of practical support to it. Largely as a result of this support, the Association has been able to make a big increase in its membership, to foster and develop the spirit and practise of co-operation, to purchase for and supply its members with nursery stock, spraying materials and all kinds of fruit growers supplies and to engage in the co-operative marketing of their fruit. Under the fostering support of the Department, the Association has developed into an increasingly powerful factor for the extension of our apple industry and one that will always work in co-operation and with the support of the Department.

Pruning Assistance

Assistance in the pruning of orchards has been a feature of the work of the Division for some years, and alst year, realizing that shortage of help and other conditions might lead to more than ordinary neglect of orchards, the assistance in pruning was largely increased and many farmers availed themselves of this opportunity and thus kept their orchards in good condition. This policy, of providing competent men at a nominal charge of twenty cents per hour, to instruct and assist farmers in the proper pruning of their orchards, meets with unanimous approval, is of very considerable value in our present stage of development of apple-growing and is being continued.

Experimental & Educational Work in Spraying

Although orchard spraying is still capable of being much more generally adopted yet there has been a big improvement during the past five years, both in the methods used and thoroughness of the work done and the number of orchards being sprayed. Power outfits have been secured by most of the larger growers and the sale of barrel pumps for use in the smaller orchards has increased very rapidly.

In 1917, this Division, acting in cooperation with and under the direction of Mr. G. E. Sanders of the Domniion Entomological Laboratory, Annapolis, N. S., started a series of spraying experiments with the object of working out a thoroughly practical and efficient system especially adapted to New Brunswick conditions. Already, this work has been successful beyond out most hopeful expectations, so much so that we feel that the chief spraying problems of our orchards have been solved, in principle at least, although there may be room for minor improvements, and we are now able to recommend a system of sprays which we know from actual practice, may be relied upon to produce clean fruit even in an unfavorable season. It would be hard to over-estimate the importance of this work in its relation to the development of our apple industry and its combination and extension is am important part of the policy of this Department.

Co-operative Marketing

The greatest incentive to increased orchard plantings is the profitable marketing of our present apple production. Realizing this, the Division has paid special attention during the past two years to the co-operative grading, packing and marketing of what may be termed, the exportable part of the crop, and in this work it met with marked success, getting very profitable returns for the apples thus sold outside the province, raising the price on local markets and increasing the general demand for and reputation of New Brunswick apples. The continuance of this practical form of assistance is essential to a well rounded and mature policy of encouragement.

Summary

The conclusion of the war has not brought about any radical changes in the policies of the Fruit Division for the reason that those changes, together with the continuance of the former policies were decided on three years ago, in anticipation of the very situation which faces us today. Not only has New Brunswick maintained the pre-war conditions of her orchards throughout the four years of the struggle, but in point of organization and development, the Province is in a better position today than in 1914.

Farmers Success Depends Upon Retaining Soil Fertility

Soil is the source of all wealth. From the soil directly or indirectly human beings and all animal creatures obtain food. When the Creator planned this universe, he apparently provided every element necessary to sustain life and ordained that in the evolution of the world and the existence of man there should be no destruction of elements. These elements form numberless complex substances by uniting one with the other, and they perform them in accordance with fixed laws, and finally turns back in the form of gases, vapors and mineral salts to start anew their endless work of production.

While elements may be indestructible, they sometimes stray, some become lost and often many are misused. Were it not for such losses, nature's store of plant food would not be diminished. It devolves upon man, therefore, to co-operate with nature in order, first, to secure from the soil the full benefit of these elements, and secondly, to prevent depletion.

Most virgin soils contain a goodly amount of the essential morganic elements, as silica, phosphorus, potash, lime, magnesia, iron, sulphur, etc., while water and air contain inexhaustible supplies of the four great basic elements, nitrogen, oxygen, hydrogen and carbon. Standing between these two great groups of elements is the man called the farmer and upon him alone depends the ability to make available the actual and potential power in nature's store house.

If all of the elements and compounds which go to make up vegetable growth were returned to the soil and atmosphere, there could be no diminishing of fertility, but such is not the case. There is a difference between the amount taken from the soil and that returned, which may finally bring about absolute depletion in some of the elements, unless scientific methods are enforced by the tillers of the soil.

The farmer is therefore confronted with these two problems: First, to make available, plant food elements which exist in the atmosphere and in the soil, and, secondly to return to the soil, plant food and guard against wasting. The first problem involves several important operations, namely, proper drainage, good cultivation, sufficient water to grow the crop, and crop rotation.

The second problem (returning the fertility) is more or less interwoven with the methods of the first and the two can be summed up under the heading of GOOD FARMING. This requires careful management, although not difficult to perform and to actually increase the fertility of the soil over what it was originally is quite possible and frequently accomplished. To do this the farmer must rely upon live stock and returning the manure to the land with the least possible waste. He must raise clover or other legumes to transfer the nitrogen of the air to the soil and sell nothing but concentrated products, e. g., butter, milk, eggs, poultry, wool, pork, beef, mutton, vegetables, horses, etc., as against bulky products such as hay and grain. The former method returns nearly all the fertility to the soil; the latter nothing. THE FORMER IS FARMING, BUT THE LATTER IS MINING AND IT IS ONLY A QUESTION OF TIME TILL THE SOIL WILL BE DEPLETED OF ALL FERTILITY AND WILL NOT PRODUCE A SUFFICIENT CROP TO WARRANT CULTIVATING IT.

It is often profitable and sometimes advisable to apply forms of plant food other than those produced upon the farm. These may be used without disturbing the ordinary methods. The use of fertilizers calls for considerable care and it is just as easy to contract large losses from their misuse as it is to obtain large profits from their right use. The nature and composition of fertilizers is a subject well worthy of careful study. No farmer should use fertilizers unless he has proven by careful experiment upon his own farm, that they will return him sufficient profit. In short the following general practices will insure good profitable crops and the maintaining of the soil fertility.

1—Proper drainage.
2—Good plowing and cultivation.
3—Short rotation of crops.
4—Raising of live stock and feeding all roughages upon the farm.
5—Growing of clovers and legumes.
6—Returning the manure to the land with the least possible loss.
7—Using commercial fertilizers where they have proven profitable.
8—Careful management and elimination of waste.

$1,680 PAID FOR BERKSHIRE PIG

The British Berkshire Pure-bred Pig Society recently held their first annual show and sale at Reading, when 150 pigs were shown. A gilt was sold at $1,680.00, the highest figure recorded for the breed—this young pig won the championship of the show. A three-year-old sow brought $1,000.00 and another sow $1,180.

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DATES OF ISSUE.

August - - - - - -	5—26
September (Exhibition Reports) -	9—30
October - - - - - -	14—28
November - - - - - -	11—25
December (Xmas) - - - -	9—23

AUGUST 5, 1919

THE FALL FAIRS

The Maritime Circuit of Fall fairs will open at St. Stephen, N. B., on September 9th, when for the first time in its history, the Charlotte County Exhibition will be thrown open to exhibitors from all parts of the province, as well as to those of Washington County, Maine. The fair will continue for four days.

Woodstock Agricultural Society is also holding an exhibiton on the same days, and will throw its entries open to the Maritime Provinces and the State of Maine. A splendid exhibition plant is now in course of erection and is being rushed forward to completion.

The Fredericton Exhibition follows with the dates set for September 13th to 20th. Prospects are good for one of the best exhibitions ever held at Fredericton.

Next in order comes Chatham on September 22nd to 26th. This progressive fair association has opened its doors to all Canada.

The Charlottetown Exhibition will be held on September 23rd to 26th, and will as usual be a popular resort.

The Centreville Agricultural Society will also hold its exhibition during the week of Sept. 22nd.

The Yarmouth County Exhibition will be held on October 1st to 3rd inclusive.

* * *

Barnyard manure or commercail fertilizers help to make big yields.

SWATTING THE SCRUB SIRE

The details of a very practical plan for swatting the scrub sire have been worked out in actual operation in a Wisconsin county. An accurate survey of the county revealed the fact that 37 per cent. of the young bulls and 26 per cent. of the old bulls in service in the county were scrubs. As this was one of the good counties in one of the best dairy states in the Union, it is safe to assume that the percentage for the whole country would not run away under the figures given. An additional 37 per cent. of bulls, both old and young, were found to be grades, which left but 26 per cent. of the young bulls, and 37 per cent. of the old bulls pure bred. This survey, in addition to the foregoing data, gave the complete data for each township of the county, with the exact location and name of every man using a scrub or grade bull. Armed with this information, the three county breeder's associations, representing the Holstein, Guernsey and Jersey breeds, in co-operation with the farm bureau office, the state live stock breeders association, and other interested agencies, started a systematic campaign to replace every one of these grade and scrub sires with a pure bred. Accordingly every pure bred breeder in the county pledged himself to furnish a typical bull calf of pure breeding, from three to nine months of age, to be traded even up for one of the grade or scrub sires, which was of course to be sent to the block. The only string attached to this offer of an even exchange was that the pure bred calf be retained in service at least two years by its new owner. While in some cases this meant a little sacrifice on the part of the pure bred breeder in the matter of immediate returns for his calf —from the standpoint of the future it is fundamentally sound in its relation to the development of a community breeding center.

The full grown scrub would certainly bring more at the block than the young pure bred would command for veal, as many pure bred bull calves are disposed of; there would be no economic loss in converting these bulls into beef; the best of all the exchange effects at no cash outlay to the dairyman, a result that might require years of argument and demonstration to bring about—the swatting of the scrub sire, and the use of a pure bred in his place. We expect to hear of other counties getting organized to follow the lead of Fond due Lac County, Wisconsin. Why not take it up at the next meeting of your society?

PROFITEERS—WELL HARDLY

The city consumer has evidently made up his mind that the farmer is an out and out profiteer; the farmer from his side of the fence complains that he has been very much underpaid, even under war conditions. But neither side seem to have facts and figures to prove their case.

Last year, however, a farm survey was conducted in Oxford County by a representative of the Ontario Agricultural College, Ont. In this survey, which covered the returns from 450 representative farms for 1917, it was found that:—

> The average labor income, after allowing for such charges as interest on capital invested, depreciation, and the ordinary expenses, was $1,200 for the year. This represents the average net return the farmer secured for his own labor and that of his wife and smaller children. To secure it they worked 13 hours a day, seven days in the week for six months, and 11 hours a day for the other six. Making a nominal allowance for other than household work accomplished by the wife and small children, this figures out around 22 cents an hour for the farmer's laor, or considerably less than is paid for ordinary unskilled labor in the cities. These are average figures. They include the incomes of some of the best and most progressive farmers in Canada.

It would be well for city people who have been helping to raise the hue and cry of "robber profiteer" against their country brethren to give these figures a moment's consideration and compare them with remuneration they receive in their various professions and callings.

LOOKING AHEAD

"How shall I meet my responsibilities this year as a farmer and a citizen? How can I get the largest returns from my farm at a time when this is so much needed?"

These questions must be answered by every individual farmer. He must consider his own conditions, his own opportunities and his own responsibility. But there are some suggestions that will help those who are in a position to make the proper use of them.

It will not be wise nor expedient to retrench in productive expenditures. There will be an incentive to produce as much this year as the land will yield. The emergency times will require it. But the land must be no less capable of producing as much or more the following year. It would be unwise to use such intensive methods as will impoverish the soil for future crops. Who knows the future? Who can tell our needs a few years hence?

The use of improved implements and machinery should be used as extensively as possible. Each man and team must produce more than ever before. Tillage must be better; brain power must supplement muscle power; machine power must supplement animal power and man power to as large an extent as possible.

OUR RESOLUTION

Let us resolve this day to begin life anew. To start with a clean mind and a celan heart and a clean body. To do all things right and do right in all things. To love honesty, justice and liberty, to teach them and to practice them, but to despise injustice, dishonesty and tyranny. Let us help the weak and encourage the helpless, and divide our joys with the poor of the world, that they may know that we are not above them or beneath them, but with them and of them, and that all men are born equal, and all hold kinship with God.

Let us be cheerful and even tempered and not afraid to smile. Let us be ever thoughtful of others and unselfish in our desires.

Let us resolve to seek always the truth and fearlessly condemn the false; to so live that our daily lives shall be an open book, with nothing to fear, nothing to hide; to honor virtue, age and womanhood; to obey our laws; and above all things let us show our loyalty to our country, and faith in our God.—Ralph A. Sayler.

BEST SUBSTITUTES FOR HIRED HELP

Efficient farm machines are the best substitutes for scarce hired help. By using labor-saving implements, the Canadian farmer produces more per man than any other farmer in the world. Therefore, in the present crisis, he should use the most efficient machines and suitable farm power to make the necessary increase in production which war conditions demand. Old useless machines should be sold as junk and serviceable equipment, not needed, should be sold or made available to others. To lengthen the period of service, machines must receive proper care and lubrication when at work, and proper protection from the weather when not in use. Attention to these suggestions on the part of the farmer and machinery dealer will help to obtain the greatest efficiency from farm machinery and aid in the best distribution of new machines.

* * *

Well balanced rations and careful feeding have a direct bearing on the production of your hens.

* * *

When a man is satisfied with conditions as he finds them, he might as well call in the undertaker, for the jig's up with him.

SHEEP ACTIVITIES IN NEW BRUNSWICK

Federal and Provincial Aid to the Farmer and Breeder

Mr. Norman Stansfield, Acting Chief Sheep and Goat Division, Ottawa, with Mr. J. H. King, Maritime Representative of the Livesock Branch have been in Fredericton this week conferring with the Hon. J. T. Tweeddale relative to the co-operation of the two departments for the further improvement of the sheep industry. Mr. Stanfield is very favorably impressed with the possibilities for sheep protection and likewise with the progressive legisatlion that has been enacted for the protection and purchase of sheep by the department. While in Fredericton Mr. Stansfield visited the wool warehouse and expressed himself as being well pleased with the quantity and quality of the wool accumulated.

Some very important decisions effecting both the farmer and the breeder were arrived at. The Federal department of Agriculture is offering a bonus of $5.00 a year for two years in succession to a farmer who will use a purebred ram. This bonus applies to farmers who have never used one before . The Honorable J. F. Tweeddale has given his assent to a provincial bonus of $5.00 for the same purpose, making a bonus of $15.00. It is anticipated that this bonus will be an incentive to the farmer for the purchase of more and better rams as it will make up the difference between the purchase price of a pura bred and a scrub. The motive is simply to demonstrate for two years the value of the pure bred sire as per the scrub, and if at the end of two years the farmer is convinced by concrete evidence, that is better lambs, then it is assumed that he will continue to use pure bred rams, but will receive no bonus.

Another decision affecting the owners of grade flocks was arrived at, viz., that if a group of twenty-five farmers in any district or parish will get together and appoint a representative to purchase stock the Department of Agrirulture will pay his travelling expenses to any place east of Fort William, Ontario, and will, if possible, have a representative go along and help make the selection. This idea should appeal to farmers' organizations throughout the country. The representative will have to purchase twenty-five rams in order to have his expenses paid by the government.

A scheme for the grading of pure bred rams by the breeders of New Brunswick was also decided upon. New Brunswick is the first country in the world to adopt this method, which is probably the most advanced measure yet taken by any department of Agriculture for the protection of the farmer who buys his stud sheep by mail. Briefly the scheme is as follows: Rams will be classed as Superior, Average and Common and will be marked 3 star, 2 star and 1 star respectively. The rams will be graded by an expert sheep man and if a farmer writes to a breeder for a 3 star ram, then he will be assured that he will get a first class article. Each ram will be marked. Further the Federal Government will bonus only 3 star and 2 star rams and will not bonus the Common or 1 star ram, consequently farmers desirous of taking advantage of the $15.00 bonus offered by the Provincial and Dominion Department of Agirculture should bear this in mind. The Provincial Department of Agriculture is granting a bonus of $3.00 and $2.00 respectiyely on each 3 star and 2 star ram produced by the breeders of the Province. 1 star or common rams will not be bonused in any way, and it is hoped that these 1 star rams will be finally eliminated from the trade.

T. G. HETHERINGTON,
Live Stock Supt.
N. B. Dept. of Agriculture.

THE SUPPLY OF RED CLOVER SEED IS EXHAUSTED

(Experimental Farms Note.)

Owing to the comparatively small quantities of red clover seed which were available for this year's seeding, there are many, especially among those who failed to give their orders until late in the season, who have been unable to secure any seed at all this spring. The seed merchants are practically all cleaned out, and the small quantities which are in the hands of individual farmers are negligible. As a matter of fact, there are only a few odd pounds left here and there.

Under the circumstances, it seems that it might be a good policy to go in for clover seed raising this season on a more extensive scale than usual, because the demand from the trade for clover seed for next year's seeding is apt to be large. Canadian-grown red clover seed has, moreover, especially in recent years, gained a high reputation for reliability and, as a result, it is in ever increasing demand. Everyone who has used Canadian-grown seed is satisfied that it is preferable to imported seed for the reason that it produces a crop which is more likely to escape winter-kililing and frost injury in general than a clover grown from imported seed. Canadian grown red cloved seed is therefore sure of finding a ready market in the Dominion.

The best red clover seed crops are generally obtained on clay land, particularly if it is sloping to the south or west. Thick stands which may lodge in case of a somewhat wet season do not favor the development of high yielding seed crops of good qualtiy and anyone contemplating raising of a red clover seed crop should, for this reason, set aside for the purpose such a field, or such part of a field, in which the stand is not too thick.

As the seed is harvested from the second crop, the first crop may be either pastured or cut for hay. If pastured, the cattle should be turned off not later than June 20th. In case pasturing is not found feasible or desirable, which is mostly the case when only a part of the field is being reserved for seed production, the first crop should be cut not later than the third week in June, or even earlier, depending on the condition of the crop. As a matter of fact, it is advisable to cut as soon as blossoms begin to appear generally. If cutting is delayed much longer, the chances are that the second crop, that is to say the seed producing crop, may be held back, whereby of course the seed crop may be prevented from maturing in good time.

In case weeds appear in the seed crop, considerable trouble in the cleaning will be caused and it is therefore of prime importance that any field set aside for seed production should be as free from weeds as possible.

Concerning the harvesting of the seed crop, we beg to refer to an article on the subject which will appear in the July issuse of the "Seasonable Hints."

WHY IS HOME GROWN CLOVER SEED THE BEST?

The Dominion Experimental Farms' system has for years advocated the use of Canadian-grown red clover seed on the ground that heavier and more reliable crops may be expected from the home grown seed than from seed imported from some other country.

The superiority of Canadian-grown red clover seed has been demonstrated over and over again, and, as a result, many progressive farmers prefer it to any imported seed and, knowing its superior value, raise the red clover seed themselves rather than take a chance of getting unsuitable seed through the trade.

In order clearly to understand why the home-grown seed is superior to the imported article, it should be remembered that there is not a single pound of red clover seed on the market which can be said to represent a distinct variety. In fact, every pound of red clover seed sold in Canada represents a mixture of a large number of varieties. What this means may be exemplified if we assume, for the sake of comparison, that all kinds of corn varieties are being mixed and the mixture thus obtained put on the market for seeding purposes. The comparison applies perfectly to red clover, for all red clover seed sold in Canada is a mixture of a large number of different types of plants. Some of these types are what is called winter-hardy, that is to say, capable of coming through the winters without injury on account of their hardp nature. Others, however, are tender types which, in this climate, are unable to stand the rigour of the winters.

As the ordinary red clover is a mix ture of hardy and tender types, there is always a certain amount of winter killing going on, the result of course being that the greater percentage of tender types in a clover field, the greater the winter-killing. On the other hand, the plants which come through the winter may be considered to represent a stock much hardier than the original mixture of hardy and tender types.

Here is where the value of home-grown red clover seed comes in for it is obvious that seed, harvested from a Canadian clover field from which a large percentage of the tender types have been eliminated through the weeding out process caused by the winter, is bound to produce a hardier and consequently more reliable and more remunerative crop than any imported seed which may consist of a mixture of both hardy and tender types. And, furthermore, it is obvious that the farther north the seed is grownfi the more suitable it is for a country like Canada, because the farther north it is grown, the hardier is the crop raised from it likely to be. In view of this we must strongly recommend, not only that red clover seed raising be taken up on a larger scale, but also that, whenever possible northern Canaadian red clover seed be used in preference to imported seed.

WHEN TO CUT GRASS AND CLOVER FOR HAY

It is regrettable that it is a too general practice among farmers in Canada to leave the hay crops to be cut much too long. There are, as a matter of fact, a large number of farmers who delay the cutting of the hay crop far beyond the time when it would pay them most to cut. In many cases the reason for the delay is that it is a general belief that a somewhat increased tonnage may be secured if cutting is postponed, and in other cases the late cutting is practised because it is even believed that a better quality of hay may be obtained than if the cutting were done earlier.

In the case of Eastern Canada, where mixed clover and timothy, or timothy alone, are the fundamental hay plants, a few suggestions based on experience may be found not to be out of order.

Tmiothy and red clover are the standard hay plants which universally are grown together. The clover is contributing the bulk of the hay crop the year after seeding, and the timothy is furnishing the bulk of the hay the following year or years. Supposing that a farmer has a field of mixed clover and timothy, what would be the best time for him to cut it for hay? The clover develops early and is ready to cut some time before the timothy has reached its best stage. Shall the farmer cut the hay when the red clover is in its prime, or shall he wait until the timothy is at its best, notwithstanding that the timothy mixed with it may not be as well developed as might be desired for the reason that the clover is the more vlauable part of the mixture. By cutting early, the clover is given a chance to recuperate and to produce a aremunerative second crop, which it might fail to do if the cutting for hay is delayed too long for the sake of the timothy.

In case timothy forms the principal part of the hay crop, which it generally does two years or more after seeding to hay, it is important to handle it for hay in a proper manner. Timothy, like most other grasses, has a period of its own when it has the greatest feeding value and when the hay made from it is apt to furnish the maximum feeding value per acre. This period is the time of blossoming. At that time, timothy is richest in flesh and milk producing constituents and, if cut for hay when in bloom, the best quality hay may consequently be realized. It is a mistake to believe that better crops may be secured if cutting is somewhat delayed. Some slight increase in the yield may be obtained but what is gained in quantity is lost in quality and feeding value pound for pound.

Under the circumstances, early cutting of timothy for hay must of necessity be recommended as the most economical method of securing a hay of the highest possibile value.

GASSING THE RAT

For the benfit of your readers who are pestered with rats about their farm buildings, I have enclosed a description of a method I adopted in getting rid of them that proved succesesful. There is not a better carrier of disease and vermin than the common rat, and I found out that they were the spreaders of hog cholera.

The rats had made a network of tunnels in the ground under the granary, the hog house and the feed yard. I blocked up all the entrances into the underground holes except the main entrance used most by the rats. Down this I put a rubber hose connected to the exhaust pipe of the car and filled the rat quarters with exhaust gas.

It is easy to tell whether there are any holes that have not been blocked up, because the gas can be seen escaping. After I made sure that the gas was not escaping into the out-of-doors, I entirely filled the rat tunnels with a heavy dense gas. I then pulled out the rubber hose, plugged up the hole and waited for results.

The first apearance of a rat in that part of the farmyard was about a month later. Again the rat quarters were gassed and this was done whenever any rats put in an appearance. Now a rat is an unseen thing in that part of my barnyard.—E. C.

CHEAP TANK FOR TREATING FENCE POSTS

A small but cheap treating tank for treating fence posts can be made from one of the galvanized steel barrels used for shipping oil and gasoline. These barrels, which can be bought for about $6 or $7, are 36 inches high by 22 inches in diameter, and by removing one of the heads with a cold chisel or otherwise, a tank 34 inches deep remains. This tank, which is heavy enough to serve the purpose of post treating, may be supported upon two iron cross-bars built into the sides of a brick or stonework fire place. Such a tank will hold about 10 or 12 posts of ordinary size at one time.

Perhaps the most convenient way of using such a small outfit without much attention is to fill it with posts and creosote either at night or in the morning and heat it to the required temperatue with a small fire. The posts may be left in until the end of 24 hours and another lot put in. In this way the posts are given an excellent opportunity to absorb creosote while but little time will ge taken from other work.

HORTICULTURE.

COMMERCIAL STRAWBERRY GROWING

Manning Ells, Port Williams, N. S., at N. S. Fruit Growers' Association

Strawberries seem to fit in well with orcharding. They can be grown in the young orchard until the trees have been out some fifteen to twenty years and there is no way in which a young orchard can be grown so cheaply as in conjunction with strawberries. With good cultivation the strawberry is practically a sure crop, and under all conditions of weather we have not had a failure in ten years, the crop not varying more than a thousand boxes to the acre one year with another. Some objection is raised that when growing berries one has to wait two years before any returns come in. This is true when starting a plantation, but where planting is carried on every spring you have a crop maturing every summer. Strawberries are the first crop to be harvested on the farm and bring in some money at a time when other sources of revenue are at a low ebb. Right here let me state that the man with an acre of berries to harvest this summer has a small bonanza in his hands.

Growing strawberries presents no greater difficulties and does not require any greater knowledge than is needed in any other hoed farm or garden crop. In starting a plantation select a piece of ground that has been under cultivation for at least three years. The June bug lays its eggs in old sod and pasture land and the white grub or young June bug is very fond of strawberry roots and will soon finish a new set plantation if there are any in the soil. It takes three years before they are all out of an old piece of sod. In this valley I think a loam or light loam is the most satisfactory kind of land for berries, it being the easiest to work and giving the highest returns because the berries will be earlier than in heavier land. We want to keep in mind that the early berry is the one that pays. By raising early berries the crop is out of the way before the haying season is on, quite an important consideration if we are to grow berries in a general way.

Preparing The Soil.

Prepare the land as for potatoes or corn. We like to get the stable manure on the fall or summer before and plow it in, plowing again in the spring as soon as the land is fit to work. In growing Dunlaps—and this is the only variety we would grow on a commercial plantation in the Annapolis Valley—it is not necessary to set them before the first of June to get maximum returns. If the Dunlap has one fault it is that it makes too many runners, too rank a growth when set early in the spring on very good land. Later in the season these runners pile over one another and take root so thickly that the producing plants are almost smothered out. For the same reason, strong nitrogenous fertilizers should be sparingly used on the Dunlaps when set early in the season. The best crops I have ever seen were grown on strong, well-manured land when the plants were set the last week in May.

On our own farm we begin to plant as soon as the land is ready and continue as opportunity offers right into June. We have a large plant business to take care of, however, and have to plant as soon as we get the time available. After planting it is most important that cultivation should take place at once. Plants that are cultivated within a week of planting will seem to come right along and get a much better start than those left until the weeds are showing above ground. If cultivation is started early and kept up once every week or ten days until the runners cover the ground, the heaviest part of the work is over. This constant cultivation gets the weed seeds all started to the surface and sprouted so when the fall rains come and the rows are nicely matted there will be few weeds left to come up through the young plants.

To get the best returns it pays to mulch the first year. Use marsh hay, headow hay, rushes or straw. The most of us will have to depend on oat straw and even at twelve dollars a ton we covered the whole of our ten acres with straw this winter. Many make the mistake of putting the mulch on too heavy. All that is required is enough to shade the plants; shake the loose straw along the rows as thinly as it can be spread, and from one to two tons of dry oat straw will mulch an acre. This mulch, when drawn between the rows as soon as the growth starts in the spring, will help to keep down weeds, will keep the berries clean and conserve moisture.

Up to picking time any ordinary farmer can grow several acres of plants with no more trouble than with the same acreage of turnips or potatoes, but the harvest is the limit.

PROPER CARE OF SPRAYING MACHINERY

The old saying that "More farm machinery is thrown away on account of neglect than is worn out," is especially true of spraying machinery. The records of most manufacturers will show that some spraying machines sold 10 to 20 years ago are still in use. This is due largely to the fact that these machines have been taken care of properly. Other machines are wrecks after two or three years' service, due entirely to neglect on the part of the men who have had charge of them.

The manufacturer of spraying machinery is constantly striving to make his output "fool proof;" but the stage has not yet been reached where a sprayer will operate successfully without oil, packing, or renewal of worn or broken parts!

A potato sprayer should do well two things: (1) Furnish pressure (at least 150 pounds) sufficient to spray all parts of the plant—the top and underside of the leaf, as well as the stalk. (2) Properly agitate the spray solution in the tank.

The sprayer should have a suction strainer of ample size (number 14 to 18 mesh wire) mechanically and automatically cleaned by brushes operated in conjunction with the agitator. It should have a filling strainer to fit the opening in the top of the tank through which all liquids are strained into the machine. More spray machines operate under low pressure due to clogged suction strainers than from any other cause. One great reason for this clogging is due to the spray solution not being thoroughly dissolved before it is put in the tank of the spraying machine. There are several good articles by the Agricultural Experiment Stations covering the proper mixing of spray solutions.

Getting the Machine Ready

Oil all parts of the machine (don't forget to oil the plungers both inside and out). Close valve to spray boom. Throw in clutch to pump. Close pet cocks on pump. Open safety valve. Start machine. When pressure gauge begins to register open valve to spray boom; close safety valve and adjust nut on safety valve to the right pressure. If necessary to stop in the field to make adjustments, close shut-off valve to spray boom; this will retain pressure in the pump air chamber or in the reserve tank so when the machine is ready to start it will not be necessary to back up for 15 to 20 feet in order to get up pressure. This is also a good plan to follow when turning at the ends of the rows.

Do not allow the machine to stand in the open when not in use. Draw off all liquids from the tank when putting the machine under cover.

When the packing becomes worn, and will not hold the liquid while the machine is operating under pressure, unscrew the iron packing cap, lift the brass follower out, remove the packing (which is in 4 or 5 separate rings) with a nail or any piece of metal bent in shape of a hook, put in four rings of new packing which comes cut to the right length, press down with the brass follower, screw on the packing cap, oil around each plunger, and start machine. Run for ten minutes. If packing does not hold liquid screw down packing cap slowly until the packing holds the liquid.

On the older types of pumps the brass piston or plunger is fastened to the iron cross head by means of a cap screw. If the cap screw works loose the inside of the piston or plunger will fill with the liquid. To tighten take off the connecting rod cap and pull the plunger out. Place in a vise (clamping the connecting rod), the bottom of the plunger up. Tighten the cap screw until it holds the plunger firmly. Place the plunger back in its place and put the connecting rod cap in position. Be sure that the liners are in the same place they were in when you removed the cap. Fasten the cap on the connecting rod with the two cap screws, making sure that all parts are fastened securely.

On the newer and better types of pump, the plunger or piston is made solid, making it practically impossible for the piston or plunger to work loose from the crosshead.

Putting the Machine Away

When spraying is finished for the day, clean all nozzles; fill tank one-third full of clean water (do not use dirty water) and operate the machine until this water is all sprayed out. Unloosen packing nut and oil outside plunger. This will give the packing a chance to expand, absorb oil and assure long life to the packing and plunger, and your machine will be ready for the next day's spraying.

At the end of the spraying season fill the tank one-third of clean water and wash the inside of the tank, pump, piping, hose and nozzles thoroughly. After you are sure that these parts are clean open the pet cocks and operate the pump until all liquid is discharged. This will asure you a good, sound pump for the next spraying season, and not a cracked one due to freezing of liquids left in the pump over winter.

Remove the plungers and empty all liquid from the inside of them and place in an inverted position inside of the tank. Remove the packing cap, the follower, packing and the chain. (Soak the packing and chain in any good lubricating oil.) Place all these articles, as well as the nozzles, inside the tank with the plungers; fasten down the cover securely and put the entire machine away under good shelter.

Make a note of all worn or broken parts and send your order to your dealer or the manufacturer of the necessary parts. Don't wait for next spraying season to do this. As soon as you receive these parts put them in their proper place on the machine.

Getting the Old Machine Ready

About four weeks before the next spraying season assemble the machine, fill 1-3 full of water and operate, without nozzles, until this water is discharged. You may find that the valves do not keep up the pressure. If this is true, unloosen the two nuts on the bolts that hold the air chamber and manifold in position; lift out the ball and seat, place the ball in opposite side of the seat and replace in proper position on the pump. Replace the gaskets with new ones if necessary. Put the air chamber and manifold in position and tighten the bolts. If any parts are missing, worn or broken, order them at once which will assure their reaching you before the bugs arrive.

Follow the foregoing and you may rest assured that the "sprayer" will be ready for business when it is wanted. —By William H. Gilbert, in Potato Magazine.

IMPROVEMENT OF THE GARDEN PEA BY SELECTION

(Experimental Farms Note)

Home Grown Seed is Generally the Best—It is now a well known fact that home grown seed is generally better that that in the trade. . Seedsmen themselves must feel that they cannot be sure of what they sell when they have practically no control over the production. It is certainly hard to understand why farmers do not produce on their own place more of the seeds which they require, especially those which are easily grown. Not only would they be surer of the vitality, but, which is very important in the case of vegetables, they would also be surer of the purity.

How to Improve Garden Peas—Garden peas are best grown on the flat in rows three feet apart. They very seldom cross, so that each plant is practically a pure line which can be isolated with comparatively little difficulty. Plants containing the largest number of long pods are chosen and peas from each plant are sown in separate rows. Of course, the more plants are chosen to start with, the greater the chance of finding one of extraordinary merit, but if fifty are used the first year, ten the third, and the best the fourth, it will be found that there will be quite an improvement over the initial stock.

What Was Done at Cap Rouge—At the Cap Rouge Experimental Station, the isolation of a good strain of Juno garden pea was started in 1912 when the yield was at the rate of twenty-six bushels of green pods per acre; in 1915, the yield had risen to forty-two bushels, and in 1918 to seventy-eight. Though the least desirable varieties were yearly weeded out, leaving only the best, still this strain was the highest producer of the eight tried in 1918.

What Farmers Can Do—Farmers need not go to the trouble of isolating good strains, as this work is done at Experimental Farms, but they can start with a good variety and put small stakes near a few plants which show decided superiority, as long as these have no advantage in regards to space, light, manure, or soil. The crop can be picked green, leaving only the chosen plants to mature peas, and the pods shelled by hand. This choice seed would be sown the next year, when the same work should be done over again, and so on each year, as the good results otbained are soon lost when selection is stopped.

THE SUMMER CARE OF VEGETABLES

(Experimental Farms Note)

Root crops, such as beet, carrot and parsnip, should be carefully weeded and thinned while the plants are still small. Parsnips should be thinned to about four inches apart; Swede turnips six to eight inches. Carrots may be thinned to one inch apart and, when large enough to use, alternate roots pulled, leaving the remainder about two inches apart. Garden beets may be similarly handled, but the final distance in this case should be about four inches. As beet tops make a very delicious early green vegetable, thinning should be done so that these tops may grow to a useable size. The soil should be kept cultivated and never allowed to bake or harden. This is particularly true with peas and beans if a tender, succulent crop is desired. Beans, however, should not be cultivated when moist with either rain or dew, as the plants, if injured under these conditions, are particularly subject to bean rust (the spores of this disease developing in the injured tissues).

Corn that has been sown in hills should be thinned to three or four plants to a hill, if the hills are two to two and a half feet apart. Cabbage and cauliflower plants require eighteen to twenty inches of space to each plant in the row, and the rows should be two and a half feet apart. The soil

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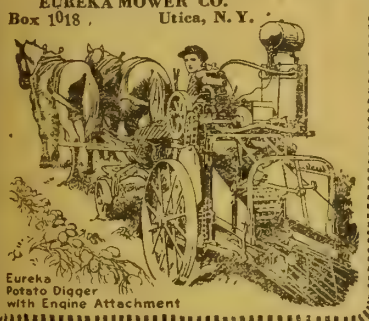
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should be kept well hoed to conserve the moisture and encourage rapid growth. Where space is limited tomatoes may be grown in rows three feet apart and the plants eighteen inches apart in the rows and tied up to stakes. Corn, tomatoes, cucumbers, squash, pumpkins and melons all grow best on a light, warm soil. Five or six cucumber plants may be grown in a hill, the hills spaced about three feet apart; squash and pumpkin three or four plants in a hill and the hills six to eight feet apart. Where the soil is rich and warm and space limited, hills of cucumber, squash and pumpkin may be planted between alternate rows of corn.

Potatoes should be thoroughly cultivated to conserve all possible moisture; "ridging up" also supplies the tubers with loose soil in which to develop. However, in areas where there is a light summer rainfall, level cultivation will conserve the limited soil moisture more satisfactoryily. Spraying should not be delayed until there are signs of injury from the well-known potato beetle, or from one or more of the many potato diseases. Paris green and arsenate of lead have been found very satisfactory poisons for the beetle and can be applied at the rate of one ounce of Paris green to four gallons of water, adding an ounce of lime to neutralize any free arsenic present. Arsenate of lead adheres better to the foliage than Paris green and may be applied at the rate of one ounce to a gallon of water, if the paste form is used, or one ounce to two gallons if the powdered form is employed. Bordeaux mixture may be made up in small quantities in the following manner, employing wooden pails for mixing the spray. In each gallon of water dissolve two ounces of copper sulphate (bluestone) slake one pound and a half of quick lime (unslaked lime) in one gallon water, stir thoroughly and then add one pint of the lime water for each gallon containing the two ounces of dissolved bluestone.

SPRAYING MEETINGS

Mr. Geo. E. Sanders of the Dominion Entomological Laboratory, Annapolis Royal, N. S., has just completed a series of spraying meetings among the potato growers of Carleton and Victoria counties, New Brunswick. All the growers who availed themselves of the opportunity of hearing Mr. Sanders felt that they had been benefited. Farmers were invited to ask questions and relate their spraying experiences. Not a few, learned that they had not been mixing their Bordeaux properly and were put on the right track for efficient mixing. Others were using the most expensive poisons and not getting the most efficiency at the high price. Mr. Sanders enumerated the various poisons for sale in New Brunswick this year. He described the action of each poison. Not a few farmers reported burning of the leaves of their potatoes, and on explaining the poison used and how used Mr. Sanders was able to show them how they may guard against a repetition of the burning. He also showed the growers how they may make a considerable saving in purchasing their poison requirements.

He is at present experimenting with certain lines of poisons which according to all indications are going to prove a success and which will mean a saving of at least $50,000 per year to the Carleton county farmers. It will be well for all interested potato growers to keep in touch with Mr. Sanders and his work this year.

Fruit Packages

We Manufacture Strawberry Boxes and Crates for same, 6 qt. Baskets, Apple Boxes, Box Shooks, Apple Graders, Wheelbarrows. Now is the time to lay in a supply of Fruit Packages for the coming season. We have a good stock on hand, order early and ensure prompt shipment. Price on application to

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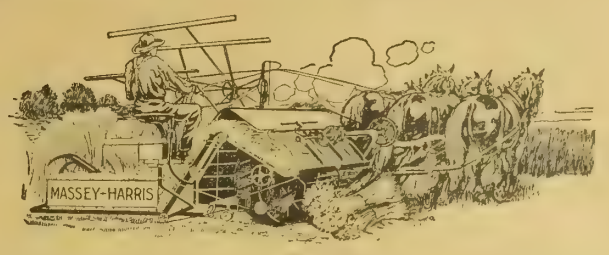
STRAWBERRY CROP

There are several important insects which do severe damage to strawberry plants and greatly reduce the crop every year. In Bulletin No. 92 "The Strawberry and Its Cultivation in Canada", prepared by W. T. Macoun, Dominion Horticulturist of the Dominion Experimental Farm, and obtainable from the Publications Branch, Department of Agriculture, Ottawa, information on these insects is given, along with methods for their control. Common strawberry diseases and remedial measures as well as general instructions for the gardener who is interested in growing this fruit are also included in this bulletin. Occasionally the yield of fruit is severely reduced by the strawberry weevil. This is a small dark snout beetle which cuts off the blossom buds. Early varieties of strawberries appear most subject to serious injury. In addition to clean cultivation protection may be obtained by coating the plants with a dust composed of one part (by weight) arsenate of lead and five parts finely ground sulphur.

Massey-Harris



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The Massey-Harris Binder takes all the worry out of Harvesting, for its owner knows that no matter in what shape the grain may be, his "MASSEY-HARRIS" will handle it and get it all. Years of actual work in the field have proven that for heavy crops, or down and tangled grain there's nothing to beat the Massey-Harris Binder. Thousands of farmers now look forward with happy and easy minds to harvest, in contrast to the old-time anxiety that accompanies uncertainty, because with a Massey-Harris Binder they take no chances—it gets all that grows.

Trussed and re-inforced at every supporting point, it is unsurpassed for strength and permanence.

The Reel can be set in seventy different positions, from sweeping the Guards to 31 in. above the Knife, all positions being obtained through one Lever which is within easy reach of the driver. An Adjustable Reel Brace prevents the Reel from sagging.

The Knotter, so simple, with nothing to get out of order, always ties a perfect knot and ties it tight, with the band in the centre of the grain.

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Bordeaux mixture is the only reliable preventive for certain diseases of plants, and must be used despite the high price of copper sulphate.

Physical properties, such as adhesiveness, texture, spreading quality, and rate of settling are important factors in determining the efficiency of Bordeaux mixture.

The grower should regard spraying as an insurance and preventive and should always be prepared for an epidemic of the disease he expects to combat. If he wishes to secure good control, he should therefore use a preparation equivalent to the Standard Bordeaux mixture recommended for that purpose.

KEEP TOOLS SHARP

As a rule, persons who esteem their gardens lightly also keep a poor sort of tools. And we think that some of us who lay much stock by our gardens may also frequently be found wanting in this respect. We once saw a proverb to this effect: "If the iron be blunt, then must he put to it the more strength."

Keeping sharp tools means economy in strength. We never liked to work with old, dilapidated, dull tools. Somehow, there is a sort of enjoyment in working with a bright, sharp, well-set tool. To have the tools respond to our least effort gives us a greater respect for our work and naturally we pride ourselves more on what we accomplish. Looking about us we think that the farmer who takes no pride in what he does, never gets far. We find that after putting the hoes, spades, weeders, and other garden tools in good shape, we can keep them in good working order with a file for some time. An old knife has been found good to scrape the rusty places, and scouring will then be easy.

What is more discouraging to a boy or girl than a tool that is out of working order? It is difficult enough matter to interest many of our boys and girls in farm life at best, and then drowning out the little bit of interest they have taken by giving them poor tools, is a matter not to be considered lightly. By all means, give them good sharp tools and when they see what can be done they will take a sort of pride in their work, and the chances are they will stick.

PLANT LICE

Plant lice are green, pink or black in color and are so small they often escape notice until their numbers become so great they affect the appearance of the plant. Frequently, the presence of ants and the ants arebia presence of ants attracts attention and the ants are blamed with any injury that may result, but a close examination will reveal the sofe-bodied aphids or plant lice.

Spraying infested plants with nicotine sulphate to which has been added dissolved soap will kill plant lice. The nicotine sulphate can be purchased at drug stores and of dealers who handle spraying solutions. The commercial 40 per cent nicotine sulphate diluted with 800 parts of water, with two pounds of dissolved soap added to each 50 gallons, is a very effective spray, if it is applied properly. The plants must be sprayed thoroughly, being sure to get on the undersides of the leaves.

DAIRYING

FEEDING COWS ON PASTURE MEAL.—DOES IT PAY DAIRYMEN TO DO IT.

It is doubtful if any other farm subject has caused more discussion among dairymen in recent years than that of feeding concentrates to cows on pasture. It has always been a leading topic at cheese efactory and institute meetings and farmers' gatherings, where the opinions and expressions of dairymen have been freely expressed.

The contention of many good dairymen has been that it does not pay, others maintain, and with very good reason, that it can be profitably done provided the cows are given a rest from concentrates during the period of abundant pastures, usually during the month of June, while some argue that it does not pay to start feeding meal until the cool weather begins in October. The upshot of the whole controversy has been that neither the advocates for nor the objectors against have won many converts and the controversy still hangs in the balance.

However, after considerable study and investigation work carried on by agricultural authorities it is quite apparent that the answer must depend upon three factors. First and most important is the producing ability of the cows. If they are good producers they will return a profit, while the cows of low producing ability will not give sufficient returns to pay for the expensive concentrates they will consume. The second factor is the selling price of the milk and the third the cost of mill feeds. The former must be good, and the latter not too expensive.

As all good dairymen know the maximum milk flow under normal conditions is obtained during the months of luxuriant pastures, June and early July. During these months the ordinariy low-yielding cow produces her maximum yield of milk and it is doubtful if the feeding of expensive concentrates will make any material increase in her yield as long as the pastures are at their best and conditions ideal. But with the well-bred high-producing cow it is different. Her system has become concentrated upon milk-production to a very marked degree; the production of milk is her main object. The result is that such a cow cannot eat sufficient roughage or grass in a day to produce her maximum yield, consequently if she is to do her best, concentrated feeds must be given.

When pastures get short, the weather hot and flies bad, it is natural for cows to decrease in their milk yield, and any famer who has tried to keep a herd milking well by feeding meal has realized how difficult it has been, and the amount of meal required. But not so with the man who feeds meal steadily. His cows have been gradually building up and storing energy, and conseequently suffer less from the unfavorable conditions and do not decrease in milk yield, neither do they require so much meal to keep them milking heavily. Then later on towards fall when the weather gets changeable and often wet, the cows that have been fed steadily make a much better showing than those allowed to depend upon grass only. Furthermore, it has been found that cows given a fair allowance of meal throughout the summer months go into the stable in much better condition in the fall, go right along on winter rations and do not mind the change from green pastures to dry feed very much, consequently produce more milk during the winter months. Very often their lactation period is also longer.

On the other hand feeding cancentrates will effect a considerable saving in the meal bill. This roughage may consist of corn silage, soiling crops cut green, alfalfa, or one of the many other feeds available in midsummer. By following such a system the heavy feeding of expensive concentrates will not be found necessary, as experienced by the majority of successful dairymen.

The whole matter is simply a question of favorable local conditions and efficient management. If the cows are heavy producers, the milk sold for a remunerative figure, and meal can be obtained at reasonable prices, it will pay to feed concentrates the year around and more so if some green roughage is fed during the summer months. But, if the cows are low producers it is a very doubtful proposition and the only way to work it out is to try it for a year. At any rate the farmer will break even and he will then know whether or not to continue. It is a noticable fact, however, that the farmers who start feeding meal throughout the summer months continue the practice, which is about the strongest argument in its favor.

TEACHING THE BOYS AND GIRLS TO MILK

One of the most useful things a farm boy or girl can do is to learn the art of milking cows. Milking is easy or hard, according to the way it is done. Some learn more quickly than others. Some boys become better milkers than some girls while some girls make better milkers than some boys. Some persons it seems can never learn to milk well and rapidly. It may be because they do not like cows and do not want to learn. It may be by nature that hands, fingers and muscles are not adapted for this kind of work.

However, almost any farm boy or girl more than ten years of age can learn to milk cows right well. It is not a good thing for one to try to learn too young as a small person cannot hold a milk pail well enough and has not the strength to milk a cow rapidly and clean. It is never well for a child to try to milk a cow that will kick or has other bad habits. She should be left for older persons to milk.

It is a good thing for young folks to learn to milk cows and especially boys. The knowledge may become valuable some day when one goes out to make a living for himself. Good dairy help is in demand at good wages. If one learns to milk and knows how to handle dairy cows well when he grows up and should want work he will have no difficulty in finding a good job with dairy farmers. He can always make good money for better wages are usually paid the good dairy hand than to the common farm hand. A dairy education is one of the best educations a young person can acquire. One can learn a good share of this valuable knowledge right at home on his own farm by assiting in the milking and the care of the cows. It is a cheap but valuable schooling. One produces something while leanring.

Another good feature about farm boys and birls learning to mik is that the work can be done in a short time every morning and evening. It need not interfere with going to school or any of the other duties in the least. It will be a great help to the parents. What a young person learns about milking and milk will also be an aid in a better understanding of his or her regular school duties. This extra knowledge gained in the dairy will be a great aid to the young folks when they attend high school and especially when they attend college.

But how are we to go about milking? First we must learn the disposition of the cows and make them learn to like us or at least stand quietly while being milked. Kindness will win more from the cow than unkindness. Milkers must be quiet at their work. Dairy cows are quiet-dispositioned animals. They are disturbed and made nervous by loud talking and cruel treatment. Good dairymen and good milkers never strike their cows in any way no difference what the cow does. If she is bad, abusing her will make her worse. Talking to her gently and stroking her well will usually make her quiet and gentle. Some cows of course are easier handled than others but kindness and patience will win in the end with most of them.

One of the first things to learn in milking is to secure all the milk the cow will give at one time. One must learn to milk clean. Taking the last milk is called strippings. The strippings are the richest part of the milk, containing the most butter fat. If a small amount of milk is left in her udder she will give less milk at the next milking. If she is not milked clean for many days at a time she will drop in her yield and thus not be as profitable as she otherwise would be. Clean milking will help greatly in making her continue to give a large flow of milk. Rubbing and kneading the udder toward the close of milking will make the cow give a little more milk each time. This is important for a little more milk at each

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milking will mean a big difference in a year's time.

Another important thing in keeping up a strong milk flow with cows is regularity of milking. Many cows dry up or stop giving as much milk as they otherwise would because they are milked at irregular periods for the day. Never omit milking a cow at her accustomed milking period if you wish her to continue to give much milk. But when you wish a cow to go dry or stop giving milk, skip one milking period for each day and do not draw quite all the milk from her udder. She will then go dry or stop giving milk within a short time without any udder trouble.

Clealinness is a very essential feature in milking. Be sure that your clothes, hands and pail are clean. One of the partly closed-top pails is the best kind to use. Before beginning to milk, wipe the flanks and udder of the cow with a damp cloth and then wipe them dry. This will prevent hair and particles of dirt from falling off the cow into the milk pail. The boy or girl who likes cows, likes to be around them and handle them will not find it difficult to learn to milk and will delight in doing the work.

THE DUAL PURPOSE COW

What are the requirements of a dual purpose cow? The question arises around the trend of things in regard to the supply of both milk and butter, and the resultant effect of the one detail of the cattle breeding industry on the other. In many discussions at farmers' gatherings, there seems to be a misunderstanding in regard to the term dual purpose. At least if there is not a misunderstanding there is a tendency for the argument to drift to comparing the dairy Shorthorn with the Holstein, Ayrshire or any of the other dairy breeds. There is plenty of room in Canada for the development of the cattle breeding industry, but there is no room for breed or class prejudices in the keen competition that will follow the financial needs of every country. In the immediate future there must be an equal pulling of the cattle breeding team, before the national prosperity wagon gets moving towards the export trade that must be catered to, both in beef and dairy products.

Dangers of Dual Purpose Breeding

The leading dual purpose breed is the Shorthorn, but though this particular breed is naturally adapted for this characteristic, there is existing danger in developing dual purpose cattle. Many who have started out to breed dual purpose Shorthorns are destined to make a failure in so far as adhering to the double purpose is concerned, unless they pay more attention to beef and a little less attention to milk. It is not impossible to breed a very high type of cattle that will produce a fair amount of milk, and still possess the conformation necessary for them to be included as very good specimens of beef animals.

The whole tendency on the part of some breeders seems to be towards milk, and they go into the game of producing dual purpose cattle, seeing nothing but heavy milk production. The danger to the breed or the dual type lies in the man who looks for conformation that denotes milk formation alone. He never looks much above the cow's underline; her udder, milk veins and wells are about all he examines, and a cow that fits him there is generally, slim-necked, narrow chested, sharp on the back; an all round mean individual from a beef point of view. The black and white Holstein has been developed to meet this single purpose of milk production by the highest attainment in breeding art, and there is no reason for Shorthorn breders seeking to raise a red and white Holstein. If the cattle bred and named dual purpose Shorthorns are to be real dual purpose animals, first attention must be paid to meat, and with it get as much milk as possible without seriously injuring the beef tendencies of the breed.

Laying Dual Purpose Foundation

In laying the foundation for a dual-purpose herd the buyer or breeder should be well satisfied with cows that give from 6,000 to 8,000 lbs. in each lactation period, provided these cows show good beef type and Shorthorn character. Pushing for high records is bound to be carried too far and will result in dairy Shorthorns, a class of animals which should not be eligible to be called dual-purpose. The name "dairy Shorthorn," is a misnomer because, under existing conditions, there is no excuse for such animal. We have our distinct dairy breeds which fill the bill for milk and cream as well as one could expect, and we have our distinct beef breeds which produce the acme of excellence for the block. The place for the dual-purpose animal, and it has a very large place in Canada's agriculture, is on the average farm, where the man is so situated that he can make more by a combination of a fair supply of milk and good beef calves than by straight beef or straight dairy operations. In order to breed and maintain a herd of the kind of cattle that will produce good steers it is necessary that attention be paid to meat, and that milk production be not overestimated or over-worked. A great many of the breeders who are enthusiastic over the dual-purpose cow are headed straight for a red and white dairy cow, which is a mistake.

Avoid the term "dairy" in speaking of any type of Shorthorn cattle, and stick closely to the requirements of a good all-round cow, namely, meat as well as milk. This will necessitate some attention to the size and general ebef qualities of the cows used in the herd. Select nothing but the big, roomy females which give evidence of being able to produce a good calf as well as a fair-sized pail of milk. Forget about the 15,000 and 20,000-lb. records, and lay more stress on the 15,000 or 1,800-lb. mature steer, or the 1,000-lb. baby beef at twelve to fourteen months of age. Dual-purpose means serving two purposes, not simply giving milk.

The quantity of milk that a cow gives does not always determine her value . Th ecost of production is a factor that must be considered. Some cows give twice the quantity of milk on the same amount of feed.

Thoroughly clean milking is important, not only as a means of developing the milking power of the cow, but also to produce richer milk.

To prevent bloating in cattle the herd should be shifted by easy stages from dry or scanty feed to abundant or luxuriantly growing fodder.

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The ALPHA is also efficient because of its conservative power rating—each size has a generous reserve power above its rating, which permits of occasional overloads.

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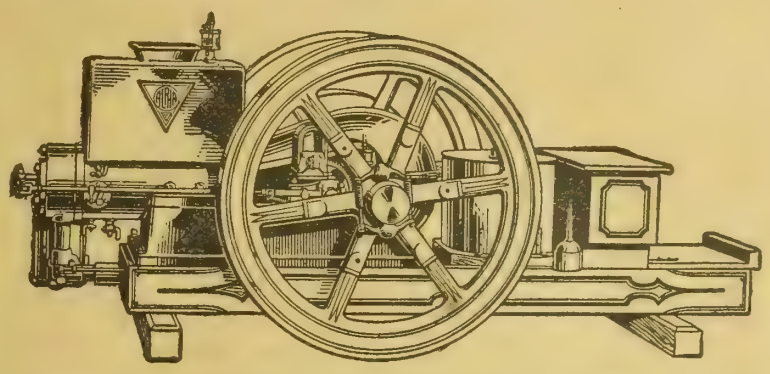

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LIVE STOCK.

COMMON DISEASES OF CATTLE

Troubles of the Respiratory System

The Cow in Health and Disease is the title of a new agricultural book just out of which the Burton Publishing Co. of Missouri are the publishers. Written by G. H. Conn, formerly veterinary inspector for the Bureau of Animal Husbandry of the U. S. Dept. of Agriculture, it embraces the fundamental principles of hygiene, the proper care and treatment in all common diseases.

It is a good practical book for dairyman. From it the Ottawa Farm Journal takes the following:

Cold in the Head

Cold in the head, also known as catarrh of the head or sometimes rhinitis, is most often brought about by animals that are accustomed to shelter being exposed to damp or stormy weather. This condition is usually mild and very seldom fatal, but if complicated by a severe sore throat it is sometimes fatal. It may also be caused from irritating or noxious gases. At first a reddening of the lining of the nostrils and eyes is noticed. This is quickly followed by a watery discharge from the eyes and nose. At first not much attention is paid to this condition but the discharge becomes more profuse and the animal develops a high temperature and the discharge may become heavy and contain pus. The animal becomes greatly weakened and is dull, does not move around much, has an impaired appetite.

The first thing that should be done is to get the animal into a warm yet well ventilated barn. If cold, blanket the animal. All drinking water should have the chill removed. Only the best of feed and that in small quantities should be given. Take six ounces of spirits of camphor and two ounces of fluid extract of belladonna and give one (1) tablespoonful of this mixture in a little water as a drench about every three or four hours. Good care is the most essential thing in the treatment.

Bleeding from the Nose

This condition is often spoken of as epistaxis, and is quite rare in cattle. It may be the result of injuries the same as in other animals, but it is not at all common. In aged cows in an unthrifty condition we have sometimes seen quite a severe hemorrhage or bleeding from either one or both nostrils. This usually takes place from a month to six weeks before the pregnant cow gives birth to her young. Does not occur in cows that are not with calf. The bleeding may persist until several pints of blood has been lost and then cease of its own accord, but many times leaves the animal in a weakened condition. If this condition is not properly treated these hemorrhages may recur at intervals of a week or ten days and then at calving time if the cow experiences any great difficulty in giving birth to her young it may leave her in such a physical condition that death will result.

Keep the animal quiet and bathe the head and nostrils with cold water. Apply cold water to the head. Tie the head up to a rack or beam. If it does not stop within a reasonable time call a veterinarian who can either use stypic injections to check it or hypodermics of adrenalin. To prevent the recurrence of the hemorrhages take eight ounces of the tincture of iron chloride and of this give two (2) tablespoonfuls in water as a drench, night and morning until the cow has calved when all danger will have passed.

Bronchitis

This is an inflammation of the mucous membrane lining the main bronchial tubes, be they the main bronchi or the capillary bronchial tubes. This condition is most often spoken of as catching cold. It in itself is not often fatal, but if complicated with other diseases it may prove fatal.

The animal's temperature may go up to 104 or 105 degrees. A cough is present which may be and usually is indistinct and incomplete. The inspirations are incomplete and short and gives the animal much pain. The expirations are prolonged. By placing the ear over the lungs various sounds may be heard corresponding to the extent to which the disease has progressed and the amount of exudate that is present. If, however, these bronchial tubes fill up with fluid the animal dies from suffocation. The appetite is lost and the pulse is fast and hard.

The animal should be placed in a well ventilated and comfortable box stall. The bowels should be kept in good condition by the use of laxatives and proper feeds. Keep the cow warm even though it requires blanketing. Use the following: Fluid extract belladonna, 2 ounces; spirits of camphor, 4 ounces, and aromatic spirits of ammonia, 10 ounces.. Give two (2) tablesoopnsful in water as a drench three times each day. The animal should be fed lightly and it should be of the best quality. This condition is apt to become chronic and then not a great deal can be done for it in many cases. If the case seems severe from the start a competent veterinarian should be employed.

Pleurisy

This is an inflammation of the membrane lining the chest cavity and that covering the lungs. It is rarely found as an independent disease, but usually found associated with pneumonia and is no doubt cased by the same disease germ. It may occur as an independent disease due to a fractured rib or a deep punctured wound.

When the animal is first noticed it has a great deal of pain. It does not move around much and when it does it will move as though foundered. The breathing is very fast, but is mostly abdominal and very shallow. The ribs are fixed. Movements of the animal causes the animal to evince pain. A short grunting sound is heard most times in breathing, and the expiration is much longer than the inspiration. The muzzle is hot and dry and the appetite is absent. The animal is constipated and the temperature will be around 105 or 106 degrees Fahrenheit. If the ear is placed over the chest cavity a hoarse rasping sound is heard, and this is caused by the rubbing together of the two inflamed surfaces. After a couple of days the temperature drops to 103 or 104 degrees and the animal begins to eat and secretions of the serous membranes begin to fill up the chest cavity and the sounds become less harsh as the cavity fills up. If medicinal treatment can not stimulate the absorption of this fluid in the cavity, the animal gradually grows weaker, the breathing shorter and more hurried and the animal has an anxious haggard expression, which is soon ended by death. If a veterinarian can be had that can perform an operation and draw off this fluid from the chest cavity from time to time it may be the means of saving the animal's life. Death will not usually occur sooner than from ten days to two weeks, nor later than the third week.

Give the animal the same general care as recommended for bronchitis. Keep the bowels active. Give the same treatment for the cough here as mentioned under bronchitis. Take of fluid extract of byrony and one (1) tablespoonful in a little water every three hours; this will very materially assist in the absorption of the exudate. Take of oil of mustard one half ounce and petroleum eight ounces. Thoroughly mixed, rub in on each side of the chest over the lungs. Do not rub too vigorously; this will have the same effect as a mustard plaster and is much easier kept in place. If the life of the animal is threatened it requires an operation as mentioned above which must be performed by your veterinarian.

Pneumonia.

This condition is divided by most authors in at least three different types or classed in three different groups, but we feel that very few individuals can differentiate between these conditions clinically, and as the treatment of them all is practically the same, we will speak of it simply as pneumonia. All of these types are caused by the same germs and the only difference is in the way the respiratory organs are affected.

The condition immediately preceding the pneumonia of cows is congestion of the lungs. The animal may be seen having a chill which may last only two or three hours or which in other cases may last several hours. This may be of short duration and escape the attention of the attendant. The temperature will be found to be 105 or 106 degrees Fahrenheit, and occasionally even higher than that. The respirations are greatly accelerated and very shallow, the pulse is quick and hard and the nostrils are dilated; a cough may be present at this time. The nose is hot and dry and the animal is usually constipated. Pressure between the ribs over the lungs gives the animal pain. The animal stands with the forelegs spread apart and the elbows turned outward. The hair is standing on end and the skin is harsh and dry. On placing your ear over the region of the lungs a soft crackling, snapping sound will be heard. During this time the animal stands most of the time. After this first stage has passed the temperature drops somewhat and the animal lies down most of the time. The expression becomes haggard and the pulse becomes hard and wiry. The secretion of milk is almost suspended. The sounds of the lungs are nothing but a whistling or wheezing sound. If the lungs could be seen at this time they would very much resemble the liver in appearance.

If the animal is going to recover the cough becomes loose, and the other symptoms begin to subside, the appetite returns and the animal is generally improved in all ways. If, however, the case is not progressing favorably the breath will have a foetid smell and is taken in very short gasps. The extremities are cold and feel clammy and the pulse can not be felt. These symptoms are an indication that death is a matter of a very short time.

It is doubtful after the first symptoms of pneumonia have developed if it is possible to abort the disease, but we do feel that if intelligently handled at this time that the severity of the attack can be so lessened as to make it a comparatively slight ailment in many cases and greatly lessen its effects in most others. This condition should be treated early, as this is the time when the real good is done. In this condition the more fresh air the better, just so there are no draughts. Blanket the animal well and then see that there is an abundance of fresh air. See that the bedding is clean and plenty of it. The chill should be taken off the drinking water. The feed should be given often and in small quantities and should be appetizing. The first thing to do after blanketing the animal and making it comfortable in the right surroundings, is to apply a coating of the mustard and petroleum as referred to above. Have your druggist put you up several powders of Sparteine sulphate, each containing 30 grains, and dissolve one of these in a small quantity of water and give every four hours. If the animal can be kept eating it will greatly favor the patient's chance for recovery. For this take fluid extract of nux vomica and gentian of each two ounces and give of this one-half tablespoonful every three hours in a little water. If the animal is constipated give a small laxative dose of Epsom salts or oil.

Heaves

This condition is also known as emphysema and is caused by a rupture of the very small air capities of the lung. It makes a peculiar respiratory action in which the inspiration is normal, but the expiration is prolonged and dfficultiy n expeliling the air from the lungs. The diagnosis can be

Bright Prospects

It looks as though the demand for beef will be strong for some years to come, and the man who is in line for greatest profits is the Shorthorn Breeder.

We haven't room to give our reasons here, but write the Secretary for our free publications, which furnish facts.

DOMINION SHORTHORN BREEDERS' ASSOCIATION

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made from this characteristic breathing. The animal is usually emaciated, hide-bound, and the coat is staring.

There is no treatment for this condition and as it does not materially affect the milk flow nor the appetite and the best thing to advise is to prepare such animals for the block, where their condition is such that they will make good meat, and why not destroy them for humanity's sake?

SHEEP ACTIVITIES IN NEW BRUNSWICK

Federal and Provincial Aid to the Farmer and Breeder

Mr. Norman Stansfield, Acting Chief Sheep and Goat Division, Ottawa, with Mr. J. M. King, Maritime Representative of the Livestock Branch, have been in Fredericton this week conferring with the Honorable J. F. Tweeddale relative to the co-operation of the two departments for the further advancement of the sheep industry. Mr. Stansfield is very favorably impressed with the possibilities for sheep protection and likewise with the progressive legislation that has been enacted for the protection and purchase of sheep by the department. While in Fredericton Mr. Stansfield visited the wool warehouse and expressed himself as being well pleased with the quantity and quality of the wool accumulated.

Some very important decisions effecting both the farmer and the breeder were arrived at. The Federal department of Agriculture is offering a bonus of $5.00 a year for two years in succession to a farmer who will use a pure bred ram. This bonus applies to farmers who have never used one before. The Honorable J. F. Tweeddale has given his assent to a provincial bonus of $5.00 for the same purpose making a bonus of $15.00. It is anticipated that this bonus will be an incentive to the farmer for the purchase of more and better rams as it will make up the difference between the purchase price of a pure-bred and a scrub. The motive is simply to demonstrate for two years the value of the pure bred sire versus the scrub, and if at the end of two years the farmer is convinced by concrete evidence, that is better lambs, then it is assumed that he will continue to use pure-bred rams, but will receive no further bonus.

Another decision affecting the owners of grade flocks was arrived at, viz. that if a group of twenty-five farmers in any district or parish will get together and appoint a representative to purchase stock, the Department of Agriculture will pay his travelling expenses to any place east of Fort William, Antario, and will, if possible, have a representative go along and help make the selection. This idea should appeal to farmers' organizations throughout the country. The representative will have to purchase twenty-five rams in order to have his expenses paid by the government.

A scheme for the grading of pure bred rams bred by the breeders of New Brunswick was also decided upon. New Brunswick is the first country in the world to adopt this method which is probably the most advanced measure yet taken by any Department of Agriculture for the protection of the farmer who buys his stud sheep by mail. Briefly the scheme is as follows: Rams will be classed as Superior, Average and Common, and will be marked 3 star, 2 star and 1 star respectively. The rams will be graded by an expert sheep man and if a farmer writes to a breeder for a 3 star ram then he will be assured that he will get a first class article. Each ram will be marked. Further, the Federal Government will bonus only 3 star and 2 star rams, and will not bonus the common or 1 star ram. Consequently, farmers desirous of taking advantage of the $15.00 bonus offered by the Provincial and Dominion Department of Agriculture should bear this in mind. The Provincial Department of Agriculture is granting a bonus of $3.00 and $2.00 respectively on each 3 star and 2 star ram produced by the breeders of the Province. 1 star or common rams will not be bonused in any way, and it is hoped that these 1 star rams will be finally eliminated from the trade.

SENSATION IN AYRSHIRE CIRCLES

The shipment of 91 head of registered Ayrshires from Quebec to California has caused quite a stir among Ayrshire enthusiasts. This is the biggest deal in Ayrshire stock that has ever gone through in Canada and represents a cost of over $25,000. These were purchased by E. B. MacFarland for his ranch "Steybrae" at San Mateo, and the "Penobscott" ranch in California. Mr. MacFarland and his Farm Manager Jack Glass personally made the selections, ably assisted by Gilbert McMillan, Huntingdon, Que., who looked after the assembling and shipment of the stock. This shipment left Huntingdon on July 7th, via express and made a most imposing spectacle as they were a beautifully uniform lot of good sized commercial cows, true to Aryshire type, and will doubtless do much to increase the popularity of the Ayrshire on the Pacific Coast.

The largest purchase from any individual breeder was the buying of the entire herd of James Davidson "Ayrmont" Waterloo, Que., with the exception of the stock bull. This comprised 71 head,—40 cows, 15 heifers and 16 calves. The cows were a fine lot of good big cows, 30 of which were daughters of Vaudreuil Pride 3rd., a son of Auchenbrain Pride (Imp) a bull carrying the best breeding obtainable in Scotland. Possibly the most outstaing feature of the purchase was the bunch of 16 calves sired by Auchenbrain Timekeeper (Imp), which were undoubtedly one of the strongest groups of calves by one sire ever seen together. There is no question but that they could have held their own in the calf classes in any of the Canadian or American show rings.

Other purchases included the beautiful cow "Sunnyside Governess" from J. W. Logan, Howick. She being one of the top-notchers of the purchase. From Gilbert McMillan "Maple Leaf Lily", probably the "cream" of the shipment,—also a granddaughter of Bargenoch Gay Cavalier, and a grand daughter of the grand old cow Auchenbrain Hattie 6th., (Imp). Two very fine dairy cows were got from D. MacFarlan, Howick. From J. B. Black, Lachute, came a beautiful pair of 4 year olds, "Willowhaugh Spicy Jean" and "Willowhaugh Dolly Grey" winners at 2 and 3 year olds at local fairs and 1st, and 3rd, at Ottawa as three year olds in 1918. Two sweet heifers "Auchenbay Jean" (Imp), and "Burnside Miss Courtney" 2nd prize junior yearling at Ormstown 1919, from R. R. Ness, Howick; a beautiful heifer "Lulu" from Erskine McOuat, Brownsburg, also one from Wm. Rodger, Lachute and two nice ones from Stanley J. Hamilton, St. Eustache; one from Hector Gordon, Howick, and two fine 3 year olds each from David Pringle & Sons, and Rennie Bros., Huntingdon, and Wm. Gruer, Riverfield.

THE FANNING MILL

To keep the fanning mill stationery: Get two pieces of three-eighths-inch iron, 6 in. long, sharpen one end of each, tapering gradually and triangular, four staples to fit irons. Drive two staples in the corner post near the bottom, I inch from the bottom and 2 inches apart, do the same in the opposite diagonal post. Now drop the iron pins down through the staples and drive in the floor just enough to hold tight. When moving the fanning mill lift up oc the pins and the pins can be easily taken out by tapping with a hammer.

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THE HORSE

CAN THE TRACTOR BE DEVELOPED TO BECOME THE RIVAL AND DO AWAY WITH THE HORSE

The rapidity with which the gas tractor is being introduced is one of the most remarkable developments in the machinery line for past years. The tractor undoubtedly finds the greatest field upon the farm, and where ie becomes the natural rival of the horse. I think it is well for us to note a few points of comparison in order to see whether the tractor has been made to surpass and excel the horse, where to equal it, and wherein improvements must be made in order to offer the animal serious competition at the present time.

Naturally the horse is even to day our best all-around source of work power for farm purposes, notwithstanding the fact that the tractor is being placed on a number of farms yearly, and many farms need a good tractor for the various duties to be performed.

The crop of horses this year will probably be worth on the farm five or six times the value of our entire output of gas tractors for domestic purposes. We may now compare the gas tractor and the horse on many points worthy of consideration without presuming to have covered the subject.

We could take up, for instanace, the question of thermal and commercial efficiency, flexibilitiy, attendance and shelter required, the relation of power to weight, endurance, size of opwer units, safety, and many numerous other factors, and still the list would not be exhausted, as this subject is a difficult one, and many complications enter into its makeup.

No doubt endurance is the horse's weakest point. Ten hours a day is often assumed as a horse's working period. Many authorities on the subject claim that eight hours is better for the health of the animal and some say that six hours under a heavier load will accomplish the same amount of work with less wear and tear on the horse. The average farm horse can not be depended upon for more than 15 to 16 hours of pull a day, nor more than six hours of work per day, as an average of even the busiest months of the year. A gas tractor will net 17 to 18 miles of furrow travel in ten hours and can double this in 24 hours.

Now properly handled, working about six hours a day, well and carefully fed, a horse may have a working life of ten years of about 1,000 hours each. The average farm horse will do exceedingly well to develop 500 horsepower hours per yeear, or 5,000 in a period covering ten years. A tractor carefully looked after will probably double this for each rated horsepower. This is especially true in threshing as the tractor develops about twice as much as in pulling, while a horse furnishes probably 15 to 30 per cent. less, owing to inefficiency of the apparatus through which his power is transmitted.

The horse cannot be overhauled when he wears out or when he runs down and stops. He must be kept in good working conditiion by constant attention and precaution. In this respect he is probably superior to the tractor as he demands more attention and care from the owner and from the operator; however, he needs the same care the year around, which is somehwat of a mystery, especially when the owner has nothing to do but to watch the horses eat.

Yet the horse has manay advantages over the tractor. We could consider weight, that is undue pressure upon the ground. This is constantly urged as the objectionable feature of the tractor. A horse while pulling upon the ground effects an average pressure of 25 to 30 pounds per square inch and a mule even more than this. Figuring roughly, about one-fifth of a horse's ewight may be taken as his maximum sustained draft, and six to eight miles an hour his maximum sustained speed for anything more than a nhour or so per day. The draft horse ordinarily gives the largest volume of work per day. Either his speed or load can be increased at the expense of the other until all of the horse's energy will be taken in moving himself at no load, or he will be loaded down until he can not move at any speeed whatever. Within these limits the horse has a large range of flexibility, which so far, has not been aproached by any tractor engine made. A horse for an instant only has been known to exert a draft of 1,800 pounds for 1,600 pounds in weight.

One thing more, worthy of consideration, is that a horse, if worked at his maximum working power, would not last for any great length of time, while the tractor engine is made to run at nearly full load the entire period of its natural working life, which will vary as some tractors are built better than others, and again some will be abused while others receive excellent care, and upon these things depend the length of service we may reasonably expect from them.

H. W. SWOPE.

HOOF OF THE FARM HORSE.—THE KIND THAT GIVES GOOD SERVICE

The shape of the healthy fore and hind feet of the horse are inclined to be eoval, but the fore foot when well formed should be almost circular. In the forefoot the breadth is usually greatest from side to side; in the hind foot the width is greatest from the front to the back. When the forefeet have a tendency to become like the hind feet, they are called contracted, with high boxy heels or muley feet. This is an unnatural form of hoof and any long-continued lameness which prevents the horse placing the usual weight on the foot or feet, may cause contraction. This fact should cause considerable suspicion, and call for more careful examination. A certain amount of contraction may have been caused by faulty shoeing—cutting away the bars of the foot; paring the frog so that it does not come in contact with the ground; neglect or rasping the horn of the quarters, and lowering the heels, thus preventing the expansion of feet to their healthy size and shape.

There is no reason to reject all horses with "wired-in" heels provided the horse goes sound. Contraction is not always accompanied by lameness. When the contraction takes place slowly, the bones of the foot accommodate themselves to the altered conditions.

Then as to flat soles, the weight of the body ought to be kept well above the ground surface of the foot, which should be arch-shaped; hence, the use of wedge shoes, or calking, are an evil if occasionally necessary. The cause may be congenital, due to laminitis, or abuse of the drawing knife. The degree of flatness varies much and the propriety of purchasing depends upon iit. The flatness may be just perceptible and made less noticeable by the use of the drawing knife giving a ficticious dome, but this can be detected by pressing the sole rudely and noticing if it yields or if the horse flinches.

The large flat-footed horse is frequently found with brittle hoofs, rendering the task of the farrier more difficult and it has been found that the large flat-footed animal has often a weak constitution, succumbs readily and recavers badly from febrile contagious diseases.

Of the two evils from faulty shape the muley foot is the least to fear. Low heels are undesirable; they are frequently associated with tenderness, corns, and long oblique pasterns. Long toes from wearing the shoes too long, throw a strain on the back tendons, and should lead to a careful examination of these and the ligaments before purchasing. A too oblique pastern is to be avoided, but upright, short pasterns are most undesirable in the horse; the jar, the stilty gait, and the so much weight thrown upon the structures of the feet have the result that sooner or later they will be the seat of disease, and for saddle

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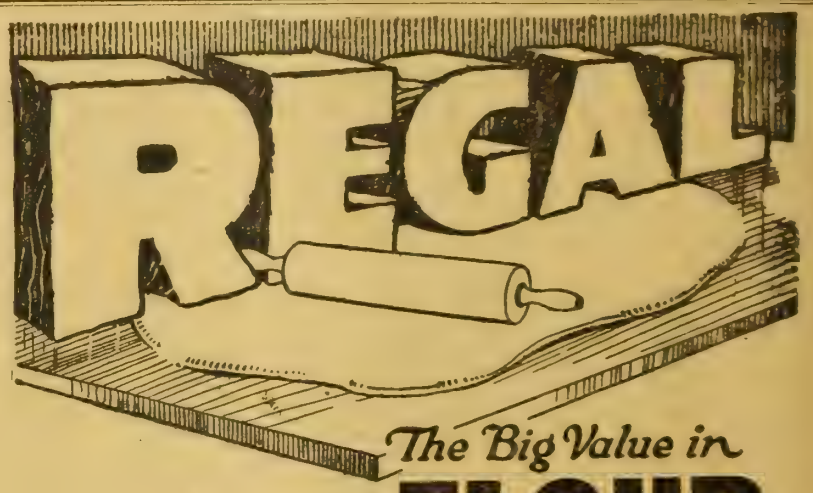

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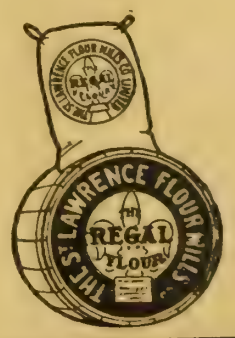

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purposes this shape is totally unfit. Toes turned out, from badly-formed legs, should never be bought for fast work; such horses are every liable to brush and tobruise the fetlocks and the ligaments, besides leading to enlargement of these structures. The opposite condition, inturned toes, is not perhaps, quite so much of an evil, but a horse with this shape is apt to be a "digger" and stumbler. Both these conditions are congenital and shoeing cannot modify them appreciably.

BALKERS AND HALTER PULLERS

Of all vices that equine flesh is heir to the most annoying to the average horse owner and driver is balking, or near balking, which consists in rearing or plunging when first asked to start, particularly after a rest of a few days, or, what is still worse, trying to start with a jump when only half hitched. The main reason that I think it is so aggravating, is that so few know how to combat it. A balky horse has the most sense, the confirmed runaway the least of any horse. I have bought more balky horses than those with any other vice for that reason. Once they are broken of balking they make the best of horses, being not afraid of the objects that usually scare those of different temperaments.

The little simple trick I am going to describe, and that has proved so satisfactory in so many cases, it not intended to break the horse of balking, which in most cases involves a lot of time, patience and more or less thorough knowledge of horse nature, but rather to help those who have been caught perhaps with a new horse that started away from home all right, but has now balked because the conditions under which he has balked before have again presented themselves. The average driver when caught in this way starts in by petting and coaxing the horse and winds up by losing his temper and beating it until stopped by passers-by or some policeman.

A horse has only one idea in his head at a time, and in this case he has decided not to go any further with that particular load, and the coaxing and petting are not sufficient to cause him to think of anything else. Whipping only makes him more stubborn and determined not to move. Now we have got to find something that will give him something else to think about.

All horses hate to have their ears hampered. In fact, no horse ever decides upon a different course of action without first moving his ears from the normal position, and here is the key to the whole idea. As soon as he balks, get down from the seat and deliberately take one ear and push it under the crown piece of the bridle, so that it is fast and leave the horse to his own devices for a few minutes. He will commence shaking his head and doing everything he can think of to get that ear loose, until he has forgotten all about balking and his whole thoughts are centred upon freeing that ear. Now let the driver get back on the wagon, call on the horse to start, and off he goes. Leave the ear where it is for about twenty minutes, then stop and free it. Let the horse have time to shake his head and be satisfied that everything is all right again, and off he will go as pleasantly as possible. As I previously stated, this trick will not break a horse from balking, but it will invariably start one that has balked on the road, provided he hasn't already been whipped and abused to a point where nothing matters.

The vice of halter-pulling is a very troublesome one, but I believe that any halter-puller can be cured of the habit. Any one of the following named methods will give good results. Take an inch rope, fasten a good heavy ring in the end to make an easy-running noose. Put the rope around the body of the horse just in front of the hip bones, that is, around the flanks. The ring should be under the belly. Now take the loose end of the rope, bring it up between the front legs and through the halter ring. To tie out-of-doors, tie if possible to a strong, springy limb of a tree or a small tree that will spring some when the horse pulls back. Repeat this treatment until the horse ceases to pull back, whenever you have occasion to tie him, whether in the barn or out-of-doors. Do not forget the ring, so when the horse quits pulling an jumps ahead the rope will loosen, and be sure to tie him whether in the barn or out to something he cannot break.

Another method is to tie a rope around the horse's neck and run it through the halter ring, then through a large hole in the manger, and fasten the end of the rope around the left front foot below the fetlock, letting the rope be long enough, so that he stands natural. When the horse pulls back he lifts the front foot off the ground, and in order to put it down again he has to step up. He may be left tied this way all day. A stran with a ring in it should be used around the pastern to tie the rope to. The horse may also be hitched to the hitching rack if a large staple is driven in the rack on the opposite side from the horse to pass the rope through freely and keep it from slipping sidewise. It doesn't take long to cure a halter-puller by this method.

Here is an effective cure for a persistent puller. Put on an ordinary halter. Have a rope long enough to run from the halter through the hole in the manger or hitch rack and then through a pulley in the barn ten or twenty feet from the ground. The rope must be long enough to go from the halter as described, through the elevated pulley and down to the ground. Now tie a 100-pound weight on the end of the rope, allowing the horse about two feet of slack at the halter when the weight is done. A horse can thus be tied anywhere outside where a pulley can be elevated so he will learn to stand with a slack rope, as he finds he cannot break loose and the weight is on his neck every time he tightens the rope.

Another method is this. Take about thirty feet of half-inch rope, put it under the tail close up like a crupper, and cross it on top of the rump. Pass the ends through the halter ring, then tie to something solid, and let the horse pull. He will be very much surprised after he makes one trial.

THREE-YEAR-OLD MARE HAS LYMPHANGITIS

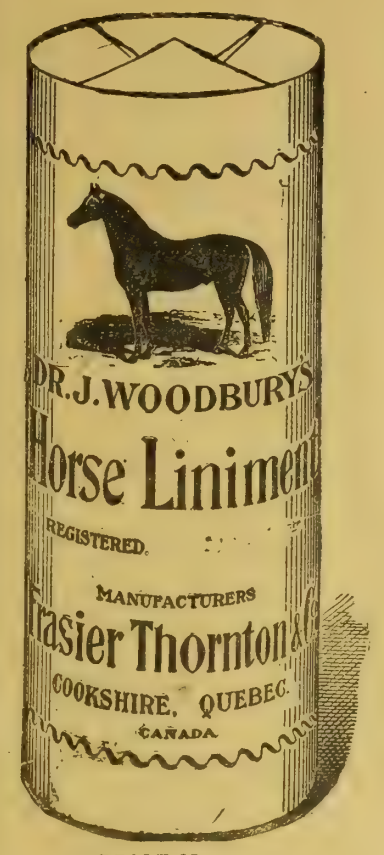
I have a three-year-old mare suffering from a badly swollen leg. It is paining her, and has every appearance of lymphangitis. What can I do for it?
W. A. R.

The symptoms of the disease you describe indicate inflammation of the absorbent vessels of the hind legs. It may extend to the cellular tissue, become chronic and produce effusions and permanent swelling of the leg. It gets the names of lymphangitis, weed, or shot of grease, and is generally attributed to high feeding without sufficient exercise; over-feeding of green food or intestinal irritation of various kinds. Large coarse horses with thick legs are particularly subject to it. Horses that have been once attacked by this trouble are liable to a recurrence of the malady, time after time, until the limb assumes permanently an enlarged and distended condition, injuring both their appearance and usefulness. Keep your mare free from cold draughts of air and give her a moderate purge, consisting of a drench made of six drachms of powdered aloes, and a tablespoonful of powdered ginger in a pint or so of water. Foment the leg well with cloths wrung out of hot water, keep the bowels loose, and give as a drink an ounce of saltpetre in a gallon of water two or three times a day. To prevent the condition of "thick leg" that many times result from repeated attacks, rub the leg with a stimulating mercurial ointment made as follows: Red iodide of mercury, one drachm; lard, two ounces. A piece the size of a walnut should be rubbed into the swelling every day.

HORSE HAS MANGE

I have a horse that has a skin disease over his entire body, especially in the long hair on legs, tail and mane. The skin is persistently dusty and the hair tends to come out. What can I do to get rid of the trouble? W. H.

There is every indication that your horse is suffering from mange. Of all the skin diseases on horses this is by far the most to be dreaded on account of its contagiousness. Any animal that has it should be shut off from all others, and active measures taken to clean thoroughly every blanket, every piece of harness, brush, curry-comb or other utensil that has touched him. tSall posts, mangers, gates, rubbing posts and trees should be carefully washed with hot water, and carbolic acid or similar disinrectant or lime washed. Whatever remedy is applied the horse the parts should be washed with warm water and soap, to remove the crusts, dirt and scabs, before ointment or curing application is administered, otherwise it will not reach the insects that burrow in the skin. The following ointment will serve to eradicate the trouble if persistently applied. Flour of sulphur, two ounces; ten ounces of hog's lard; half an ounce of carbolic acid, mixed together. Wash the animal thoroughly every time and also dry it well before every application of the ointment.



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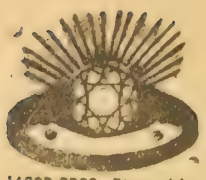

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POULTRY.

THE NOVA SCOTIA FIRST ANNUAL EGG LAYING CONTEST

To be held at the Poultry Department, Agricultural College, Truro, N. S., commencing November 1st, 1919 and continuing for eleven months until September 30th, 1920.

Rules and Regulations

This competition will be known as ——The First Nova Scotia Annual Egg Laying Contest. tI will be conducted on the Poultry Department of the Agricultural College, Truro, and under the direction of the Superintendent of Poultry and Manager of the Poultry Department of the Agricultural College.

Board of Management.

The Board of management will be Superintendent of Poultry for the Province of Nova Scotia and Manager of the Poultry Department of the Agricultural College, a Superintendent for the Contest (to be appointed) and Mr. H. H. Hull, Glace Bay, President of the Nova Scotia Poultry Association together with Mr. W. W. Osborne, New Glasgow, and Mr. John R. McMullen, Truro, N. S.

Scope and Number of Entries

The Contest will open to the Province of Nova Scotia. It will consist of 30 pens of five females—hens or pullets. The first 30 bonifide applications received accompanied with the entry fee will be the thirty accepted. Contestants will be privileges to maintain throughout the year a full complement of five birds. No males will be included.

No reserved birds will be required or accepted, and held subject to the loss of any birds in given pen. The owner, therefore is requested to have in readiness reserved birds which can be immediately shipped upon notification of the need of such a bird in any pen. In other words the owner will be given the privilege of maintaining a full number of 5 birds in the competition pen throughout the duration of the contest.

Fees

The entry fee for each pen will be $5.00 which must accompany the application. Applications are to be made on the printed form supplied with rules and regulations. All entry fees will be used for prizes in this competition.

Prizes

Suitable prizes will be awarded to the winning pens.

Delivering the Birds.

The birds must be delivered at Truro, express prepaid, between the first and fifteenth of October, 1919. The shipment should be addressed (Laying Contest) Poultry Department, Agricultural College, Truro and must also have the name and address of the shipper plainly marked on the shipping crate.

Rejection of the Birds.

Any birds arriving in a sick condition may at the discretion of the Contest Superintendent be rejected and either destroyed or shipped back to the owner at his expense. None but pure bred birds will be accepted and only those breeds that lay a marketable sized egg will be permitted to enter contest. The Superintendent also will have the right to clip the wings of any birds that may prove troublesome. No person connected with the Agricultural College, the Agricultural College Farm or the Department of Agriculture will be eligible to make entries. The right is reserved to refuse any and all entries.

Standard for Judging.

The rating of the birds or pens will be determined by the number, together with the size, the uniformity and marketing value of the eggs. The Canadian Standards for eggs will be used in rating the value of the eggs. The cost of Production will also be taken into consideration in rating the standing of the pens. All eggs produced will be retained by the management and sold to help defray expenses of this competition.

Feed and Care

The birds while in the contest will receive the best of feed and care but this will be subject to the judgment of the Board of Control. Each contestant will be entitled to the record of each bird he has in the contest and to a statement showing the receipts for eggs and expenditure for feed, etc. for his pen for the eleven months. Any birds in the contest which can qualify for the Canadian Poultry Record of Performance will be provided with pens to complete the 12 months test required.

No person except Officials of the contest will be allowed in the pens or yards after the birds have been housed. Every effort will be made to keep the birds quiet and no interference with them for the feed will be permitted. All pens will be trap nests during the contest. A detailed printed record will be presented to the contestant at the conclusion of the contest. Weekly reports will be sent to each contestant and complete monthly records will be prepared for the press.

Housing

The contest will be housed in double colony houses, 12 x 12 feet, divided into two pens having glass and cotton fronts.

The houses will be placed on the Poultry Plant of the Agricultural College on a plot of ground East of the main Poultr Building and will face the South. Each pen will be provided with a ard 20 x 50 feet.

Reports

A summary of the standing of each pen in the contest will be compiled at the close of each month, a copy of which will be supplied the owner of each pen. The co-operation of the Local and Provincial Press has been solicited and regular reports of the contest and its progress will be provided the papers that will publish it.

Return of the Birds

If no notification as to the disposal of the birds has been received by September 1st, 1920, the birds on the completion of the contest will be sent by ekpress collect to the owners address from which the shipment was made. No competitor shall be permitted to withdraw any of the fowls during the period of competition unless permission is granted by full vote of the Board of Management.

Entry forms will be supplied on application by addressing Superintendent Poultry Department, Agricultural College, Truro. All entries will be accepted according to provision of these rules and each contestant agree to abide by the above mentioned rules and regulations.

Entry Form

To J. P. Landry,
Poultry Department, Agricultural College, Truro.

Dear Sir:

I hereby enter one pen of..... for the First Annual Nova Scotia Egg Laying Contest and enclose herewith $5.00 in payment of entry fee. I hereby agree to the rules and regulations governing this contest which I have read.

Name.....
Address.....
Date.....

MARKETING OF POULTRY PRODUCTS

(Experimental Farm Note)

Marketing has much to do with the success or failure of any poultry plant. No matter how successfully the plant may be run if the marketing end of the business is not properly looked after the whole enterprise will sooner or later end in failure.

Every producer should get the best price possible for his products, and to do this it is necessary to pay particular attention to their quality, and the season at which the products are sold.

Eggs.—Eggs should be gathered regularly and often. All small and dirty eggs should be retained for home use or sold separate from the rest.

The eggs should be neatly packed—if for private trade, they are made more attractive if put into neat cartons.

The sooner the eggs are in the hands of the consumer the greater the satisfaction and consequently the better the price received.

ACADIA UNIVERSITY
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Departments
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Degrees
B.A., B.Sc., B.Th., M.A., and certificates admitting to the best technical schools. First two years in Agriculture given as electives in B.Sc., course. First year in Medicine, Law, and Theology given as electives in B.A. course.
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Courses in Surveying, Draughting, Shopwork, Chemistry, Electricity, and Bacteriology, for returned soldiers.
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Largest undergraduate faculty in the Maritime Provinces. Three new and splendidly equipped Science Buildings.
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Expenses light, and over $1,000.00 given in prizes and scholarships yearly. Send for calendar to
Rev. GEORGE B. CUTTEN, Ph.D., D.D., LL.D., President.
Next term begins October, 1st, 1919.

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The Aim.—To prepare Girls and Young Women for Complete Living.
The Courses.—Twelve; including College Matriculation, General, Music, Art, Expression, Household Science, Business.
The Faculty.—Twenty-four Teachers of fine personality and Special Training.
The Equipment.—Modern and First Class in every respect
A Junior School.—For Younger Pupils.
Information.—Write for illustrated book to
Rev. H. T. DeWOLFE, D.D., Principal.
Next term begins September 3rd, 1919.

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A Residential School for Boys and Young Men
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Courses. — Collegiate, Manual Training, Business, Special Courses.
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WOLFVILLE - - Nova Scotia.
Next term opens September 3rd, 1919.

Dalhousie University
Halifax, N. S.
Arts, Science, Engineering, Music, Law, Pharmacy, Medicine, Dentistry

ENTRANCE SCHOLARSHIPS:
Three of $200, five of $100, each. Awarded on results of matriculation examinations, September 24-27, 1919. One reserved for Halifax County, one for Cape Breton, one for New Brunswick, and one for Prince Edward Island.

FIRST YEAR SCHOLARSHIPS:
Three of $200, three of $100, each. Awarded on results of first year, and tenable during second year.

DORMITORY ACCOMMODATION
is being provided for men students. Work on Women's Residence has begun. Provision will be made for women students until new building is ready.

REGISTRATION DAYS
in all Faculties September 29th and 30th. Halifax students must register on the 29th

LECTURES BEGIN
October 1st, 1919.

FOR FULL INFORMATION
write to President's Office.

The pullets should be early so that production will be heavy. If at any time during season the eggs become so plentiful as to cause a glut in the market forcing down the price to the cost of production, it is often advisable to use a good preservative and put away the surplus for the period of scarcity which invariably follows.

Table Poultry.—Immediately following "the spring lay" the flock should be gone over and all useless cock birds and those hens that show they intend to rest for the summer, should be put into crates and fed heavily for a week or ten days and thei sent to market either live or dressed, according to market requirements. This culling should not all be done at one time but gradually, as occasion requires, but it should be the aim to get the culling over with as far as possible before the time for marketing broilers, as the prices for fowl alwas drop after that.

Broilers.—It will pay to market many of the early cockerels as broilers depending on those later hatched for roasters as the season advances. All cockerels of teh light weight varieties should be marketed as broilers. When they are eight to ten weeks old either crate or pen feed them for a week or two as to finish well before marketing.

Roasters.—In the general purpose breeds such as Plymouth Rocks and Wyandottes, the main crop of cockerels should be held for roasters. These should be crate fed for from ten days to two weeks or even four weeks, according to requirements. The most economical gains are made the first ten days to two weeks, but to get the best finish it will require three or even four weeks in the crates.

Aim to produce the highest quality product—

To market it in the best condition.

To ask and to receive the highest market price.

Write the Poultry Division, Experimental Farm, Ottawa, for circular on the Preservation of Eggs and Bulletin on the Marketing of Poultry Products.

KILL THE ROOSTER

Every year there is a great and needless loss in the egg trade through allowing the rooster to remain with the hens after the season for chicken hatching has passed.

It is now well known that flocks of hens that are unaccompanied by roosters will lay as many eggs as these same flocks would lay if roosters were among them.

But the fertile eggs laid by the flocks in which the roosters are present are very easily spoiled by the summer heat, while this heat does not affect infertile eggs.

It is estimated by Mr. J. E. Bergey, Poultry Specialist for the Agricultural Extension Service of Manitoba, that over one hundred thousand dollars is lost each year by permitting the roosters to run with the flocks after they should be separated from them.

Mr. Bergey says:

"Five eggs out of every 100 are spoiled because they are fertile. It takes 103 degrees to hatch a chick from a fertile egg, but a temperature of from 70 to 90 degrees may start enough life to spoil it for food. This will not happen with an infertile egg.

"There is a great demand for Canadian eggs in Europe. Manitoba poultry keepers must help to supply that demand.

"The rosters will bring more money in June than they will in the fall. Sell them and save food."

On almost every farm there are one or more roosters at this time of year. In a few cases these are pure-bred, expensive roosters that owners wish to keep over until next year. Such a rooster should be separated from the hens, until the cool weather comes on, when fertile eggs will not spoil with the heat. About three or four months will suffice. But in most other cases the owners are not intending to run the same roosters with the flocks next year; and in all such cases these birds should be sold or killed at once. It will not pay to keep them until autumn.

SELECT YOUR BEST LAYERS

Everyone knows that some hens lay much better than others, but not everyone kho weeps hens has the time or equipment to figure out the exact difference between a good layer and a poor one.

Professor M. C. Herner, head of the Poultry Department, Manitoba Agricultural College, has some very startling figures in this conenction as a result of using trap nests and keeping careful records. In one season, out of 325 pullets there were a hundred that laid over 100 eggs. Of these there were 25 that laid over 175 and 4 that laid over 200. Of the remaining hens that laid less than 100 eggs, there were some that laid only 3. There were even two that did not lay any eggs at all.

Now, a poor layer eats just as much, or nearly as much, as a good hen and takes up as much room and gives as much trouble. It is obvious that if you are keeping hens at all, it pays to keep the kind that will lay well.

There are certain points to look for in selecting good layers, assuming that you can not use the trap nest system and determine the matter accurately.

1. As a rule poor layers are fat, lazy hens. 2. Poor layers molt early in the summer. 3. They sit on the roosts late in the morning and go back early in the evening. Good layers, on the other hand, are bright, vigorous, active hens, working and scratching all day long. As a rule heavy layers molt late in the season in September, or even as late as October.

There are other important points to note in selecting good layers, such as the fact that in yellow-legged breeds; poor layers have legs of a rich yellow coyor while the good layers have legs of a paler, faded yellow. In heavy layers too, the pelvic bones are much farther apart than in poor layers.

PREVENTING LOSS OF FARM POULTRY

The annual losses in poultry flocks from preventable diseases must be enormous. On the general farm the loss of an occasional hen causes no discouragement and no effort to remedy the case. Of course, hens are subject to a certain death rate that cannot be prevented but it seems as if the farm poultry flock often suffers a mortality rate that is far more serious than is necessary.

Lice and mites are responsible indirectly for many losses. These pests sap the vitality of the fowls and reduce their resistance until they become subject to colds and roup and other diseases which might skip the healthy fowls. The cure for lice and mites is almost too well known to repeat. However, it should be emphasized that many farmers who know the cure do not take time to apply it and prevent their valuable flocks of fowls from being ruined by mites and lice.

A dislike to using the axe on a sick fowl often results in the contagious spreading. A bird may have its head swollen with a bad cold until its eyes are nearly shut. It should be isolated for treatment but too often it is allowed to go without treatment and sometimes it is carefully treated but placed back in the flock where it can infect other birds. Colds are very contagious and they not only temporarily cause discomfort to the bird but they reduce its vitality and about destroy its value as a breeder. A bird that has suffered from a severe cold is more apt to have another cold and we also feel that it is apt to transmit a susceptibility to colds to its offspring.

If a bird is very sick and not of unusual value it often saves time, worry and the risk of infecting other birds if the sick fowl is killed and burned. The burning of the infected bird prevents the body being dug up by a dog and left somewheer on the farm where the hens have access to it. If a diseased fowl is buried it should be put down far enough to prevent its being recovered by the scratching or rooting of the animals.

NON-LAYING HENS

When a hen frequents the nest without result, it is a sign that there is some obstruction in the oviduct preventing the production of eggs which the hen would not go to the nest. As a rule, the obstruction is a mass of congealed eggs which originally came through broken eggs in the oviduct, and when this collection is a large one it is not possible to do anything to help the hen to pass it, but when only a few broken eggs have collected, a good dose of warmed castor oil, followed by several of salad oil, is generally effective. A desertspoonful is the dose for a hen in this condition, and you would do well to try this treatment without delay. You may also help matters by holding her over a jug of really hot water, so that the steam permeates the passage, as this causes the parts to relax, and the hen is assisted in getting rid of the obstruction.—Australian Agriculturist.

POULTRY HOUSE LITTER

The health of the farm poultry bock is influenced by the quality of the litter in the house. When the straw becomes damp and dirty it should be removed. The ventilation of the poultry house affects the poultry litter. In houses with plenty of open-front and windows, the fresh air and sunshine help to keep the litter dry. It is almost impossible to keep the litter in good condition without sunshine and so in a damp and dark poultry house the difficulties of managing the flock are apparent.

A little time spent in removing the trash that settles to the bottom of a ditch or run will very often save a lot of trouble and one of the best tools for that work is a potato hook. Grass, weeds, leaves, etc., that sink to the bottom or pile up in a ditch or run can be drawn out much easier with a potato hook than with a hoe or shovel.

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Founded 1854. Session 1919-20

OPENS SEPTEMBER 8

¶This is the largest Residential Ladies' College in Canada.

¶WE STAND FOR—High Ideals, Soul Culture, Intellectual Equipment.

¶WE GIVE COURSES in—Music, Oratory, Household Science, Literature, Fine Arts and University Matriculation. Business Courses are provided by the Academy Affiliated with us.

¶WE POSSESS—An enviable reputation of almost continental scope.

¶Our Art Museum is a feature where we consider we stand without a peer. Free Calendar on application to

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MOUNT ALLISON UNIVERSITY

Annual Session 1919-20

OPENS SATURDAY SEPT. 20

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ARTS, SCIENCE, AND THEOLOGY

Rev. B. C. BORDEN, D.D. : President

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¶Offers Courses in Business, Shorthand, and Typewriting, Penmanship, etc.

Comfortable Residence, Strong Staff of Experienced Teachers

¶A limited number of positions available by which students, either male or female, may assist themselves to pay expenses.

FIRST TERM BEGINS SEPTEMBER 8

Calendar Sent on Request

J. M. PALMER, M.A., L.L.D. : Principal

SACKVILLE, N. B.

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

Guard well within yourself that treasure, kindness. Know how to give without heistation, how to lose without regret, how to acquire without meanness.—George Sand.

"GRINDSTONE OF LIFE"

Hannah Jones was hurrying. She always timed herself by the clock and the work under hand was taking her a good deal longer than her alloted time for it, and she hal been obliged to stop in the midst of it to tie up a badly cut finger for Johnniie, and even after it was proprely fixed, he had fretted and whined in an unusual way, so she had felt compelled to spend a few minutes with him. At last she had found something to amuse him, and he was forgetting. She was piling up in her mind the tasks yet to be done. Her allowance for her housework never allowed for loitering, nor made way for the interruptions that occur. That was the rock upon which Hannah Jones split usually, and she had worked herself into such a state of nervous exhaustion she felt ready to drop when dinner was once on the table.

"What's the matter, Hannah?" John asked pleasantly.

"Oh, I can't work fast enough; I can't work half as fast as I can plan, and even if I could the plans won't work out," Hannah said raspingly.

"Well," agreed John sympatheticall-ly, "your rules are made of cast iron; they won't bend. First thing you know you'll break, if the rules won't.

"Oh, that's all you know about it," she snapped. "You keep your hired man all the time, and if any extra work comes up you get another man, and so you manage al lright, but no matter how many extra men you have I don't have any extra women to help me."

"But Hannah, you might have," John interpolated, appealingly.

"I don't want any extra ones. They just make that much more work. Here we are four in the familiy now and if I had a woman she would make one more and her being here would, in all reasonable calculation, make one-fifth more work for us both to do. Yes, it would be more than that, because she'd make emore washing and ironing and she'd probably want to sew for herself and have a day off Sunday—the day I am the very busest of all—and, maybe, bother the hired help so they'd want to chase off to doings at night. It's always worked that way. And then, too, they never try to see how much they can get done. I can do my dishes in almost half the time it takes the help I've had to do them. If I've got to stand over help with a club to get anything done—why, I'd rather do it myself. The nervous strain of having help around takes more out of me than the work itself does."

"Well," suggested John, "couldn't you put some of the work out to be done, or use bakery stuff to piece out with——"

"Well, when I put the washing out, how has it come back? Some of it hasn't come back at all and some that did come back was torn and spoiled and other pieces were only about half washed, so I had to do them over."

Hannah Jones was fully capable of doing about three things at a time. She had dished up the dinner, rushed around collecting the chairs, poured tea, pretended to eat and talked and did all these things at almost one and the same mament.

"Well, I wish you would let up some. Maybe you can think it out yourself. I can't. It's all I can do to manage my own affairs." So John dismissed the matter.

"Hurry and get through your dinner, I've got to catch up. I'm losing time al the time," Hannah spoke nervously. She prided herself on being systematic. Every day had its work and if anything kept her from doing her alloted tasks on the day and hour set for its special accomplishment she was wholly at a loss.

On this day a man came to see John, and as he arrived after dinner was under way he was invited to eat with them. Hannah felt like slaying him, but he smiled at her so pleasantly and apologized so sincerely she could hardly do less than serve him, with at least a semblance of cheerfulness.

"You see, Mrs. Jones, it was this way. I knew John wouldn't be here until dinner time, and I knew he wouldn't want to lose any time to talk the business over, so I seemed compelled to make myself an unasked guest rather than miss the opportunity of seeing him at his only leisure moment—if it is leisure when dinner is in process."

"You're welcome," returned John. "Take that chair. It's luck you came when you did or you'd have had no dessert. Hannah always cuts the pie according to the number of people to be served."

"Rather generous service," laughed the hand, "had you ben alone." And he looked approvingly at the luscious black raspberry pie awaiting cutting near Hannah's right arm.

Then the talk turned to the matter of business, and the men ate slower and slower and finaly pushed back a little, but still kept talking and figuring. Hannah was on nettles, but she realizeed that she couldn't interfere or interrupt. The business deal was one John wanted consumated. It would be of definite value to all concerned, and it was brought to a finish in an hour's time. But this lost hour piled on to the time lost during the forenoon loomed so large to Hannah Jones, tired as she was, that she felt she could hardly face the race with time and work necessitated by keeping her "system" of work intact. Hannah, however, was a gallant worker, and she wrestled with the things to do. She knew too, she could steal a few hours from her night's rest if she had to. But it was decreed that she should not catch up. A friend from "way off" came —and she could stay just over one train—and Hannah simply gave up.

"Goodness, Hannah! In your kitchen this hot afternoon?" Helen Hand exclaimed.

"Yes," Hannah returned. "I really do have a system of work, and I keep up to it ordinarily, but things have kept interfering. If it hasn't been one thing it's been two—and so here you find me."

"I'll help you," Helen offered, cheerfully.

"No," Hannah demurred. "I've got to the place where I can't go another minute. I've got to stop."

"And do you let yourself get to the place where you've got to stop very often?" Helen asked, curiously, looking at Hannah's nerve trembling hands and lips that twitched and quivered at the corners.

"Oh, no, not often, because mostly I can do my work in the time set for it, but on days that work wrong I get just frantic, though I never do stop on that account. I'd be more frantic than ever if I stopped and let the work pile up. It would be like ocean waves that pils up until they get mountain high."

"Yes," agreed Helen, "they do, and what then? They collapse, and that is what you'll be doing first thing you know."

Hannah looked at Helen curiously. "Don't you have set times for set work?" she asked strangely.

"Not any more," Helen returned, smiling. "I used to be just that way. I worked and timed myself for everything. I set myself 'stunts' to be done, and done just so, in just such a period of time. I counted everything, even found myself trying to count the words I read. When I reached that point I decided it was time to quit. I made myself do things haphazardly. I did really see that the meals were on time, that my family was fed and clothed and washed and ironed, but I stopped timing myself. When I began to feel as though I must simply kill myself rushing I sat down and crocheted awhile or turned on the phongraph. Really, it seems as though I never did my work so easy as I do now that I take it easy, with a little pleasure thrown in between tasks."

"So many mornings I get up feelin gas though I simply couldn't do things," Hannah lamented.

"When I feel that way I see that the breakfast is served, but I don't fuss to bake muffins or waffles or griddles cakes those mornings; I fix something easier. If I still feel that way after breakfast I let myself do exactly what I want to do. If I want to go back to bed I do it, and I stay as long as I want to, and I find when I get up I can work much faster and that I really do keep things up just as well as I did when I kept on a perfect racecourse of running. It isn't the work that wears us out. It's the stewing and the nervous strain."

"But what if somebody comes and finds the work all at loose ends?"

"I don't make eexcuses. I am my own master and the master of my work. Many days I can go on in the steady trend, but when I find myself getting wrought up, nervous, tired, and fretful, I relax, and I'm never going back to the laws of the Medes and Persians—which didn't alter, you know, though they killed a few to keep them intact."

"Hm!" said Hannah lucidly.

"What's the ruction?" inquired John a month later, when he entered the house after breakfast to find Hannah ensconced luxuriously in a rocker, with the phonograph playing. Hannah was crocheting.

"Nothing," aHnnah returned laughing. "I'm just being master of my work instead of letting it master me. When it gets at me with a club I sit down and won't do a thing. I'll teach it yet, that I am master. And she laughed heartfily.

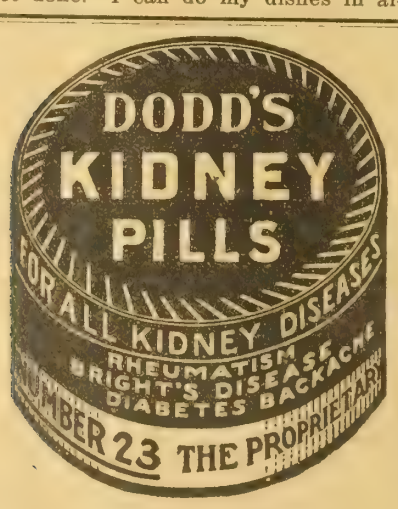
"Huh!" returned John expressively. "Master of your soul, eh? That's good. I've always thought your nose too good to be ground down with the wheel of life, but you seemed determined to be a martyr."

"I'm not a martyr any more, and I'm not going to serve you up at the stake either. I enjoy my work now, and I enjoy life, and I want you to do so too, John."

"I'll admit you did pretty nearly make a nervous wreck of me, but just because I worried about you. It's a might good thing to live to work instead of working to live."

"It isn't overwork that kills women, it's worry and watching the clock, and timing themselves. I like things right, but it's better to be than to do."

"It is," agreed John, "and you're being simply adorable lately, just like you used to be.



CANNING HENS FOR WINTER USE

"Canned chicken" may be made at home in your own kitchen out of the old hens that ought to be killed anyway.

The method operation for what is known as "Straight Pack" by the trade is very simple and is given in detail as follows by Dr. Robt. Barnes, Chief of the Meat and Canned Foods Division, Health of Animals Branch, Department of Agriculture, Ottawa.

Clean and cut up the chicken.

MAGIC BAKING POWDER

Contains no alum

We unhesitatingly recommend Magic Baking Powder as being the best and purest baking powder possible to produce. It possesses elements of food that have to do the building up of brain and nerve matter and is absolutely free from alum or other injurious substitutes.

SICK HEADACHES AND CONSTIPATION.

When the bowels do not perform their functions properly the liver is sure to become affected and the inactive condition of the liver will cause constipation, sick or bilious headaches, heartburn, water brash, specks floating before the eyes, the tongue becomes coated, the breath foul, and the eyes have a dull, yellow glassy appearance.

Milburn's Laxa-Liver Pills will regulate any irregularity of the bowels and stimulate the sluggish liver into action.

Mrs. Malcolm McDermid, Cranton Section, N.S., writes:—"I have been sick for a number of years with sick headaches and constipation. I tried all kinds of doctor's medicines but none did me any good. I tried Milburn's Laxa-Liver Pills, and after using four vials I am completely cured. I would heartily recommend them to all sufferers."

Milburn's Laxa-Liver Pills are 25c. a vial at all dealers or mailed direct by The T. Milburn Co., Limited, Toronto, Ont.

Sort out the fleshy portions, such as the legs, thighs and breast.

Break off the protruding portions of the bones in each piece.

Pack these fleshy portions in a gem jar or other container, as closely as possible.

Add salt and pepper. (About a teaspoonful of salt and ⅛ teaspoonful of pepper.)

Fill to within ¾ inch of overflowing with the liquid that comes from the balance of the chicken, process for preparing which is given beelow.

Place in boiler or other vessel containing warm water and gradually bring to a boil.

For pint jars boil 2¼ hours.

For quart jars boil 3½ hours.

For the balance of the chicken: Place in kettle and boil till the meat will strip free from the bones.

Strip off all meat and pack in jar.

Pour thereon the balance of the liquid in the kettle that has not been used in the first jar. If there is not enough liquid to fill the second jar, add water. Place in boiler as above, and boil as follows:

For pint jars 1¾ hours

For quarts 2¼ hours.

If desired the whole of the chicken may be prepared the same as the last part.

In all cases take care not to expose the gem jars to a sudden change of temperature.

Also, after the pars have cooled off, examine the tops to see that the covers are air-tight.

During the cooking of the product, place the glass tops on the sealers, but do not fasten them. Any steam or gas which may be generated will escape. As soon, however, as the process is finished, fasten the tops securely.

While desecribing the method of canning, something should be said about the poultry to be canned.

What is preferred are good, plump fowls, with a fair proportion of chickens, the bones of the latter giving a firmer jelly and lessening the danger of a soupy or slushy product. As a precaution against this condition, where the pack is straight fowl, gelatine may be, and often is used.

So much has been said and written about the proper methods of starving, bleeding and plucking poultry for market that it is useless to go over them again. One can only emphasize the necessity of exactness in carrying out the accepted principles in connection with these points, which are just as applicable to poultry to be canned as they are to those intended for the market.

There is another point which is important, although possibly its carrying out may detract from the appearance and affect the sale to an inexperienced buyer, namely, that all poultry intended for food, canned or otherwise, after being properly starved, bled and plucked should be left undrawn and kept in a suitable temperature for a day or two in order that the chemical changes which follow the killing of the bird may have an opportunity to take place.

"Is this the genuine Dr. Chase's Nerve Food?"

"Yes, madam, we do not offer substitutes, nor do we believe there is anything to take the place of this great nerve restorative."

"WELL, it has been so strongly recommended to me that I do not want to make any mistake in getting the right medicine."

"You are not making any mistake in this, for we think too much of our reputation to try to talk you into taking something else."

"Do you sell much of Dr. Chase's Nerve Food ?"

"It is one of our largest sellers, and gives such universal satisfaction that it is a pleasure to recommend it to our customers."

But do you know of cases in which it has actually cured people of sleeplessness, headaches, irritability and nervousness ?"

"Scores of them, madam. Some people never say anything about the medicines they buy, but scarcely a day passes that we do not hear of some case in which Dr. Chase's Nerve Food has effected a cure. It is also great for anaemia, and all ailments arising from a thin, watery condition of the blood."

"Well, I am going to try it. How much is it a box?"

"Fifty cents a box, or six boxes for $2.75. Better take the six, for you save a little on the price, and you need that many to give it a fair trial."

"Do you think I will."

"Oh, yes, the process of building up the nervous system is necessarily slow. You will no doubt feel benefited after the first box or two have been used, but too many make the mistake of neglecting the treatment then instead of keeping on until the nerves are fully restored."

"Do me up the six boxes, then, for I hear of so many people being benefited by using the Nerve Food that I am going to give it a thorough test."

If your dealer does not have Dr. Chase's Nerve Food in stock, write direct to Edmanson, Bates & Co., Ltd., Toronto.

THE BUFFALO MOTH

The buffalo moth, which resembles the lady-bug is the worst type of moth and hardest to destroy. The lady-bug is a small white beetle, oval in shape with black and red spots. The buffalo moth is a smaller beetle and not so oval in shape and are not so spotted and emits a disagreeable odor when crushed. It is not the moth but it is in the larvel stage and feeds almost entirely on woolens, The beetles feed on the pollen of flowers. It has been claimed recently that this moth is often introduced into houses through evergreens and other woodsy material used for decorative purposes. If you discover a small webby, white bunch resembling cotton here and there through the house, usually near windows, for it is there the beetle deposits her nits—you may safely conclude you have a case of buffalo moths. These little webby bunches no larger than the ned of one's finger, will be found to contain a lot of nits, which if not destroyed, will hatch and drop to the floor to begin their ravages . Each nest contains various sizes. The larger ones will hatch first but they are all fertile to a disagreeable degree. Where houses are kept at high temperature during winter months the buffalo moths can be seen on a sunshiny day. These moths should be killed before they have deposited their nits in the above named nests for from the nits the larvae hatch and begin their depredations. This is where the kerosene is used to best results and must be used in sufficient quantities to permeate the crevices. The room must be kept tightly closed and be thoroughly ventilated before using any remedy; and this is only "doctoring the effect." Ground spices, tarred paper, dried tansy and sweet flag or calamus are all good to use in putting away woolens and furs. Their odor keeps the moth from infesting those articles so badly. Moth balls are not beneficial with buffalo moths. The common moth is less destructive and easier eradicated than the buffalo moth.

I bought a horse with a supposedly incurable ringbone for $30.00. Cured him with $1.00 worth of MINARD'S LINIMENT and sold him for $85.00. Profit on Liniment, $54.

MOISE DEROSCE.
Hotel Keeper, St. Phillippe, Que.

VOL-PEEK
Mends Pots & Pans
Cooking utensils, Graniteware, Aluminum, Enamelledware, Tin, Copper, Brass, Iron, etc. Easy to use, no tools required, ready for use in 1 minutes. Saves a pot for 2½ a cent. 15 cents at your Dealer, or postpaid by Vol-Peek- B.Co. Box 2024, Montreal

BEVERAGES

A beverage is any drink. Water, the chief one of them is Nature's drink or beverage. Almost all of the beverages have but little nutritive value. (Exception must be made, however, to egg-nogs, cocoa and chocolate.) Nevertheless their use in health as well as in disease should be carefully considered. When abstinence from solid food is necessary for a short time the patient must depend upon beverages for nourishment.

Starchy beverage include toast, rice and barley water. Rice and barley water are given to reduce a laxative condition of the bowels, and are often used alternately. Rice water is soothing to the whole alimentary canal. Toast water is given in cases of extreme nausea.

Fruit beverage are cooling, refreshing, slightly stimulating and are valuable for the salts, sugar and acids they contain. They are frequently employed when high temperature is present. Lemons and oranges are most used in making fruit beverages, chiefly because of their cheapness. As all fruits contain one or more acids, a physician should be consulted as to the kind to be given in individual cases. Pineapple contains a ferment that digest proteins.

Wine whey is stimulating, and is often retained in severe gastric ailments. For a limited period it may be used for debilitated infants with a weak digestion. It stimulates the digestive ferments to such an extent that there may be a gradual return to the regular diet. Clam water and oyster liquor some times stimulate the appetite. Clam water administered in small quantities, is especially valuable in relieving extreme cases of nausea, in larger quantities it acts as a laxative.

Egg-nogs and other beverages in which eggs are used, play a most important part in the dietary of the sick.

Tea

The leaves of the evergreen shrub, Thea, furnish the tea of commerce, both black and green.

The best brands of black tea are imported from India and Ceylon. The best green varieties come from Japan and China. The leaves before curing have neither odor nor flavor.

There are four annual gatherings. The first, which comes in April is considered the best.

Climate, elevation, soil, cultivation, selection of the leaves and the care in the picking and curing of them all go to make up the quality of them. First quality tea is made from the young tender, whole leaves. In black tea the leaves are fermented. The leaves of gren tea are unfermented.

Tea is a stimulant not a nutrient. Its stimulating effect is due to the presence of an alkaloid, thein, and avolatile oil. Its astringent qualities are due to the present of tannin. Black tea contains less tannin than green tea. The thein and volatile oil vary but little.

Tea should always be made as an infusion by the use of freshly boiled water. The practice of allowing tea to boil, or allowing leaves to be used and reused with a small additional supply, cannot be too strongly condemned. The thein is so soluable that it is almost immediately dissolved out of the leaf. Tannic acid is dev eloped as soon as hot water is placed on the leaves but in a small quantity. Careful experiments show that more tannic acid is contained in a 5 minute than in a 3 minute infusion. The longer it stands the more tannic acid is drawn out.

Tea drinkers require less food than those not addicted to the habit, as it has been proved that there is less water to the tissues when it is indulged in. This accounts for the large quantity drunk by the poor. It would appear from its immediate stimulating and satisfying qualities that it had a food value; but when it is constantly used to take the place of food, evil effects are soon apparent, and the victim if attacked by disease, finds that his system offers little resistance. The harmful effects are due to the thein and oil, rather than to the tannic acid.

Tea, in moderation is stimulating, refreshing and often relieves bodily fatigue and headache. It has a slight influence in regulating temperature and circulation. It is cooling in summer and warming in winter. On an empty stomach it acts as a diuretic. Excessive tea drinkers are apt to become nervous, suffer from depression and insomnia. The habitual tea drinker often becomes a nervous wreck.

Coffee

Coffee is the seed of the berry of the evergreen tree CAFFOEA ARABICA, which yields annually three harvests. Each berry contains two seeds contained in a husk.

Coffee was formerly cured by being dried in the sun, but owing to frequent rainfalls in the country where it is grown slow artificial heat is preferable. It is imported to be cleaned, sized, roasted and ground. The coffee berry in its raw state has no odor nor flavor; both being developed by roasting.

Java coffee is the best coffee grown, but much coffee labelled "Java" does not come from the island of Java. Any coffee having the distinctive flavor of Java, no matter where grown, bears that name. Brazil, Central America, Mexico and Arabia are all coffee countries.

Coffee like tea is usuall blended, the most popular blend being 3 or 4 parts Java to 1 of Mocha.

Coffee is a stimulant as tea is. Its stimulating property is due to caffein and a volatile oil. The effect of caffein is almost identical with that of thein. It also contains tannin and is more stimulating than tea.

Coffee should be bought in small quantities and kept tightly covered in a glass jar or tin canister. It is best ground at home. Because of the large amount of volatile oil it contains it quickly depreciates in value.

Coffee may be prepared as a decoction (boiled coffee), an infusion or filtration. Coffee for filtering should be finely ground.

Coffee strengthens heat action and increases respiration. It is a nerve stimulant and acts as a diuretic. It relieves the sensation of fatigue and induces wakefulness. It is often valuable to relieve nausea after an anaesthetic, and often proves useful in cases of opium and alcoholic poisoning.

A cup of black coffee assists digestion but breakfast coffee with cream and sugar retards digestion.

When taken to excess coffee produces biliousness, languor restlessness, heartburn, palpitation of the heart, dyspepsia and insomnia.

Many preparations have been put upon the market as coffee substitutes, but to the coffee drinker there is no substitute. They, however, make a pleasing hot beverage. To the adult a single cup of coffee at breakfast and

MARVEN'S
WHITE LILY BISCUITS
Manufactured under Most Sanitary Conditions in a Thoroughly Modern Factory THEY SURELY

Made of the Best Materials by Expert Workmen and Workwomen SATISFY.
SOLD IN BULK — IN PACKAGES — IN TIN PAILS.
J. A. MARVEN, LTD.
BISCUIT MANUFACTURERS
MONCTON HALIFAX ST. JOHN

LET a woman ease your suffering. I want you to write, and let me tell you of my simple method of home treatment, send you ten days' free trial, postpaid, and put you in touch with women in Canada who will gladly tell what my method has done for them.

A MESSAGE TO WOMEN!!

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me today for free trial treatment.

Mrs. M. Summers, Box 309 Windsor, Ont.

MINARD'S
"KING OF PAIN"
LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

PILES Do not suffer another day with Itching, Bleeding, or Protruding Piles. No surgical operation required. Dr. Chase's Ointment will relieve you at once and as certainly cure you. 60c. a box; all dealers, or Edmanson, Bates & Co., Limited, Toronto. Sample box free if you mention this paper and enclose 2c. stamp to pay postage.

For Better Preserves

We have published a little book that is not only interesting, but helpful. It contains, besides a complete Section of "Hints for Canners," a large number of exceptionally good recipes which will be appreciated by housewives during the preserving season.

In the interests of the family health and for true economy "Can all the Fruit and Vegetables you can": and to get best results in so doing, have a copy of this usetul book before you.

In addition to these features, the book contains an explanation of the Perfect Seal Jar and other Jars made by us. Glass Jars are the only correct containers for canned goods, and those made by the DOMINION GLASS COMPANY are the highest grade obtainable.

For your Free Copy of this book, write

DEPT. 13

DOMINION GLASS COMPANY, LIMITED
MONTREAL

UNSIGHTLY PIMPLES
PAINFUL BOILS
Are Caused By Bad Blood.

When the blood becomes impure, it is only natural that boils, pimples, or some other indication of bad blood should break out of the system.

Ointment and salves will do you no good You must get at the seat of the trouble by using a good internal blood purifying remedy such as that grand old medicine, Burdock Blood Bitters. This preparation has been on the market for the past 40 years, and is acknowledged by all who have ever used it to be the best blood cleansing remedy.

Mr. Emerson G. Goodwin, Cambridge, N.B., writes:—"For nearly two years I suffered from boils and pimples on my face and neck, and nearly all of my body was covered with the pimples. I tried most everything, but got no relief. One day a friend advised me to try Burdock Blood Bitters, and after using three bottles the pimples and boils had all left me, and there is no sign of them returning. I can strongly recommend B. B. B. to anyone who is troubled with skin disease."

Manufactured only by The T. Milburn Co.. Limited. Toronto. Ont.

a cup of tea at luncheon will not prove harmful.

Cocoa and Chocolate

Cocoa and chocolate are manufactured from the cocoa bean of commerce. This bean a native of Mexica, is the seed of a fruit 5 to 10 inches long, containing from 20 to 30 seeds. The area of the cocoa belt is limited, being confined to Mexico, South Ammerica, and the West Indies.

The fruit is gathered and allowed to remain on a heap on the ground for 24 hours. The pods are then cut open, the seeds removed, drained and put in a sweating box for 2 days to undergo fermentation. The flavor of the bean largely depends upon the care taken with this process. Now the beans are dried in the sun when they are ready for exportation.

Having been exported in this crude state they must now be cleaned, assorted and roasted; then the thin brittle covering removed by machinery. The thin coverings are sold under the name of "cocoa shells". The broken roasted beans constitute "cocoa nibs." Chocolate is the cocoa nibs crushed, pulverized and moulded. Vanilla and sweet chocolate have the addition of flavoring and sugar. In the manufacture of the various cocoas nearly one half the fat is removed from the cocoa nibs.

Unlike tea and coffee, cocoa and chocolate, though slightly stimulating, have a food value which should not be overlooked.

The stimulating effect of cocoa is due to theo-bromine, a principle closely allied to thein and caffiien; it also contains some tannin.

Cocoa as a beverage may be used by many with whom tea and coffee disagree. There are some however who find it clogging and heavy on account of the large amount of fat it contains. This is usually because it it taken with a hearty meal. In cases of enfeebled digestion cocoa usually agrees with the patient much better than tea or coffee.

Adulterations in tea and coffee are coloring matter, dried stems in tea and chicory in coffee. Starch and cocoa shells are the common adulterants in cocoa. Iron oxide is sometimes added to cheap articles for coloring purposes. Sugar is an adulterant inasmuch as it is a case of a cheaper material mixed with a more expensive one. Sweetened chocolate should always be properly labelled. There is really no adulteration of the brands of any reputation.

Cereal Coffees or Coffee "Substitutes"

These are NOT substitutes for coffee inasmuch as they do not produce the same effect and do not have the same flavor. They are harmless, the chief sin lying in the extraordinary claims made as to their nutritive value. As a matter of fact their nutritive value amounts to no more than the 1-20th part of skimmed milk; their chief value lying in the fact that they provide a hot, harmless beverage and restrict the drinking of the caffein bearing beverages. A good "decaffeinated" coffee is much better as it is harmless and has also the true coffee flavor.

When She Could Not Turn in Bed

DODD'S KIDNEY PILLS CURED MRS. WEBERG'S ILLS

Manitoba Woman After a Year of Suffering Proves Once Again that Dodd's Kidney Pills Help All Kidney Ills.

Rennie, Man., Aug. 3rd. (Special.)—"Yes, I feel as well as ever I did in my life and I give Dodd's Kidney Pills all the credit." The speaker was Mrs. E. Weberg, a highly respected resident here, who for some time was a severe sufferer from rheumatism and kidney trouble.

"My trouble started with a cold," Mrs. Weberg continued. "I coud not throw off the after-effects. My sleep was broken. I felt heavy and sleepy after meals and I was always tired and nervous. Stiffness in the joints, cramps in the muscles and then headache, backache and heart flutterings, followed .

"Then dropsy and rheumatism set in. I could not work on account of my sore back. I got so bad I could not turn myself in bed.

"I suffered for a year before I started to use Dodd's Kidney Pills. I used two boxes and now I feel as well as ever I did in my life."

Mrs. Weberg, who looks the picture of health, struck at the root of all her troubles when she used Dodd's Kidney Pills. All her ills came from sick kidneys. Dodd's Kidney Pills are purely and simply a kidney remedy. Their record for the last twenty-five years is the cause of their popularity. Ask your neighbors about them.

ICED COCO

¼ cupful flour, ½ cupful coco, 1 quart boiling water, ½ cupful sugar, ¼ teaspoonful salt, 1 teaspoonful vanilla.

Mix sugar, flour and coco. Add the boiling water gradually, stirring all the time. Place over the fire and cook slowly, 15 minutes. Add salt, and when cold put in the vanilla.

This syrup is the foundation for the coco drinks. If you have the time, it is better to add the hot syrup to a quart of scalded milk, let blend 15 minutes, then beat and chill. If using cold milk, blend the cold milk and the coco syrup with an egg beater. Serve with whipped cream and dust a tiny bit of grated sweet chocolate over the top of the glass. The syrup may be kept in the ice-box and used when desired.

Iced coco is an ideal summer beverage for all lovers of chocolate. It may be served with either luncheon or dinner, but it is particularly fitting to serve to afternoon "happen-in" guests.

ICED TEA

4 teaspoonfuls tea; 2 cupfuls boiling water.

Put the tea in a china or earthen pot and pour on the boiling water. Let steep where it will not boil but will be hot for 5 minutes. Pour off. If served at once pour into glasses filled with chipped ice, or if to be served later, pour into a pitcher. Many think the tea has a much better flavor if served as soon as made.

The tea is made strong to allow for the dilution of the chipped ice used in serving. Serve with slices of lemon or oranges, diced pineapple or strawberries. Clove may be put in the lemon slices, or a tiny piece of vanilla bean in the teapot for variety in flavor. Sweeten as desired with powdered sugar.

"You'll like the Flavor"
KING COLE TEA
Makes a Friend of Every User.
Perfectly packed in bright lead foil, and price marked on every package.

FRUIT PUNCH

1 pineapple or 1 can grated pineapple, 3 cupfuls boiling water, 1 cupful tea, freshly made, juice of 6 lemons, juice of 10 oranges, 1 quart strawberry, currant or grape juice, 1 bottle charged water, 1 quart sugar—or better, 2 cupfuls syrup, 3 quarts water.

Grate the pineapple, and boil with the water twenty minutes, or longer, then strain through a jelly bag, pressing out all the juice; let cool and add the rest of the fruit juice, the tea and the syrup. If sugar is used, add a pint of water to the sugar and let boil six or eight minutes; cool before using. Add the charged water just before serving. It is better to make the punch a few hours before the time of serving, then let stand closely covered, on ice, to chill and ripen. Then when ready to serve, add the water and the charged water. Strawberries, mint leaves, or slices of bananas or oranges may be added as a garnish.

ICED COFFEE

Allow at least 2 tablespoonfuls of coffee to each cup of water and make in any desired way. Pour at once from the grounds. The milk may be added while the coffee is hot or after it is cool. Serve with chipped ice and whipped cream. Sweeten if desired with powdered sugar. Iced coffee is a delicious "tea-time" drink.

READING ON TRAINS INJURIOUS TO THE EYES

Many people believe that it is injurious to the eyes to read on a train, but few seem to know why. The reason is the added strain on the delicate muscles of the eyes. The motion of the train shakes the paper or book constantly, thus continually changing its position and its distance from the eyes, keeping the delicate muscles of the eyes in constant action to readjust the focus. Extra work is thus thrown on these tiny muscles, as the changing of focus occurs sometimes a hundred times a minute.

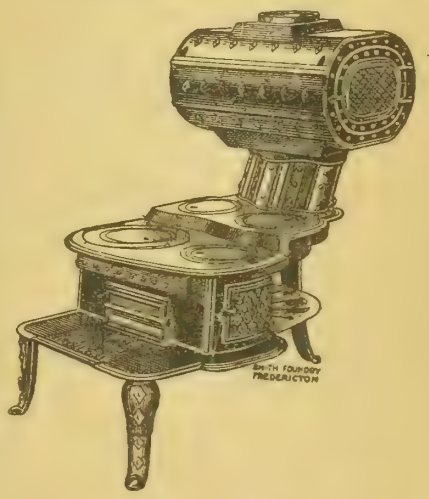
Another cause of eye strain in reading on trains is the poor lighting usually encountered. Often people try to read on a train or street car when the daylight is fading and before the car lights are turned on. Even with the light on, the situation is not greatly improved. Usually the light is high up in the centre of the ceiling and is badly placed for reading, the light being too far away from the paper and the light rays being reflected into the eyes from the book or paper.

HELPS BY THE WAY

To prevent your white dresses from turning yellow when put away for the winter wrap them in blue paper. If you prefer to use white cloth dip it first in strong bluing water and it will serve the same.

When hanging pictures always hang them with the face to the wall first, then even up the wire and turn them without unhooking them. This leaves the wire twisted on the hook, and the jarring of the house will have no effect on them.

Nothing Better for Camp or Summer Kitchen



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Fredericton, New Brunswick
SMITH BROS. Sussex, N. B.

HINTS FOR MOTORISTS

by ALBERT L. CLOUGH

Editor Motor Service Bureau Review of Reviews...

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LENGTHENED LIFE FOR THE BATTERY

Batteries Like Tires Can Be Conserved By Intelligent Care

The period service of a starting and lighting battery is inevitably all too short. Never before in its history has the storage battery been largely used in such a strenuous and even abusive service as it now has to perform on hundreds of thousands of gasoline cars. Fortunately it is within the power of the user to somewhat mitigate the destructive conditions inherent in car service to a certain extent and thus give the battery a chance to last as long as circumstances permit and the following are suggestions directed toward the achievement of this end: Never let a battery become discharged and remain in that condition for any length of time, for the plates will become permanently sulphated, often beyond recovery. This applies especially to batteries on cars which are out of service, as when laid up for the winter, and need hardly be given in connection with batteries on cars, which are in regular use. When a battery is found to be discharged, charge it at once and keep it charged. Never allow a battery to be subjected to heavy overcharging, for any considerable period, as this abuse is more destructive than anything else to which it is likely to be subjected in normal service. Excessive overcharging is particularly dangerous to the users interests, as he is seldom warned against its evils by starting and lighting manufacturers, because it does not affect the operation of their apparatus, while undercharging does so, seriously. For this very reason such manufacturers generally adjust their systems for rates of charge that are too high to meet average conditions of use, in order to avoid the possibility of undercharging. The facts regarding overcharging are these: When a battery is fully charged, part of the current subsequently sent into it is wasted in decomposing the electrolyte into hydrogen, and oxygen, these gases being freed, with violence, within the active material of the plates, which is torn off and deposited in the bottom of the jar, where it may later collect and short-circuit the cell. The rest of the charging energy wasted in the battery is converted into heat, which often raises the temperature of a cell so high that the insulating separators are boiled into wood pulp, with the final result that the cell is short-circuited. When cells, that are not leaky, require more than very slight and occasional fillings with water or when they become noticeably hot, serious overcharging is taking place. The weather itself makes little difference in the water demanded, but it happens that batteries are more violently overcharged in summer than in winter, because of the difference in driving conditions.

Constant Overcharging Destroys Storage Cells

When it ras become evident that a battery is being habitually overcharged, as evidenced by its high temperature at the end of long drives and its large loss of water, the charging rate should at once be reduced. Until recently the regulation of charging rate has been made a mystery of, but now it is being mentioned more freely. The adjustment can be made on the generator of almost any system, in a few minutes and the car owner should insist upon its being attended to if he has any regard for his battery's longevity. Several different adjustments may be required in the course of a year's driving in order to meet changing conditions. Every time that the starting operation is performed, the battery is grossly overloaded. This ought to be generally realized and the period of overload reduced by insuring perfect carburation and ignition conditions. With care any engine ought to start in five seconds, summer or winter. Overloading tends to bend the plates and dislodge active material from the plates and for this reason accidental short-circuits should be carefully forestalled by keeping the insulation of the system in perfect condition. In refilling cells with water never use any that contains foreign matter as a very slight taint of metal will seriously injure the plates. Cells operate best when the density of the liquid is as prescribed and thus frequent hydrometer tests are essential. Since portions of the plates above the liquid do not enter into the normal chemical actions, they soon become permanently deteriorated, thus rendering it a vital matter always to keep them covered with electrolyte. The inevitable shocks of car operation are sufficiently hard upon a battery. They should be kept at the minimum by frequent inspections to determine that the battery is firmly secured upon the chassis. Batteries and tires are similar in one respect. They are the two elements of a car which have a relatively short life and which are known to require replacement at rather short intervals. The only thing that can be done with each is to try to make the replacement interval as long as possible.

SEEING ONE'S CAR AS OTHERS SEE IT

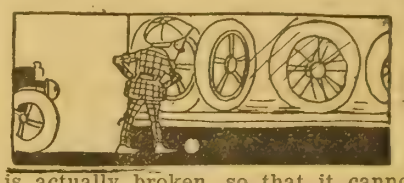
Do Your Wheels Run True and Otherwise Correctly,

Have you ever noticed how often the car ahead of you is afflicted with wabbly wheels? Sometimes, also, you may notice that the front wheels of other cars toe out instead of in. How are our own wheels? The operator seldom sees the wheels of his own car, while in motion, and it is well that he occasionally should let someone else drive and examine them critically, when his car is both receding from him and approaching him. A rim that does not run true subjects its tire to undue wear by "scuffing" is sideways over the road surface and there is also a tendency to loosen the rim fastenings and even the spokes. The wobble is usually caused by the careless application of the rim, resulting in its failure to seat properly all the way around. While a wheel is jacked up, for a rim change, the accuracy of its running should be tested. A bent axle shaft also causes a wobbling wheel, even though the rim is properly applied. A sagged rear axle housing or excessive wear in outside bearings results in rear wheels that run out of parallel and wear in steerinv pivots and bearings causes front wheels to lose their camber—their downward inclination together. Constant excessive change of direction of the front wheels of a car, approaching over a rough road, indicates abnormal play in the steering parts. A slight fluctuation of the front wheels, such as can be accounted for by the action of the springs in the drag link and allowable backlash in the steering column mechanism is permissible, but more than this causes abnormal front tire wear and even hard and possible uncertain steering control.

ARE WIRE WHEELS STRONGER?

J. S. M. asks: Are wheels with wire spokes stronger than those with wood spokes? Which last longer?

Answer: There still exists some difference of opinion upon this point, but it is pretty generally considered that, for the same weight, wire wheels are the stronger. In practice there is very little trouble from the breakage of either kind of wheel, except in accidents. When an accident does occur it is usually found that a wood wheel



is actually broken, so that it cannot safely be used, but with a wire wheel it often happens that, while it may be badly distorted enough of the spokes remain unbroken so that it can be used temporarily, after slight repairs have been made. Assuming that both kinds of wheels are kept thoronghly painted and thus protected from the weather, there is no practical difference in their life, but if they are neglected, it seems that teh wire wheel suffers more rapid deterioration. Repairs of wire wheels are usually cheaper than those of wood wheels.

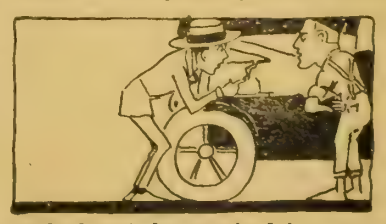
OPERATING CAR WITHOUT AMMETER

O. W. F. asks: Will it do any harm to run my car without the ammeter, which burned out and has been sent away for repairs? I have been told that the generator might burn out also if I did so.

Answer: If you electrically connect the two wires taken out of the ammeter, the system will work just as it did before the instrument was removed, except that you will have no indication of the current that is flowing, but should you run your car without connecting the ammeter wires together, the generator would run without furnishing any current to the system which, in the case of some generators, might result in the burning out of the shuntfield windings, under the very high voltage generated.

REPAIRING CRACKED WATER JACKET

R. R. S. asks: Can a crack in the outside of a cylinder, which lets wa-



ter leak out, be repaired in any way?

Answer: Usually it can. A small crack can sometimes be closed by "rusting it up" with salamoniac solution or by caulking it with copper wire. Most cracks can be filled by the autogenous welding process or by brazing and a properly fitted sheet metal patch screwed on over the break is sometimes used. The advice of a competent welder is of value in determining how such a crack may best be treated.

MAGNETO INQUIRY

M. J. B. writes: My 1915 car is equipped with a ———— magneto, which sparks the two inside cylinders simultaneously and the two outside cylinders simultaneously. It gives a good, fat spark, but an automobile

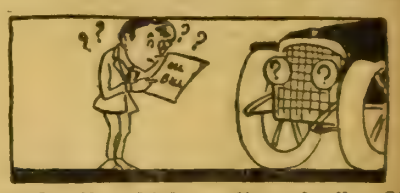
mechanic says that this arrangement is wrong and that I am getting only half the power I should. The valves of my engine are in good shape and the compression is all right, but it has no snap or vim. What is the matter?

Answer: This type of magneto proves perfectly successful in practice, the fact that two sparks, in series, occur at the same time, being taken account of in the design of the windings, so as to give ample igniting power. Its adoption permits the magneto distributor to be done away with, thus reducing the cost and complication of the instrument. If your particular magneto is in good condition you need not worry about the ignition. Very probably your trouble is caused by faulty carburation, assuming that everything is timed correctly. Since the date when your car was built, many changes have had to be made in carburetors and manifolds, in order to successfully utilize the increasingly involatile fuel furnished, and we believe that the application of exhaust heat to your manifold and the careful adjustment of the carburetor or the installation of a more modern one, will eliminate your troubles, assuming that there is no abnormal friction acting in any of the car parts.

LOW OIL ECONOMY

W. H. S. asks: What mileage on each gallon of oil ought I to get with my 1916 light six car? I have been figuring it up and I find that I have been averaging about 225 miles. Isn't this pretty low? If so, how can it be bettered?

Answer: Your oil economy is decidedly low. As a guess, we should say that you ought to be getting from 400 to 500 miles to the gallon, at least in warm weather, if your engine is well worn in and you are using the correct



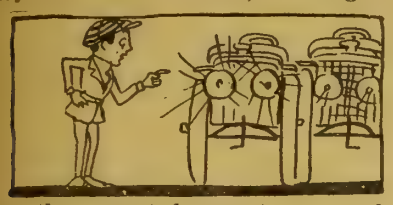
grade of a high quality of oil. Oil that is of a too light body, especially when hot, passes the pistons too freely and oil of a too low flash point is rapidly lost by decomposition. If fuel condensation is excessive, so that the engine oil has to be changed very frequently, the consumption becomes excessive. Badly fitted pistons and rings, leaks from the crank case, past defective gaskets or along bearings an the use of an illy adapted grade of oil are the usual causes of abnormal lubricant consumption.

TESTING THE FORD MAGNETO

W. P. P. asks: How can one tell whether a Ford magneto is as strong as it should be?

Answer: Most well equipped service stations, of this make of car, have a special voltmeter for testing the condition of magnetos and you can obtain one of these magneto testers from almost any Ford accessory dealer. Some idea of the condition of a suspected magneto can be obtained by comparing its action with that of one, known to be of normal strength, in another car of the same model and with the

same headlight arrangements. When the engines of the two cars are running at as nearly the same speed as they can be made to run, if the lights

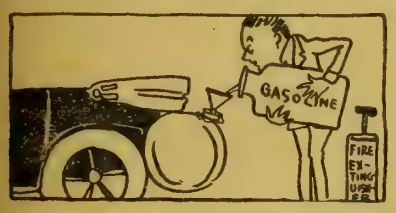


from the suspected magneto are much dimer than those from the other, a weakened condition is indicated.

FIRE DANGER FROM CHAMOIS STRAINER

J. H. writes: The instruction book that came with my car advises that all gasoline be filtered through chamois, but friends warn me that the use of this kind of strainer is likely to result in a fire. Is this danger a real one?

Answer: The danger, if it exists, is very slight and is entirely absent if the funnel used is of metal and touches the metal of the tank so long as gasoline is being poured upon the



chamois. In very cold, dry weather, friction of the gasoline upon the chamois may produce electrification of the funnel and a spark, if the funnel is not in contact with the tank. This has led to the passage of regulations against the use of chamois. We advise you to keep on with its use, taking the precautions above mentioned.

CYLINDERS FLOODED THROUGH VACUUM TANK DERANGEMENT

W. L. writes: Cylinders 3 and 4 of my "six" engine fail to fire. The sparks are perfectly good, but the cylinders seem to be flooded with gasoline, as I find the raw liquid there, when I take out the plugs. I think

that the trouble may be that the vacuum tank is working improperly. Is this probable?

Answer: Your inference is, in all probability, correct and your cylinders are receiving gasoline that is sucked from the tank through the top of the vacuum tank and, by way of the vacuum connection, right into the intake manifold of the engine. Most likely the float of the vacuum tank is prevented from rising, either by its having stuck or from its having become leaky and filled with gasoline so that it possesses no buoyancy. The air-vent is thus kept closed and the suction valve opened and when the upper tank compartment becomes filled with gasoline, it is drawn directly into the intake manifold when there is suction therein. Restoring the action of the float and its connected mechanism should remove your trouble.

Motor Efficiency Depends on Spark Plug Service

Spark Plug service depends on the ability of its insulator to resist vibration, shock of cylinder explosions and extremes of temperature changes in all types of motors, in all kinds of weather, in all climates, and under every known load and road condition.

Champion Dependable Spark Plugs

are equipped with our new 3450 Insulator, the result of ten years of tedious research and 3450 distinct experiments.

It offers three times the breakage resistance to sudden temperature changes; and

It has two and one-half times the breakage resistance to shock and vibration; and

It has fifty per cent. more resistance to electric current when heated than the best previous Champion Insulator that made the name a synonym for dependability.

Besides these Insulator tests, Champions are subjected to an air pressure test of 140 pounds to the square inch for compression leakage and a final inspection for imperfections. "Champion" on the Insulator is your guide to better spark plugs for efficient service in every make of motor or engine, each guaranteed to give "Absolute satisfaction to the user or full repair or replacement will be made."

Champion "O" for Overland Cars. A 14 "O" ½ in. Price $1.00.

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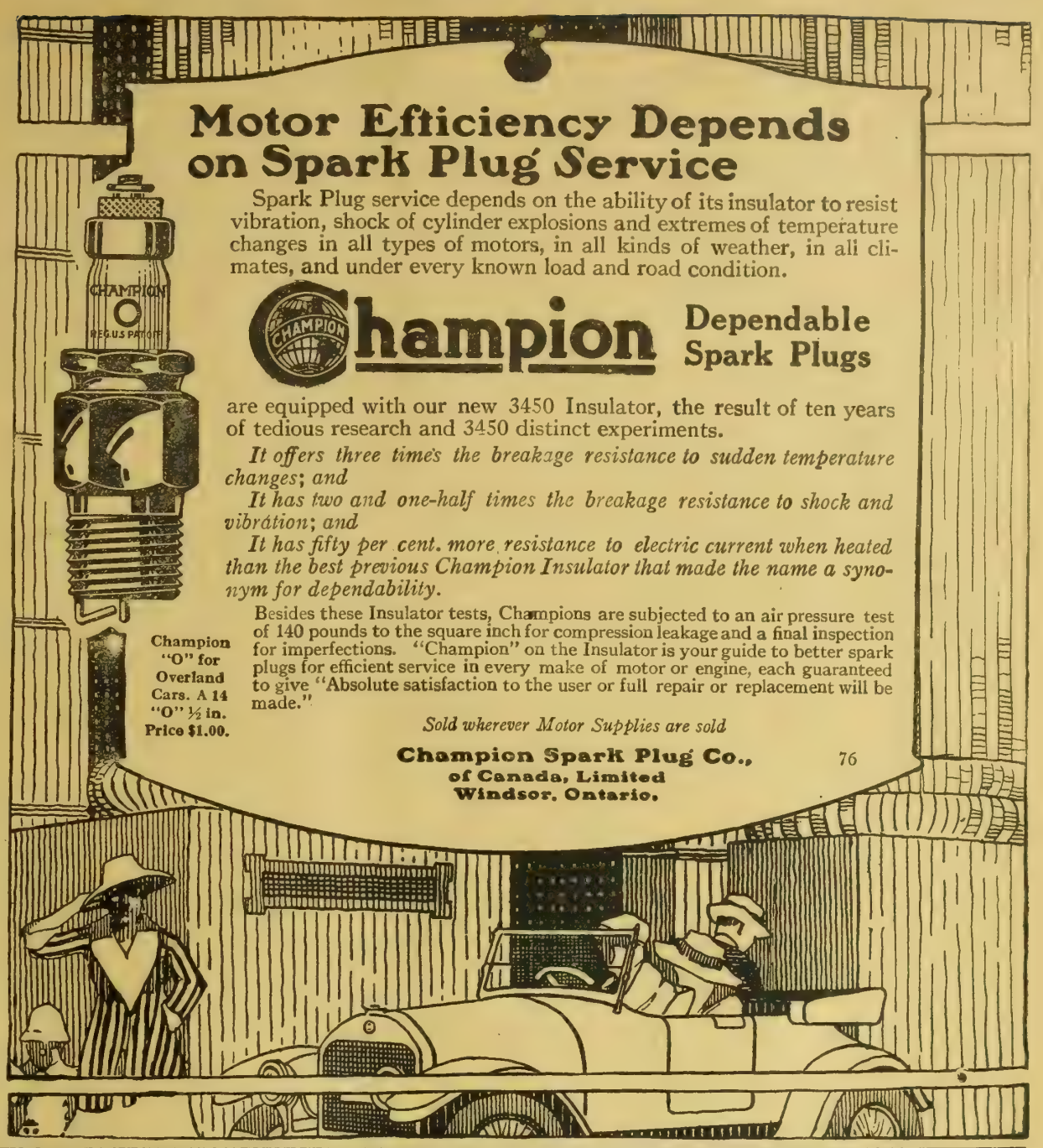


CARE OF IGNITION CIRCUITS

Watch the Primary Connection and the Secondary Insulation

Ignition circuits are of two kinds, the primary and the secondary. The former is the circuit which comprises the battery, ignition switch, the coarse wire winding of the spark coil, the timer contacts and the wiring necessary to connect them. The latter circuit comprises the fine wire winding of the spark coil ,the distributor with its rotating brush and contact segments, the cables from the distributor segments to the several cylinders and the spark-plugs located therein. In the primary circuit flows a current of low pressure, usually of about six volts, while the secondary circuit carries a very high pressure (high tension) current, of tens of thousands of volts. Because of its low pressure, the primary current requires but a very slight obstruction to stop its flow. A loose or dirty connection at a wire end will do it. On the other hand, it has little power of escaping from its circuit and thus comparatively slight insulation will keep it from short-circuiting. The secondary current, on the other hand, is not affected by loose or corroded connections and will even flow, practically undiminished, through a slight break in a wire, but it has the power of jumping a considerable distance and where a "short sut" offers, it is likely to do so and fail to reach the spark-plug. It is evident from the above that the principal requirement in caring for the two circuits of an ignition system lies in keeping the primary circuit from becoming interrupted and keeping the secondary circuit so well insulated that a short-circuit cannot occur. In the primary, every inch of wire must be free from breaks, every wire end must be cleean and firmly secured to iits binding post, the switch must have no dirty or loose contacts, the timer points must be free from corrosion and the ground connection must be secure. In the secondary, every inch of wire must be free from dust and oil and the spark-plug insulation clean of soot and oil. It is useless to spend time cleaning plug points and tightening cable conection to plugs, with the fliers, dirt and looseness are of no account there. Keeping the plug porcelains clean and thus avoiding short-circuiting is the important matter.

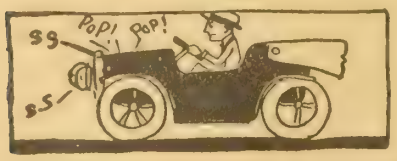
THE LIGHT TRAILER

The light trailer, for use behind the ordinary passenger automobile, has now become a recognized factor in motor car practice. As the motor car is now the "general utility" vehicle it is constantly being called upon to perform a rapidly widening range of services such as are constantly demanded in business and domestic life and the pneumatic tired, two wheel trailer has provided the response to this demand. The average automobile owner possesses but one—usually a passengar car— and this must be used for all his purposes. By fitting to it a light trailer, he can do trucking of goods which would spoil the interior finish if loaded into the passenger body, he can handle, on good level roads, a full body load and a full trailer load, without subjecting his car and its tires to more than slightly abnormal wear and tear and can render himself in great measure independent of express and railroad companies, by his ability to carry with him the baggage which he requires for which the modern car itself provides no carrying space, owing to the very low seats, now in use, and the monopolization of the rear of the body, by the spare tire equipment. Judiciously used, the light trailer is an extremely handy and valuable motor car accessory, immensely increasing the all-around usefulness of the car to which it is applied but, like everything else, it should be used in a reasonable way and one should not try to "mope mountains" with it over rough, hilly roads and then wonder why his car suddenly requires repairs.

CARBURETOR JET MAY BE OBSTRUCTED

H. A. M. writes: For the last few days my engine has failed to run properly with anywhere near full gas, spitting and missing when I open the throttle. When I close the strangler it stops doing this, but then runs "loggy" and will not speed up. Where should I look for the trouble?

Answer: It looks as if your engine were not getting gasoline enough to produce a sufficiently rich mixture and we suspect that the spraying jet of your carburetor is partially obstructed with dirt. When this is the case, enough gasoline often passes the



obstruction to permit low throttle operation, but not enough for full throttle operation. When you close the strangler, you increase the suction upon the jet so that enough and probably too much gasoline is delivered, but you also cut off the air supply, which causes the "loggy" action. We don't know what carburetor you have but its gasoline passages should be cleaned out, if possible without losing the adjustment. Of course, the trouble may be that the auxiliary air-valve holds open, which would produce a similar result.

OIL-LESS BUSHINGS FOR SPRING BOLTS

H. Y. writes: I am overhauling my car and find that the spring bolts are so badly worn in the spring-eyes that I shall have to make replacements. My mechanic advises me to put in oil-less bushings instead of bronze ones, claiming that they wear well and do away with grease cups and the attendant bother. What do you advise?

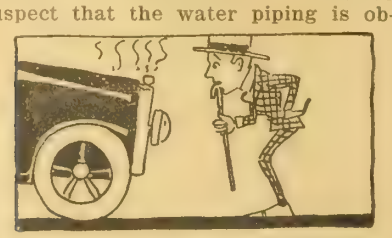
Answer: There is a tendency toward the adoption of non-metallic bushings in spring-eyes and good re-

sults are being obtained. If you use suitable bushings and the work is properly done, you will probably obtain satisfactory service, but this practice is of a somewhat experimental nature thus far. Impregnated wood, compressed asbestos, vulcanized fibre and other materials are used. Many materials capable of holding their shape and free from the tendency to abrade the metal of the pins seem available for this purpose.

ENGINE OVERHEATS

D. S. C. asks: What do you suppose makes my engine get so hot and steam come out of the radiator cap, when the car is stopped? I have washed out the radiator with soda and put on a new fan-belt, but the trouble is still there. The pump appears to be working all right.

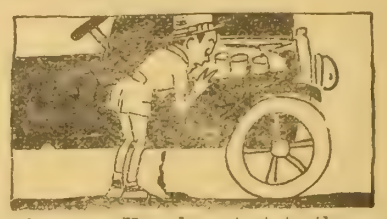
Answer: If there is really anything wrong in the cooling system and the trouble does not arise from using a badly proportioned mixture, from faulty valve or spark timing, inadequate piston lubrication or abnormal friction somewhere about the car we suspect that the water piping is ob-



structed. If the engine becomes hot while the radiator is comparatively cool, this is probably the cause. The linings of rubber hose connections sometimes become loose and partly obstruct the circulation and sometimes the hose from the radiator to the pump becomes so flabby, that it sucks together and stops the flow. Watch this hose with the engine speeded up and if it tends to collapse replace it. If you disconnect the upper hose from the radiator, water should be thrown from this in a full sized stream for 10 to 20 feet when the engine is speeded up if everything is unobstructed. Sometimes the pump impeller breaks or becomes loose on its shaft. This test will determine whether it is working properly.

OVEROILING IN EIGHT CYLINDER ENGINE

L. S. writes: I am having the following lubrication trouble with my eight cylinder engine. Oil comes out of the muffler pipe connected with the hight hand cylinder block and the plugs of these cylinders foul. The other side is all right. My oil pressure gauge does not register, probably on account of something wrong with the oil pressure regualtor. I have taken out the pistons from the right hand block and find them and their rings in good shape. At least, there are no brown spots on them. What is the cause of this trouble?



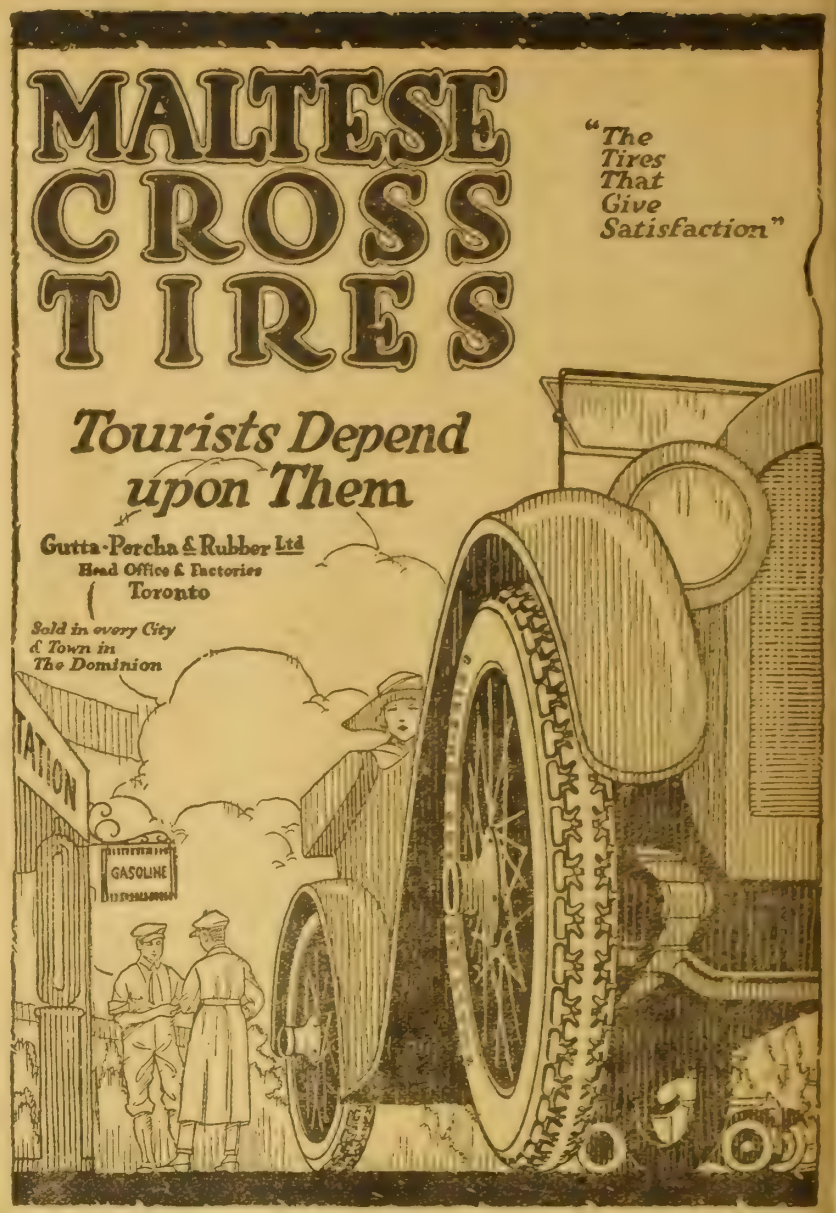
Answer: You do not state the make of this engine and thus we are in the dark as to the details of our lubricating system. There has been some trouble experienced in equalizing the lubrication received by the two sets of cylinders in this type of V engine, there being a tendency for the cylinders of the right block to become over lubricated, in case there is an excess of oil thrown about in the crank case. At high speed, this is quite likely to occur unless the pressure of oil is kept down to a reasonable volue. May it not be possible that there is something wrong with the pressure relief valve, which permits too much oil to be supplied when the engine is running fast? If you find nothing wrong with the teroiling system, it may be that the piston rings on the overoiled pistons do not fit so well as they appear to, but if overoiling is general on the right hand cylinders we should infer that there was something out of order about the lubricating arrangements themselves.

FORD TRANSMISSION LACKS NEUTRAL POSITION

J. P. writes: I have much trouble in cranking the engine of my 1916 Ford, as tehre seems to be no neutral position in which the engine is free to turn. Also, it will not coast freely. Is there some bearing worn out that allows the gears to drag or doesn't the high-gear disengage properly?

Answer: We can hardly do better than quote the Ford Manual in this connection—"it indicates that the clutch-lever screw which bears on the clutch-lever cam has worn and requires an extra turn to hold the clutch in neutral position. When the clutch is released by pulling back the hand

lever, the pedal should move forward a distance of one and three-quarter inches in passing from high speed to neutral. Also be sure the slow speed



band does not bind, on account of being too tight. Don't use a too heavy grade of oil in cold weather, as it will have tendency to congeal between the clutch discs and prevent proper action." Assuming that nothing is worn out, we believe that attention to the high-speed clutch adjustment will remedy your trouble.

THE COLLAR

The collar should be just large enough to permit a man's hand to pass inside the collar between the lower end of the collar and the neck or breast of the horse. If the collar is too loose it will cause friction; if too tight it will choke the horse, and cause sore withers. Test the fitting of the collar by lifting up the horse's head.

The hames should fit the collar; if too long, they will probably be buckled too tight at the top, and in this way the collar will be made to pinch the horse at the top. Sores thus produced begin by a pimple or very small boil, often overlooked because the mane covers it.

Examine your horse continually, and if there is any sore spot, adjust the collar so that it will not touch that spot. If the skin is merely wrinkled, bathe it with witchhazel or diluted vinegar. If the skin is broken, bathe it with clean water, containing a little salt.

If the collar "rides up," it can be kept down by a martingale running to the girth, or by an extra girth runnin gfrom trace to trace, back of the forlegs.

The best collar for a mature horse, whose weight does not vary much throughout the year, is the leather collar. But for most horses, the best collar is one stuffed with hair, and covered with ticking. With this collar, if the horse's shoulder becomes sore at any point, the lining of the collar can easily be ripped, and the hair removed or pushed aside at that point, so that no pressure will come on the sore place.

Collar pads are much used, but they quickly become dirty, cannot easily be cleaned, and thus cause many sores. Still, a pad that makes the collar fit is better than an ill-fitting collar without a pad.

By all means, clean the inside of the collar every night. If you wait until the next morning, you are likely to forget it. Of course you will clean the horse's shoulders as soon as the collar is removed. The salt sweat drying on the skin is what does the mischief.

BELTS AND PULLEYS

Pulleys carrying belts which are not to be shifted should be crowned, that is, the centre should be higher than the edges, the relief varying from one-sixteenth inch in small to one-eighth inch in large pulleys. This is because, owing to the higher speed of the centre, the belt tends to climb. Where pulleys are to be shifted the driving pulley should always be flat, the belt being maintained in position by the tight and loose pulleys of the driven members. If this is not done the belt will take a position on the crown of the wide pulley and ride partly on the tight and partly on the loose pulley.

There is absolutely no economy in feeding less than the fowls and chicks (especially the chicks) will eat.

Cows vary in their cost of keep as in their ability to use economically the feed.

MARKETS.

CHARLOTTETOWN

Beef, carcass, ox, 22c to 23c; cow, 18c to 20c.
Veal, carcass, 14c to 16c.
Hogs, 19c to 20c live weight; very few offering.
Lamb, 30c lb., (carcass).
Mutton, carcass, 22c.
Beef Hides, 34c.
Sheep Skins, stots, 60c.
Calf Skins, 74c lb.
Potatoes, 80c to $1.00 per bushel; very few available.
Carrots, none.
Turnips, none.
Parsnips, none.
Oats, 85c to 90c per bushel.
Cornmeal, $4.50 per bag.
Bran, $2.40 to $2.50 per bag.
Oatmeal, $6.00 to $6.50 per bag.
Middlings, $2.50 to $2.60 per bag.
Cotton Seed Meal, none.
Oil Cake, $3.75 to $4.25 per bag.
Buckwheat, none.
Ontario Flour, $12.00 to $12.15, wood.
Manitoba Flour, $12.00 to $12.50, wood.
Chickens, none.
Fowl, none.
Turkeys, none.
Geese, none.
Butter, Creamery, 50c to 55c.
Butter, Dairy, 40c to 45c.
Cheese, 28c to 29c; market unsettled and lower prices likely to prevail.
Wool, 70c to 72c.
Eggs, 42c to 43c.
Hay, Pressed, $23.00 to $25.00 per ton.
Straw, Pressed, $11.00 to $14.00 per ton.

THE LOCAL GRAIN MARKET

Montreal, Aug. 4.—On reports of showers in some of the corn belt and more liberal selling a weaker feeling developed in the market for future options and prices closed at a decline of 1⅜c to 2½c per bushel, but on the other hand the July future was strong and scored another advance of 1⅜c. Oats were easier and sold ⅜c to ⅝c lower, while rye declined ¾c to 1c and barley was very strong, closing with a net gain for the day of 2½c to 3¾c per bushel. The undertone to the Winnipeg market for oats continues strong and with good buying advanced ⅜c to ¾c, and barley 2⅜c to 2⅞c, while flax was weaker and declined 5c.

A firm feeling prevailed in the local market today for cash grain, and prices generally were maintained. There was some demand for oats from local buyers and sales of a few round lots of No. 3 Canadian western, extra No. 1 feed and No. 1 feed were made ex-water, and a few odd cars ex-store, but the volume of business on the whole was small and the market is quiet with No. 3 Canadian western and extra No. 1 feed quoted at $1.03½ per bushel ex-store, and ex-water at $1.02½. A few odd cars of barley changed hands for shipment from Ontario points, and No. 3 on spot was quoted at $1.53 per bushel ex-store.

THE LOCAL FLOUR MARKET

Montreal, Aug. 4.—There was no important change in the condition of the local flour situation today, but there may be some developments of importance in the near future. The demand from local and country buyers for Government standard spring wheat grade continues good and a fairly active business is passing for prompt and nearby delivery, wtih sales of car lots for shipment to country points at $11 per barrel in jute bags, ex-track, Montreal freights, and to city bakers at $11, ex-track, or at $11.10 delivered, while broken lots sold to city bakers at $11.10, ex-track, and to grocers and other dealers at $11.20, ex-track, all less 10c per barrel for spot cash. A very firm feeling prevails in the market for old crop winter wheat flour owing to the fact that stocks in first hands on spot are about exhausted. There were some enquiry today for small lots and a few sales were made at $11.40 to $11.50 per barrel in new cotton bags, and at $11.20 to $11.30 in second-hand jute bags, ex-store. New crop wheat flour is commencing to be offered by Ontario millers a little more freely and some business has been done in car lots for prompt shipment from the mills. The quality of the flour for the season of the year is reported to be very good. There is no change in the market for white corn flour, prices being maintained with a steady demand for small lots at $10.60 to $10.70 per barrel in jute bags, delivered, and re flour is quiet at $8.50, to $9.

MILLFEED AND ROLLED OATS

Montreal, Aug. 4.—The condition of the market for all lines of foodstuffs is strong and the prospects at present are for higher prices in the near future owing to the fact that supplies are none too large for which there is a good steady demand from all sources and a fairly active trade is reported. Sales of broken lots of bran in mixed cars were made at $45, shorts at $48, pure barley meal at $68, mixed grain moullie at $66, mixed moullie at $58, dairy feed at $50, and oat middlings at $47 per ton, including bags, delivered. There was no further change in the market for rolled oats, but prices rule very firm at the recent advance noted with a small trade passing in broken lots of standard grades at $5.25 per bag of 90 lbs., while Golden cornmeal was quoted at $5.50 per bag, delivered to the trade.

THE BALED HAY MARKET

Montreal, Aug. 4.—According to private advices received here from the United States today the tone of the market is stronger for some grades and prices have advanced $2 per ton. This had a tendency to create a better edmand here today for car lots and especially so for clover mixed hay for shipment to the above market and purchases of quite a few cars were made on spot and in the country. The domestic trade was quiet, but the tone of the market was steady with car lots of good No. 2 Timothy hay quoted at $28, No. 3 Timothy hay at $25, and clover and clover mixed at $20 to $22 per ton, ex-track.

THE PROVISION MARKET

Montreal, Aug. 4.—According to advices from Toronto on Tuesday an easier feeling had developed in live hog market since the close of last week and the prices quoted showed a decline of 25c per 100 lbs., with sales at $24.50 per 100 lbs. weighed off cars and at $24.25 fed and watered, while the f.o.b. price was 50c lower than last Thursday at $23.24. In spite of the above and the fairly liberal supplies coming forward to this market, the feeling has continued strong, and prices today scored an advance of 50c per 100 lbs. At the higher level there was a good demand from packers for all offerings, and an active trade was done. The quality of the stock was better owing to the fact that percentage of rough, heavy, sows and stags was smaller, and sales of selected lots were made at $24 to $24.50 per 100 lbs. weighed off cars. On account of the above the undertone to the market for dressed hogs was also stronger, and prices were marked up 50c per 100 lbs. The demand continues to be somewhat limited owing to the small consumption of pork in the hot weather and trade was quiet, with sales of odd small lots of city abattoir freshkilled stock in a jobbing way at $32.50 to $33 per 100 lbs.

There were no new developments in the market for smoked or cooked meats, prices for all lines being firmly maintained in sympathy with the strength in the market for hogs, and under a continued good demand for supplies for domestic consumption. The trade in a wholesale jobbing way was active, and sales of 8 to 10-lb. hame were made at 45c to 46c per lb., 12 to 15 lbs., at 43c to 44c, heavy weights at 41c to 42c, cottage hams at 42c, picnic hams at 33c to 35c, cooked hams at 65c and cooked shoulders at 52c, breakfast bacon at 47c to 48c, special brands at 54c to 56c, Windsor selected bacon at 50c to 51c, and Windsor boneless bacon at 55c to 56c.

The tone of the market for lard is strong, but no actual change in prices has been announced as yet. The demand for supplies for domestic account continues good, and an active trade was done in a jobbing way, with sales of Canadian pure leaf grades at 38¾c per lb. in 20-lb. wood pails, and at 30½c to 40c in 1-lb. blocks, while American compound lard is selling at 27½c in 20-lb. wood pails, shortening at 32c to 34c in 1-lb. blocks, and at 31c to 32c in 20-lb. wood pails.

The receipts of provisions today were 50 packages lard, 1,680 boxes hams and bacon, and 1,273 packages tinned meats.

FOREIGN GRAIN ADVICES

Liverpool, Aug. 4.—The situation in the United Kingdom remains very firm. Offerings of corn have been extremely light and even cornmeal is now being put forward in only limited quantities. Supplies of the latter have dwindled rapidly and are now of rather moderate proportions. Prices for cornmeal are advancing with values now quoted at 22⅝ pounds per English ton. We continue to receive complaints regarding the Italian crop which is suffering from the lack of moisture in sections. On the other hand, weather in the Argentine has been exceedingly favorable during the past week and the movement of corn from the interior is increasing in volume with a consequent enlargement in holdings. It is generally conceeded that the heavy precipitation experienced during and immediately after harvest caused such deterioration to the new corn crop in the southern grower, but it may be pointed out that the Argentine has an enormous surplus, and even allowing for a loss of about one hundred million bushels, or around one-half of the out turn, this country still holds liberal quantities of corn sufficient in fact to satisfy any likely European requirements, during the season.

Oats—There is a good enquiry for foreign oats in the United Kingdom at the maximum price of 59s for the American and 61s for the Canadian per quarter. These maximum prices are now under a foreign parity so that export business with both America and Canada has practically subsided. Reports of continental crops make France's prospects poor but those of Germany fair to good and in this connection it may be pointed out that Germany annually grows a large percentage of the oats in Europe.

STOCK NOTES

Orchard Hill Farm, Brown's Flats, N. B., have recently imported from the UnitUed States the pure bred Jersey bull "Pogis' Golden Port", an animal of excellent breeding and a nice individual. He is a grandson of the great Pogis 99th of Hood Farm, and has two crosses to "Fort Hill Farm Chief", the sire of Sophie 19th of Hood Farm, the champion long distance cow of the world with a record of 6600 lbs. butter in 7 years. His sire's dam has a record of merit test of 540 lbs. in 351 days and is a half sister of the richest official butter fat test cow in the world. His maternal granddam has an official record of 556 lbs. and is by Flying Fox's Victor, a sire of both high class show stock and great producers. He also has a half sister, from same dam, with record of 422 lbs. at 2 years. As this young bull carries much the same line of blood as the imported Grandiflora's Kathleen, now owned by Orchard Hill Farm, good results are expected from this mating. Orchard Hill Farm would extend the service of this bull to anyone wishing the service of a really high class animal.

ORGANIC MATTER

Ordinarily one thinks of organic matter in the soil merely in terms of fertility or plant food. To plow under a cover crop represents to one so much organic matter which will undergo decay and in so doing release certain soil elements of value to growing crops. However, the physical qualities of organic matter are of an importance scarcely if any less than the purely chemical or food providing resources which centre in it. Organic matter tends to make a soil dark in color, consequently it absorbs more heat and warms up sooner in spring. This in turn results in more rapid growth of the bacterial organisms which ply their trade in the upper layer of the soil and which are so necessary in the development of plant growth. In addition to this, organic matter makes a soil more porous and consequently increases its water-holding capacity. As a result it becomes more resistant to drought. All told, the purely physical influences which accrue as the result of adding organic matter to the soil are of far greater importance than many people would suppose.

WHITE-WASH RECIPE

A whitewash recipe which is popular for use around the farm consists in slaking a half bushel of lime in boiling water, keeping it covered during the slaking process. The lime is then strained and one peck of salt dissolved in warm water is added. Three pounds of ground rice are boiled with water to a thin paste; while half a pound of powdered Spanish whiting and one pound of clear glue are dissolved in water and then all these materials are thoroughly mixed together and allowed to stand for several days. This wash should be prepared in a kettle or portable furnace as, for best results, it should be applied as hot as possible with paint or white-wash brushes. The washes which contain milk, flour or glue should not be used in damp interiors because of the tendency of the organic matter to decompose. For such work it is preferable to prepare a whitewash according to some formula which does not include these ingredients. In all cases, whitewash is best applied with a broad, flat brush, the liquid being spread lightly over the surface which is to be painted. No attempt should be made to brush in the whitewash, as is done with oil paint.

FLY POISONS

The following are very convenient and effective fly poisons: Bicromate of Potash, one dram in two ounces of water. Add a little sugar. This mixture is not dangerous to human life. Another poison is one teaspoonful of formalin in ¼ pint of water. This must be kept away from children and house pets. To quickly clear a room where there are many flies, burn pyrethrum powder and sweep up the flies.

A PLACE FOR SKIM-MILK

In tests made in the Missouri station it was found that at the end of the first three weeks 100 chicks with skim-milk as the ration weighed 21.4 pounds, at a cost of 2.76 pounds of feed per pound of gain, the beef-scrap chicks weighed 15.1 pounds at a cost of 5.54 pounds of feed per pound of gain, and the no-milk-or-meat chicks weighed 9.86 pounds at a cost of 15.1 pounds of feed per piund of gain. The mortality in the lots was 13, 22 and 34 per cent. respectively.

SPRAY PINK AND GREEN POTATO APHIDS

(Continued from page 767)

kerosene emulsion and the one recommended on our spray calendar calls for one-half pound of soap and two gallons of kerosene to make thirty gallons. In this formula the soap seemed to be insuffiicient for the kerosene, so we increased the proportions somewhat. We also doubled the amounts of soap and kerosene but instead of mixing sixty gallons, diluted it less, to make fifty gallons, the right quantity to fill the spray barrel. Laundry soap was purchased by the box at wholesale prices, and the amounts of materials used were as follows:

Kerosene .....4 gallons
Laundry soap (about 30 oz) 3 cakes
Hot water .....2 gallons

After churning, dilute to make fifty gallons. The soap was shaved into thin slices with a tool for shredding cabbages, and was dissolved in water on a stove set up in the field for this purpose. It was then mixed with the kerosene and churned back and forth through a small tube under pressure by means of a bucket pump with the hose directed back into the liquid, after which it was transferred into the pump barrel and sprayed upon the plants with hand-power barrel pump with spray rods bent at an angle of forty-five degrees near the nozzles.

This emulsion was effective, and all aphids hit by the spray were killed. A part of one field was sprayed with nicotine solution and soap for comparison. Some of the men who applied the mixture thought that slight injury was caused by the kerosene emulsion, but the same thing could be deetected on some of the plants before they were sprayed. The variety was "Gold Coin," and there were many mosaic plants in the fild; the tissues break down and the leaves turn brown earlier on these plants and this is probably the explanation of the injury rather than the spray."

That there may be under some circumstances an opportunity to harvest a crop even during bad aphid years is indicated by the following statement from the Seventeenth Report of the State Entomologist of Connecticut for the year 1917:

"Mr. A. N. Farham, of New Haven, raised one of the best crops of potatoes in 1917 that he has ever grown. He planted early varieties as soon as the ground could be worked and matured the crop before the aphids came. One field at the Station farm gave a fair yield, but this was an early variety planted late, and was not attacked by aphids.

Although the pink and green aphid is treated in this account as relating to the potato crop alone, this species is during the summer months, what is tremed a "general feeder," being capable of developing the summer generations upon a large number of plants representing so far as yet ascertained ten or more widely separated botanic families. The fact that potatoes, which appear to be their favorite summer food, are grown over extended areas gives them an unlimited opportunity to spread when conditions in general are favorable.

Besides the pink and green aphid several other species of plantlice are known to infest potato, none of which have yet a record to equal the insect under consideration, although the "spincah aphid" (Rhopalosiphum persicae Sunzer) was present in varying numbers throughout the entire district infested by the larger pink and green aphid during the seasons of 1917 and 1918 and doubtless was a contributing factor to the potato disaster which extended half way across the continent.

Clean to handle. Sold by all Druggists, Grocers and General Stores.

DEFECTIVE CHIMNEYS DANGER TO HOME

Too much emphasis cannot be laid on the need for taking every precaution against the danger of fire in rural communities. In cities and towns, which are provided with proper fire appliances. many fires are arrested without any serious loss, but in rural districts where there are no organized fire fighting agencies, a fire usually amounts to a total loss; hence the need of using all possible means of prevention.

Common Cause of Fires

A summary of the various causes of fire, as given by fire cniefs, and other such authorities, reveals the fact that fires attributable to defective chimneys annually amount to from 10 to 26 per cent. of the total number, while in winter the proportion has reached as high as 50 per cent. Consequently it is up to farmers to give more attention to making the construction of chimneys as nearly fireproof as possible. tI is a well known fact that the ordinary brick and mortar chimney, as usually constructed, is always more or less of a source of danger. The constant heat from the fire, in time, causes the mortar to become so dry that it falls out of place leaving holes in the chimney. Such a condition may go unnoticed for a long time, and remain a constant source of menace.

Proper Chimney Construction

In constructing chimneys in buildings made of combustible material, the chimney should be built straight up from the ground and not placed on a bracket, as is often the case, and should extend 2 feet or more above the peak when the chimney is in the centre of the roof and 3 feet or more above the surface when on a flat or slanting roof. For proper draft, the minimum-sized opening for the flue should not be less than 64 square inches, while the walls should be at leats 8 inches thick. At the base of each flue a clean-out door should be provided, if possible. Whatever the material used in construction, it should be of good quality and laid in cement. Flue holes should never be filled with any inflammable material, but should be covered over in a secure manner with a metal flue stop.

The joists used to support the floors through which the chimney passes should not have their ends supported in brick, as the chimney may settle, leaving at these points, cracks through which fire may creep to the joists. Moreover no woodwork should come in contact with the chimney.

Fireproof Flue Linings

To overcome the fire hazard in brick chimneys, nothing is more effective than the scheme of providing some good fireproof flue lining. Such lining may be either fire clay or terra-cotta tile, and no difficulty will be experienced in its use. If fire clay is used instead of terra-cotta tile, the results will be similar if the size of the flue is not thereby cut down. The lining serves as a fire preventive, and in the case of terra-cotta tile gives a flue of uniform dimensions. The ordinary brick chimney will not do this. With lining the flue presents a smooth surface, which leaves no place for soot to gather, thus eliminating to a great extent the possibility of chimney fires. The cost of such a lining for an ordinary two-story residence would be nominal, and the lining should prove a cheap and effective means of fire protection. Fire brick might also be used in place of the fire clay or terra-cotta tile, with equally good results, but at a greater cost.

When the home is already equipped with an ordinary unlined brick chimney, the danger of fire will be very much lessened if it is given a close inspection at frequent intervals. If any breaks or cracks are noticed they should be at once repaired. Another important item is to see that the chimney gets an occasional thorough cleaning. This may be done quite readily with any sort of an improvised scrapping device, as for instance a pair of old automobile chains tied on the end of a rope.

Brantford "Ideal" Kerosene Engines

An engine for every need. Also operated on Gas and Gasoline.

Maple Leaf Grain Grinders. 6 to 15 in.

Kerosene Light Tractors

WINDMILLS,
Pumps.
Tanks.
Waterboxes.
Steel Saw Frames.
Concrete Mixers.

Agents wanted in unrepresented territory.

GOOLD, SHAPLEY & MUIR CO., Limited
BRANTFORD, CANADA

CONCRETE TILE FOR DRAINAGE

During the past few years the manufacture of cement drain tile has developed into a big industry. On account of the fact that it is an easy manufacturing enterprise to start, a good many inerperienced men began the manufacture of concrete tile. As a result there were in the beginning many inferior tile made. Careful investigation shows that wherever concrete tile have failed, it has been for one or more of the following reasons:

Improper seasoning of the tile.

The use of too lean a miyture of concrete.

The use of too dry a mixture.

Attempting to use the tile before they have sufficiently hardened in order to have gained the strength necessary to withstand the action of soil water upon the concrete.

The greatest difficulty which was experienced in the use of concrete tile was in alkali soils. However, by proper manufacturing methods, concrete tile are just as serviceable as clay tile. In order to prevent failures the American society for testing materials has adopted certain standards which ought to be followed if the best results are to be secured. Briefly the most important points are:

Clean and well-graded sand from very fine particles to those which will pass a ¼-inch mesh screen for all farm drain tile of less than 10 inches in diameter.

Proper proportioning and mixing of materials, using a mixture of not more than one part cement to three parts sand.

The machine that is used should be one that will enable the operator to properly pack the material so that the minimum density will be obtained.

The thickness of the tile walls should be uniform.

Perhaps the method of curing is the most important point. This can be accomplished by one of two methods: Either what is known as steam seasoning or water seasoning. In some cases a combination of both methods is used. If steam curing process is used, this method briefly stated is accomplished by placing the tile in eepecially arranged steam chambers. The steam chamber must be tight enough to prevent the circulation of air and must be so arranged that the steam entering the chamber does not come in contact with the green tile.

If the water hardening method is to be used, the tile must be kept some place where evaporation will not take place rapidly and no water applied until they have hardened sufficiently so that the application of water will not injure the surface of the tile. They should be kept wet by sprinkling for not less than seven days. The temperature ought not to be lower than 70 degrees. They should be stored in the yard for not less than 14 days after being removed from the curing room before being used.

There are, of course, many more details than those given which one would have to know before starting the manufacture of concrete tile. Anyone who is considering the purchase

of tile will see that concrete tile in order to be satisfactory to use in a tile drainage system must be well made. Concrete tile have been in use for a sufficient length of time, so that there is no question regarding their practicability.

HINTS FOR TRACTOR OPERATORS

Because of the farm labor shortage and because of the advance in price of man and horse labor over that of gasoline, there will be a greater demand for tractors on the farm this year than ever before. n view of the fact, it behooves us to repair and keep in sufficient use not only those machines that are in use, but also those partially disabled.

Repair work on the tractor must be done early, as repair parts, this year will be more difficult to obtain, due to congestion of traffic and the inevitable war shortage of materials.

"Cleanliness is next to Godliness," and is very essential in the successful operation of a tractor. Old grease serves merely to collect and hold dust and this mixture of dust and grease is then a grinding agent instead of a lubricant. A few gallons of kerosene will take off all the dirt and grease and make the tractor look like new. When clean, it is much easier to perfect adjustments than when the parts are clogged and hidden from view.

Since most tractors have exposed gears, the question arises as to how these gears can be lubricated and still not collect dirt. Some companies answer this by saying that you shrould not lubricate the gear where it is exposed to dirt. In this case they depend on hard faced gear teeth and think that a clean, dry gear will wear longer than a dirty one even though the latter is greased. It is possible to use a lubricant on these exposed gears which is so dry that it will not collect dust. Such a mixture is made by moistening equal parts of flake graphite and powdered rosin with gasoline and smearing this on the gear teeth. The gasoline evaporates, leaving the rosin to hold the graphite in place. This, of course, applies only to drive gears.

The lubricating system should be examined to make sure that it is working correctly. Over 90 per cent. of tractor troubles are due to improver lubrication. Here, again, cleanliness is absolutely essential. Unless the machine is in such bad shape that it needs overhauling completely, kerosene poured into the cylinders will soften carbon deposits, cut the gummy oil residue and loosen gummed piston rings. When the cylinders have been drained, the crank case must also be cleaned. Drain the old oil from the crank case and fill it with kerosene. Turn the engine over a few times to clean the case, and then drain out the kerosene as before. Carefully examine all bearings to see that they are tight and then refill the crank case with new oil.

See that there is proper clearance between the valve push rods and the valve stems when the engine is turned over. It should equal the thickness of a thin postal card.

Keep a supply of spark plugs on hand, also a few good tools. Good tools, properly cared for, will save a lot of time and money when the spring work begins.—E. M. Mervine.

TYPE ESSENTIAL IN BREEDING

There has been more or less discussion on the question of type during the last few years, some breeders taking the position that it was the record that the cow made rather than the type of individual that fixed the selling price, and that all the breeders could consider was the price and not the characteristics of the animal as to type. I do not agree with that position, nor do I believe that the Holstein-Friesian Association can afford to. I am thoroughly convinied that type is one of the most important principles that must be adhered to. I am satisfied that 80 per cent. of all the high record cows are reasonably true to type, proving beyond all peradventure that type and high production can be attained. No breeder should presume to use a sire whose ogspring has sloping rumps and bad udder, no matter what the record of his dam may have been.

The fact that animals do not breed true to type is evidence itself that we have neglected type to a greater or less extent in the past.

I believe, in awarding premiums, that large production should stand for a certain number of points. On the other hand, I do not believe that premiums should be awarded at all to an animal that is not a credit to the breed, regardless of whether or not there was any competition in the ring. I have visited fairs and seen shows of live stock, not only those of the Holstein-Friesian breed, but of others, where there was absolutely no excuse for giving them a premium; where they were not a credit to the breed, but rather a discredit, but because of no competition they were awarded prizes. This, it seems to me, is obsolutely wrong, and I believe that in awarding premiums at fairs, we should have some rule laid down clearly definng the requisites necessary to entitle animals to prize money.

I think the breeders, generally, realize that we have not been particular enough about type; they realize that there are a great many herd sires in service that ought not to be considered or tolerated. They are there simply because of the records of the dams. In some instances the calves you get of the animal are creditable, and in such instances they do no harm, only as it may acect future generations of the breed.

I think also, that those breeders who think records alone fix the price are wrong. I have seen men put 30-lb. cows in a sale ring for less than half the price of a typey cow with a very much less record, showing that type is considered in the auction ring as helping to fix the value of the animals, and I believe it would be a very hard matter to sell a real sloping herd sire at any price, at the present time, regardless of the record of the dam.

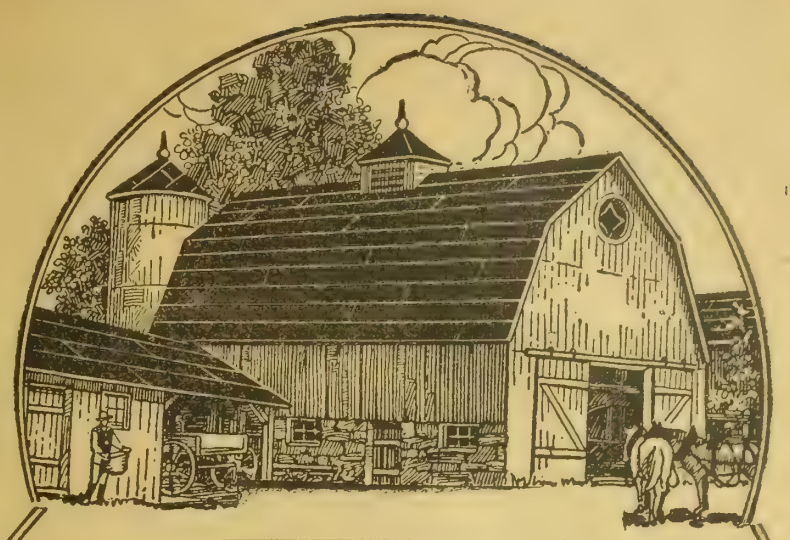
HON. D. D. AITKEN, President American Holstein-Friesian Assn.

DOES SOUR CREAM GIVE HIGHER TEST?

This question is often asked: "Does cream test higher when it is sour than when it is sweet?" Many have been led to believe that by holding their cream on the farm until it was real sour they would be given a higher test. This would be possible under one condition and that is, if a can of cream were allowed to stand for a long time at a regular high temperature there would be enough moisture evaporate to increase the percentage of fat slightly but this would be very slight and in that time the cream would no longer be fit for human consumption. Even then the extra percentage of fat would only make up for the amount of moisture which has evaporated.

For instance, if there were 80 pounds of sweet cream testing 30 per cent. butter fat, in this amount there would be just 24 pounds of butter fat Supposing this were allowed to stand until five pounds of moisture had evaporated this would then leave 75 pounds of cream testing 32 per cent. fat. It would also yield 24 pounds of butter fat and it is needless to say that the butter made from this 75 pounds of so-called cream would not be fit to eat.

It may be true that in some cases a higher test has been reported when the cream was sour, especially in thin cream. If a can of cream has been allowed to stand for any length of time and becomes sour the milk solids would settle and become very sour and firm. This makes it almost impossible to get the can of cream thoroughly mixed, therefore, the sample which is taken will not represent the contents of the can it is taken from as there would be practically no fat in the milk solids which are left unmixed. Many have, therefore, been led to believe that cream would really test more when sour than when sweet. If a higher test is given it is not accurate. W. H. UNDERWOOD.



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"RUBBER"
ROOFING

You can see the quality of Barrett's Everlastic "Rubber" Roofing as soon as you open the roll.

The best of materials, the utmost skill possible in manufacture, and the experience of over sixty years in making high-grade roofings goes into every roll.

Thousands of rolls of Barrett's Everlastic Roofing have been used by the Canadian and U. S. Governments, the leading railroads, and the largest contractors in the country. Dollar for dollar, it is the best "rubber" value obtainable today.

Don't waste your money on poor roofing that will need to be renewed in a short while. It will pay you better to insist on Barrett's Everlastic and see that you get it. The name Barrett is your guarantee against disappointment. You will find it on every roll of the genuine Barrett Roofings.

THE BARRETT CO., LIMITED
(formerly The Carritte-Paterson Mfg. Co., Limited)
ST. JOHN, N.B. HALIFAX, N.S. SYDNEY, N.S. Ad. No. 1

HARD LUMP ON BULL'S LOWER JAW

I have a three-year-old Holstein bull that has a lump on the lower jaw. It is quite hard, and two months ago bothered him quit ea bit when eating, but lately not so much. A. C.

If the lump has appeared as a result of an accident or blow on the edge of the jaw-bone, rub it daily with tincture of iodine, but first clip the hair off the lump.

If the lump arises from the lumpjaw disease, then medicinal treatment consists in giving the affected animal one drachm of iodide of potassium three times a day in a soft mash, till the effects of the drug was visible in the production of slavering at the mouth, tears in the eyes and loss of appetite. Then stop for a week and repeat the drug treatment. A couple of months or so of this treatment will usually cure a case that has not been allowed to run too far. Keep the bull isolated from the rest of your herd until cured, as it is somewhat contagious.

GETTING AT COST OF PRODUCING MILK

"It cost us $1.08 per hundred lbs. labor not included, to produce milk on the Macdonald College farm for the seven months just past," said L. C. McOuat, B.S.A., of Masdonald College to a staff representative of the Ottawa Farm Journal a few days ago. Mr. McOuat went on to explain how the cows were fed. and pointed out that no special effort had been made to make a record for cheap production. An individual feed cost was kept of every cow, as is always customary, and against this was the milk yield. There were altogether 45 cows in the test, and they were in all stages of lactation, many of them freshening throughout the winter and others almost dry. The labor of caring for the herd was not included. Asked as to what constituted the main rations, Mr. McOuat replied that for roughages, clover hay, corn ensilage and a few roots were principally used. while the meal ration was made up of distillers' grain, wheat bran, gluten and oilcake in various proportions. Naturally the rations varied from time to time, and also with the individual cows, but generall speaking that was the usual programme of feeding.

DISEASE SPREADERS

In the control of animal diseases the proper disposal of carcasses is important. Infectious and contagious diseases can be spread by leaving the bodies of dead animals where dogs, birds and other animals can get to them. The best methods of disposing of such carcases is to burn them until nothing but ashes remain. As this is often quite a task, especially where it is a large animal, the next method is burying under at least 5 feet of soil, covering the body with plenty of quicklime.

COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep

Orders now booked for EWE and RAM LAMBS for fall delivery, several extra good animals for sale out of Ewes clipping 10 to 12 lbs. and sired by an Imported Ram weighing about 400 lbs. with a clip of 18 lbs.

BREED LEICESTERS the Sheep with THE HEAVY FLEECE.

G. C. Cossar, Proprietor. J. Meiklejohn, Agent.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm
OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired by Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

Clearing Sale of Shorthorn Cattle

Am offering for sale my herd of pure bred registered Shorthorn cattle. These cattle range in age from 7 years to 3 years, or a little less, with one bull calf two weeks old, and are all fine in type and color.

I have also exceptionally good grade cattle of various ages for sale. All will be sold at a reasonable price and offer an unusual opportunity to anyone desiring to start a herd of choice stock or to renew an old herd.

J. E. HETHERINGTON, - Codys, N. B.

FOR SALE !

Two excellent Guernsey bulls from good stock, will be sold reasonable if taken at once.

SARAH E. M. SMITH,
Woodwards Cove, Grand Manan, N. B.

FIRSHADE FARM
DUAL PURPOSE SHORTHORNS
Present Offering:—Two Bull Calves

No. 1.—Son of Daisy Lodge, R. O. P. 11,638 lbs. milk, 480 lbs. fat. This cow led the four-year-old class in the Canadian Record of Performance.

No. 2.—Son of Queen Charlotte. She as a two-year-old has a R. O. P. of 7224 lbs. milk, 316 lbs. fat. This cow stands eighth in milk and sixth in fat production in the two-year old class.

The sire of these calves is Nivelle, whose dam as a two-year-old has a R. O. P. of 5496 lbs. of milk, 240 lbs. fat in 295 days.

P. R. L. FAIRWEATHER, Rothesay, N.B

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

Bloomfield Stock Farm

Ayrshire and Guernsey Cattle—Shropshire Sheep

We are offering males and females, all ages. Have some good cows to freshen soon. Am booking orders for ram lambs for fall delivery. Write or phone for prices and description.

J. ROBIE MacDONALD,
Shubenacadie, - - Nova Scotia
Successor to J. MacDonald & Son

Auto Tires $17.50

Fine non-skid tire for small cars, size 30 x 3½, fully guaranteed for 3500 miles

The Maritime Farmer begs to announce a substantial reduction in the price of non-skid tires for small cars, Fords, Chevrolets, Maxwells, etc. They are FIRSTS, fully guaranteed and we will sell them to you, provided you are a paid-up subscriber to the Maritime Farmer for $17.50 f. o. b. Sussex. Plain tires for $16.25, fully guaranteed for above mileage. Tubes for same size tire $2.90. These goods are all A1 stock and are made by a well known tire house. Of course these prices are for spot cash with order. The Maritime Farmer was able to take advantage of the recent break in the market and its large buying capacity to get you the benefit of this substantial cut in price. IT'S THE BEST BUY IN CANADA Today. Write the Auto Department, Maritime Farmer, Sussex, N. B.

A VERY VALUABLE BOOK

The Veterinarian, by Charles J. Korinck, V. S., is a work on the afflictions of horses, cattle, sheep, swine, poultry, etc., which every farmer should have in his home. The story of how treatment can best be administered is told in simple every-day English that any person can understand. The methods suggested by Prof. Korinek are simple and easily followed. The book will cost you seventy-five cents, postage paid. It may be the means of saving you as many dollars in the near future. How many men are there who meet trouble by writing to the Maritime Farmer or some other paper for information which will be found in the Veterinarian? It is strongly bound in cloth, has serviceable illustrations and is well indexed. Seventy-five cents will bring it to you.

HOW TO MEND GRAIN SACKS

Grain sacks can be mended very nicely by using a crooked needle, and if you can not get a bent needle of your dealer, take a strong darning needle and hold the point in the fire a short time to draw the temper, then bend to suit. Get a light, smooth board 18 inches by 12 inches and round off the corners so it will slip in the sack easily. Turn the sack inside out, insert the board, then lay on your patch and sew around the edge of the patch, using the over stitch. Reverse the sack, insert the board as before, always keeping the board directly under where you are sewing, and over stitch around the edge of the hole, or for neatness, turn under and sew. Wrapping cord that comes around store goods makes good mending thread if waxed with beeswax.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

FOR SALE !

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st, 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and 1st in grade cow, competing against all breeds at our late show at Charlottetown, with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

Present offering: one bull two years old, two aged seventeen months. Also a number of younger ones. Females any age. This herd is bred for production having the combined strain of "Jean Armour" and "White Heather"

J. FRANK ROACH, Proprietor,
Phone 111. - - - - Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.

We have young bulls for sale whose two nearest dams (both Canadian champions) average as high as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows; and one ready for service from a 41-lb. sire and an 18,000-lb. two-year-old dam. Send for our BOOK OF BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT

BELLEVUE STOCK FARM
Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, HAMMOND RIVER, N. B.

We are offering for sale calves of both sexes, sired by Dutchland Pieterje Count, a bull of splendid size and type, whose four nearest dams have records averaging 28.61 pounds of butter in seven days. His dam is a daughter of Colantha Johanna Lad, who has 101 A. R. O. daughters, 4 over 32 lbs., 7 over 30 lbs., three of them world's records for 365 days. If you want something choice, come and see these calves or write for further particulars.

We will also book orders for young Yorkshire pigs for next spring's delivery.

WM. S. HARDING, Prop.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

We have sold 13 head in the last few weeks but there are some dandy good ones left yet. Special offering—2 heifer calves and several bull calves, sired by Prince Colantha's Canary B. whose four nearest dams average 32.84 lbs. butter in 7 days; 105 lbs. milk in one day. These are beauties. A couple of yearlings and two-year-old heifers, bred to Prince, due in the fall. Several young cows and heifers milking, due to calve from August to December. We have a couple of bull calves fit to head the best herds in the provinces. Come and see them. We would be pleased to meet you at Truro if notified.

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BULL'S CREEK FARM
R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lbs. butter each in seven days. These cows have in turn been bred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkable combination of breeding and will sell a heifer calf or two. Get your orders in quick, they won't be here long.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick

FOR SALE !

Ayrshire bulls, eleven to fourteen months. R. O. P. ancestors and best of breeding.

A. A. H. MARGISON
EAST CENTREVILLE - - N. B.

Five Ayrshire Bulls for Sale !

From good milking strain. All fit for service.

Prescott Blanchard,
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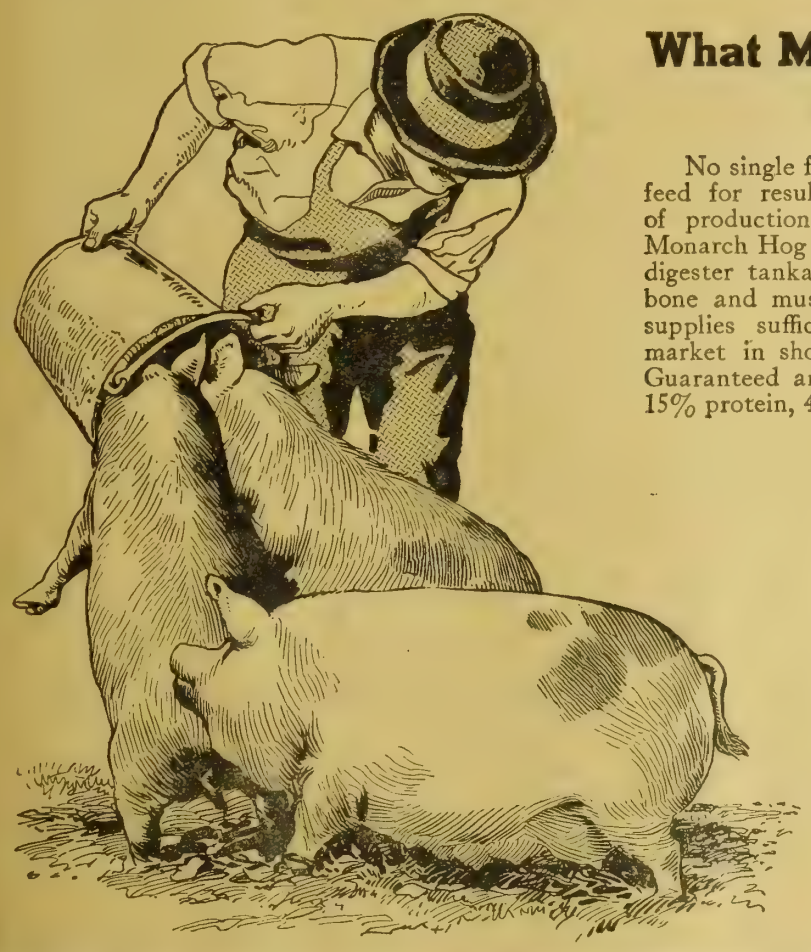
More Pork and More Profit

Heavier, Cheaper Hogs in Less Time

HOW to round your hogs into tip-top shape for an eager market at lowest cost—that is the problem Monarch Hog Feed is solving for farmers every day. Monarch Hog Feed is a properly balanced feed, supplying every requirement for sturdy hogs with stamina, energy, vigor and size; it has exactly the right proportion of protein and fat to finish your hogs in the shortest time.

Monarch Hog Feed

makes more pork and better pork; it shortens the hogs' stay on the farm and reduces cost of production; it gets hogs to market in best condition; in fact it solves the problem of economical feeding in these strenuous times of high-priced feeds—and there's money in good hogs nowadays. Improper feeding is one of the causes of soft bacon, declares Prof. G. E. Day in Ontario Agricultural College Bulletin No. 225. Monarch Hog Feed used along with the proper amount of roughage means good hard bacon that gets the best prices.



What Monarch Hog Feed is made of

No single feed can equal the properly mixed feed for results as to gain per day and cost of production. The principal ingredients of Monarch Hog Feed are shorts, corn products and digester tankage. This combination is rich in bone and muscle forming ingredients, and also supplies sufficient fat to bring your hogs to market in shortest time and in best condition. Guaranteed analysis of Monarch Hog Feed is 15% protein, 4% fat.

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has guaranteed analysis of 20% protein and 4% fat. It is a properly mixed combination of Oil Cake Meal and Cotton-seed Meal with the bulky feeds, bran and corn meal. Though very rich, ensuring splendid results, it can be fed alone.

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Pigs "go for" Monarch just as they are doing in the picture. It is a palatable, easily digested feed. For profitable results it is the most dependable feed—and, remember, you can depend upon getting it, while mill feeds are often unobtainable.

Give it a trial. Order a ton from your dealer and note results. If your dealer does not handle Monarch feeds, send us his name and we will see that you are supplied.

The Campbell Flour Mills Company, Limited

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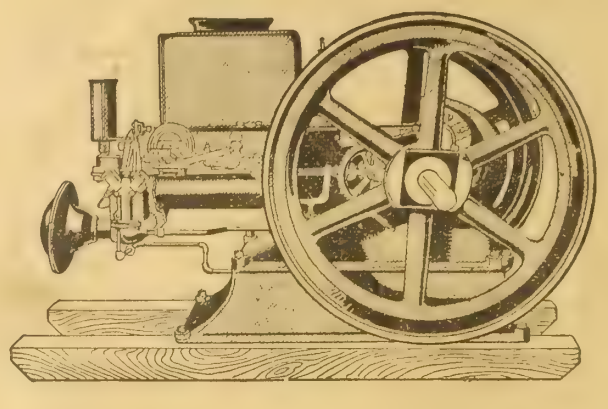
10

CURING THE BUTTNIG RAM

Rams that become butters are generaly tame ones. It is a good plan to have the ram tame, in order to feed him extra at tupping time, and be able to catch him to take him from one place to another at breeding time, or away from the ewes in the day time and back to them at night, which is good practice. But the taming of a ram can easily be done without teaching him the trick of butting. Never let a ram get in behind you that has the habit of butting, and keep the children away from them. A collar round the neck with a chain attached that will drag on the ground amongst the ram's feet is advocated as a reliable prevention of the habit. But for a positivey dangerous ram there is no reliable cure. If a person is attacked in the middle of a field, and has no means of gaining the shelter of a fence, he should lie flat on the ground and when the ram comes up to investigae the change of front you have made, as he will invariably do, catch hold of a foreleg and turn him on his back. He cannot get up when in this position, and by the end of ewenty minutes or so he will be so dazed and all the butting spirit will be out of him. From personal experience the writer has proved this method to be of practical value, when in a tight corner with a butting ram, but the preventative measure is to beware of fooling with them when taming them for practical purposes with the flock of ewes.

100% Efficiency with Kerosene



THE big thing to look out for when choosing a kerosene engine is this: Is it designed on true kerosene principles, or is it just adapted from machines built on gasoline principles? There is a world of difference. The *real* kerosene engine saves fuel and gives you maximum power. If you want 100% kerosene efficiency you will decide in favor of the

Renfrew Kerosene Engine

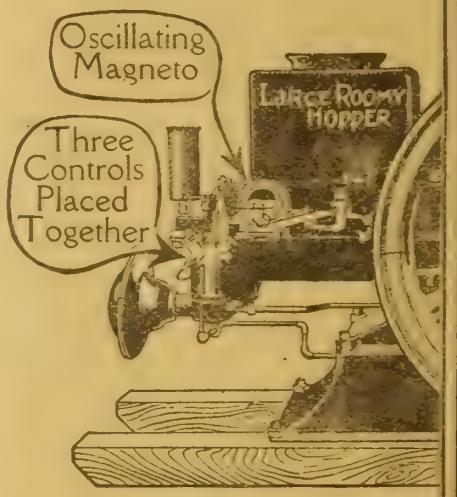
It is a *true* coal oil burning engine, designed precisely to get the last kick of power out of cheap coal oil. What a saving that means over gasoline at present prices we do not need to tell you.

Adapted engines simply cannot get the vaporized kerosene into the chamber warm enough. The Renfrew short manifold intake gets it to the right spot both *quickly* and in a *hot* condition. Thus it gets *full* power out of the fuel from both compression and explosion of the vapor.

In a real kerosene engine a big fat spark is indispensable. The Renfrew's oscillating magneto is designed to get that big spark at the right moment—and does it.

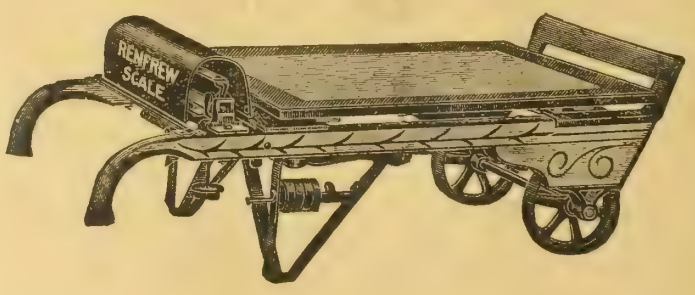
The special kerosene mixer, equipped with auxiliary air-valve, insures properly mixed charge for either light or heavy loads.

All these special kerosene features mean 100% service at the lower cost of kerosene over gasoline. That's the engine for *you*. Won't it pay you to get our illustrated booklet giving complete details? Write for it today.



You're Losing Enough to Pay for this Scale

A farmer often loses enough on one single sale of cattle on the hoof, or hogs, or sheep, to pay for a Renfrew Truck Scale. The only way to be on even terms with the shrewd, experienced cattle buyer is to weigh your live stock on the



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Volume 24. SUSSEX, NEW BRUNSWICK, AUGUST, 26 1919. Number 22.

The Value of the Pure Bred Dairy Bull in the Grade Herd

By E. S. Archibald, B.A., B.S.A., Director Exp. Farms

During the past seven years a great deal of attention has been given this subject by the Dominion Experimental Farms; and many experiments of this nature are now under way. As it takes many years to accumulate very accurate information on this subject the results of a reasonably definite nature are only now obtainable from a few farms. Following is a list of farms and stations where this work is being conducted;—

Experimental Farm or Station at:	Class of Female Foundation.	Breed of Bull Used.
Nappan, N. S.	Good grade heifers	(Ayrshire (Holstein (Guernsey
Fredericton, N. B.	Average grade cows	(Ayrshire (Holstein (Shorthorn
Ste. Anne de la Pocatiere, P. Q.	Average grade cows	Ayrshire
Cap Rouge, P. Q.	Good grade cows	French Can.
Spirit Lake, P. Q.	Average grade cows	Ayrshire
Ottawa, Ont.	Excellent grade cows	(Ayrshire (Holstein
Kapuskasing, Ont.	Good grade cows	Ayrshire
Lacoma, Alta.	Common grade cows and grade heifers	Holstein

Many factors have entered into these experiments which prohibit definite deductions to date. However, the following summaries show progress and warrant considerable study.

TWO points must, in fairness to younger cows and heifers, be kept in mind, namely;—

1. During the war feeds were difficult to obtain, hence younger generations did not have as good an opportunity as their dams at the same age.

2. These grade herds have increased rapidly and the greater numbers in itself would usually mean slightly lower production, but with war conditions of labour and feeds, with pasture shortage and similar items, there is a considerable margin of error which may be corrected during the coming year.

NAPPAN, N. S.

Experiment Established, 1911.

Summary to April 1st, 1919.

In the year 1911, eleven good grade yearling heifers representing good grade dairy heifers of this part of Nova Scotia, were purchased as a foundation. Only nine of these were used in the experiment. These turned out to be very good heifers which made good records, decidedly above the average production of grade heifers in Eastern Canada. During the first three years these foundation heifers were bred to Ayrshire, Holstein and Guernsey bulls, dropping eight, six and three heifers respectively. This was again repeated in the next three years and four, three and three heifers of similar breeding resulted. The heifers and their progeny have been bred continuously to bulls of the same breed as their sire.

During the seven years a large herd of good grade cows has resulted all springing from the nine grade heifers, and all sired by pure bred bulls. No crossing of breeds was done.

When the experiment was started there was ample pasture for the foundation heifers and first crop of calves only, but the immediate extension of pasture lands was anticipated. However, owing to war conditions no extensions materialized. Hence, the production in summer did not increase over heifer records with the foundation cows as it should have and each successive crop of heifers in milk made matters worse and did not show the advance in records proportionate with the improved breeding.

Each crop of heifers was bred to freshen at the same age and season of the year as the foundation heifers. Had pasture been available this would have made an ideal comparison, but as it was the increasing shortage of feed was an extra handicap to each successive crop of better bred heifers.

A striking point brought out in this work to date is the transmission by the bulls of different breeds of the dairy type, colour and other breed characters.

The mass of data so far collected is of such bulk that only a brief summary is here possible. The most outstanding features to date are as follows:—

1. Foundation grade heifers made excellent two year old records, but have not materially increased these as mature cows owing to above mentioned reasons.

2. The first cross Ayrshire heifers (first crop calves from foundation heifers by Aprshire bull)—50 per cent Ayrshire blood, as two year olds 71.4 per cent exceeded their dams' records at same age, 28.5 per cent as three years olds exceeded their dams at same age, 14.2 per cent at four years exceeded dams and 33.3 per cent at five years exceeded dams.

3. The second cross Ayrshire heifers (daughters of first cross Ayrshire) —75 per cent Ayrshire blood, as two pear olds 25 per cent exceeded their dams records at the same age, as three year olds again 25 per cent were superior and as four year olds 33.3 per cent were superior to their dams.

Compared with the foundation heifers at three years old the second cross heifers showed 33.3 per cent superior to grand dams.

4. The third cross Ayrshires,—87½ per cent Ayrshire blood—have not as yet had a fair chance for comparison,

SUMMARRY DAIRY CATTLE GRADING EXPERIMENT TO APRIL 1, 1919. FREDERICTON, N.B.

Table. I.

Class of Cows—Common grade at mature age	Number of days milking	Lbs. milk.	p.c. fat	Lbs. butter 85 p.c.
Brindle	300	5582.2	4.7	257.6
Bessie	229	4480.9	3.8	200.5
Brownie	262	3623.8	4.2	177.7
Madge	173	3442.7	3.8	151.5
Tiny	274	5075.3	3.4	205.0
Hannah	229	4521.9	3.7	199.3
Average six head	244.5	4454.47	3.9	198.6

Table II.

Class of Cows—1st crop from grades, Holstein sire as 2 yr. olds.	Number of days milking	Lbs. milk.	p.c. fat	Lbs. butter 85 p.c.
Brindle 1-H	355	*6179.1	4.1	294.78
Bessie 1-H	290	3337.2	4.5	179.18
Brownie 1-H	366	*5497.8	3.6	229.21
Madge 1-H	287	*4493.6	3.2	158.20
Tiny 1-H	289	3528.9	3.6	148.17
Hannah 1-H	301	4234.4	3.6	180.70
Average six head	314.7	4545.2	3.8	198.37

*—Heifers at two years exceeding their dams' records at maturity.

Table III.

Class of cows—Common grades at maturity present lactation	Number of days Milk to date	Lbs. milk	p.c. fat	Lbs. butter 85 p.c.
Sally	68	1822.0	4.3	91.40
Brindle	92	2958.3	4.3	148.99
Maggie	6	1454.4	3.9	64.27
Shannon	71	1798.0	3.7	79.06
Blossom	91	2592.7	3.8	115.74
Quennie	70	2360.5	3.3	96.94
Average six head	76.5	2164.3	3.9	99.40

Table IV.

Class of Cows—2nd crop from grades, Short horn sire as 2 yr. olds present lactation.	Number of days Milk to date	Lbs. milk	p.c. fat	Lbs. butter 85 p.c.
Sally 1—S	82	*2620.0	3.7	113.83
Brindle 1—S	85	1629.0	3.7	70.18
Maggie 1—S	64	1427.8	4.2	64.90
Shannon 1—S	68	*1881.3	3.9	89.13
Blossom 1—S	78	2296.6	3.6	95.88
Queenie 1—S	78	*2858.8	3.5	118.10
Average six head	75.8	2118.9	3.8	92.00

*—Heifers at two years exceeding the dams' records at maturity.

but to date have not excelled their dams to any appreciable degree.

5. The first cross Holstein heifers (first crop calves from foundation heifers by Holstein bull)—50 per cent Holstein blood, as two year olds 50 per cent exceeded their dams at same age, as three pear olds 16.6 per cent exceeded dams at same age, as four year olds 16.6 per cent exceeded dams at same age. This is not as great improvement as with the first cross Ayrshire heifers which may be due to the fact that the bull was not as good a dairy sire, but more apt to be due to the decreased pasture per head and consequent poorer summer feeding.

6. The second cross Holstein heifers, 75 per cent Holstein blood, as two year olds 66..6 per cent exceeded their dams at the same ag, which is a material advancement over Ayrshire heifers of similar breeding.

FREDERICTON, N. B.

Experiment Established, 1915.
Summary to April 1st, 1919.

1. The foundation cows were representative of the average grade dairy cow in the district.

2. The first table gives the record of foundation cows—mature age—the second pear in our possession and after the first crop of calves (grade Holsteins) were born.

3. The second table gives the record of the Holstein heifers from foundation cows as two year olds. A comparison shows that these heifers produced 2% more milk and as much fat as their dams at maturity. As three year olds these heifers are producing 30% more to date than as two year olds, and it is safe to predict that they will produce at least 33% more than their dams when mature.

4. Table three shows the foundation cows again as Mature to date in present lactation.

5. Table four shows their second crop of calves by a Shorthorn bull as two year olds in their present lactation to date in which they are equal to their dams at maturity.

OTTAWA, ONT.

Experiment Established, 1913.

Summary to April 1st, 1919.

1. The foundation grade cows were the best obtainable grade Ayrshire and Holstein cows, equally divided, and all mature. It was expected that the rearing of daughgters superior to their dams would be difficult.

2. The loss of buildings by fire in 1913 and other circumstances later necessitated disposing of many foundation cows. This coupled with the fact that the majority of cows dropped during the first two years were bulls delayed progress.

3. Only two original cows have daughters which have completed one or more full lactation periods, details of which are given herewith. At present several heifers both Ayrshire and Holstein grades are completing two pear old records, many exceeding 10,000 lbs. milk and all equal to or superior to the average mature record of their dams..

Name	Class of cow	Age	No. days milk	Lbs. milk	p.c. fat	Lbs. butter 85 p.c.	No. of Lactation avge.
1. Diamond	Grade holstein	Mature	368	11389.	3.41	457.2	3
2. Johanna	"	Mature...	234	6415.	3.34	252.4	1
3. Diamond A..	Daughter of above by holstein sire	2and 3 yrs.	398	10316.	3.66	446.7	2
4. Johanna A..	" "	2and 3 yrs.	316	7554.	3.95	350.5	2

LACOMBE, ALTA.

Experiment Established, 1913.

Summary to April 1st, 1919.

1. The foundation cows are in two groups, namely:—

A. High class Holstein Grades.

B. Common mature cows representative of the average grade cows in Central Alberta.

2. The following tables are self-explanatory. It will be seen that for both groups the progeny by a pure bred sire as two year olds produce almost as much as their dams at maturity.

3. The large percentage of bull calves during their experiment has hindered greater progress, but another year will see a marked increase in records of progeny.

Name	Class of cow	Age years	No. days in milk	Lbs. milk	p.c. fat	Lbs. butter 85 p.c.	No. of milking period avge.
No. 17.....	High grade holstein grades..	3 and 5....	461	8513.5	4.2	424.8	2
No. 20.....	"	4-5-6-7.....	393	9006.0	3.31	359.0	4
No. 19.....	"	3-5-6.....	390	7728.7	3.38	307.3	3
No. 42 (16A)....	Daughter of above by holstein sire	2	346	9110.2	3.4	362.5	1
No. 41 (17A)....	" "	2	324	7725.0	3.6	313.2	1
No. 47 (20A)....	" "	2	304	5815.9	3.28	224.8	1
No. 54 (19A)....	" "	2	451	8482.6	3.23	322.3	1

Name	Class of cow.	Age years	No. days in milk	Lbs. milk	p.c. fat	Lbs. butter
No. 4.....	Common cow.....	Mature	192	3054.5	3.32	101.5
No. 33.....	"	"	317	4401.3	3.31	171.3
No. 34.....	"	"	491	8491.3	4.48	393.2
Average all.....	Lactations for three.....	"	295	4800.3	3.65	224.8
No. 49 (4A)...)		(2	193	1570.2	3.1	57.4
No. 44 (33A)...)	Daughters of above cows...	(2	414	4869.7	3.42	195.8
No. 34 (34A)...)	by Holstein sires	(2	220	3356.2	3.53	139.3
Average 1..:.....	Lactation each.....	2	275	3265.4	3.35	130.8

AGASSIZ, B. C.

Experiment Established 1913.

Summary to April 1st, 1919.

1. A number of excellent high grade mature cows were among the original 18 foundation cows, hence progress is sure to be slower than with a foundation of poor cows.

2. During the years 1915, 1916 and 1917 the cows were used for feeding experiments which would account for lower relative production than 1914.

3. The first sire used in this work had not the same relative excellence in type and records, as the grade females, although a fairly good bull.

4. In the year 1915-16 the records of several two year old heifers from the original cows, and by unknown sires, are included in the 18 cows reported.

5. It was necessary to reduce the number of cows in 1916-17 in order to accomodate the young stock. In this year, too, heifer records are included —in consideration of which a marked increase in production is evident.

6. In the year 1917-18 all the original excellent foundation females, gone. This year's records consist of the daughters of these cows, the majority of which are two year old records. Hence in another two years when these animals are mature the grade herd should show milk production fully 30% higher than the foundation herd.

7. Much higher class bulls are now being used so it is expected that progress will be still greater.

Period and number of cows.	Number days in milk	Lbs. milk for period	Daily milk yield lbs.	p.c. fat	Lbs. fat for period	Lbs. butter for period
1913-1914, 18 cows.....	294.6	7628.2	25.89	3.51	268.12	335.15
1914-1915, 17 cows.....	325.	7281.4	22.4	3.35	244.39	305.48
1915-1916, 18 cows.....	338.93	7241.1	21.4	3.24	234.68	293.35
1916-1917, 9 cows.....	341.77	7620.7	22.29	3.23	247.67	309.6
1917-1918, 20 cows.....	350.6	7972.56	22.76	3.34	266.67	333.33

How Contagious Abortion is Prevented and animals Affected Should be Treated

Many inquiries reach this office regarding the eradiction and control of abortion amongst cows. At the present stage of veterinary science it cannot be said that this disease can be eradicated, but there are methods that can be applied whereby it can be controlled to a degree where loss will be of small account. Some have claimed to be able to prevent an abortion, where the case is taken in time, but whenever the disease has progrssed to the point that symptoms are manifest, the conditions are such that the calf can no longer live within the diseased uterus and it must be expelled. Moreover, it is dangerous to the life of the cow to seek to retain the dead calf within her.

In many contagious diseases, where the animal survives, and immunity remains, man has been able to induce this immunity artificially through the use of vaccines. In abortion disease, too, there is a decided tendency toward immunity, but efforts toward developing a satisfactory vaccine have not been crowned with success. Main reliance, therefore, must be placed upon preventive measures rather than drugs and vaccines.

Control of abortion disease is dependent upon three fundamental principles: Prevention of the dissemination of infection, developing herd immunity, and treatment of affected animals.

Prevention of Infection

In combating abortion disease much depends upon the general herd management. The dead calf and its membranes and accompanying discharges are teeming with the germs of the disease. They should be promptly gathered up and destroyed by burning, or buried deeply. The aborting cow continues to disseminate infection in her discharges for weeks, and far more disease is spread at this time than at any other. Consequently, isolation of the aborting cow is of the greatest importance in preventing the spread of the infection. The germs may be conveyed to susceptible cows in many ways where efforts are not put forth to limit the infection. For instance, in the dairy herd, a cow aborting in the line drops the infectious material in the stable, a careless attendant tramps through it, soiling his boots; he then walks up and down the feed alleys or climbs into the silo, spreading infection wherever he goes.

Often the aborting cow becomes a "buller," and where the bull runs with the cows, he is continually transmitting the infection in an active form from the infected cow to the remainder of the herd. Do not permit the bull to serve any but perfectly healthy cows, and under no circumstances should discharging cows be permitted in the herd.

Where a cow has aborted, remove all manure and litter, thoroughly clean floor and walls and spray with compound cresol solution, one part to thirty parts of water, i.e., a 3 per cent. solution. Any other good disinfectant may be used. Finish by whitewashing, the wash being made thin and applied as a spray. Whitewash itself is a good disinfectant, and it has the advantage of being easily seen, thus serving an an indicator to show the thoroughness of the work.

Provide clean quarters, for where animals are kept under favorable conditions they thrive and amply repay for added care and attention. In cambating contagious disease, sanitation is doubly important. Disease-producing germs live for a long time in dark, damp, filthy stables, and those same conditions are unfavorable for animals, lowering their vitality and resistance toward disease. Disease germs cannot long survive in clean quarters, well ventilation and flooded with sunshine.

Starvation, the use of spoiled feed or feed containing certain poisonous principles may seriously affect reproduction, especially in the presence of infection. A varied diet containing all the elements necessary for growth, must be supplied to the breeding herd to promote vitality and the power to resist disease.

Herd Immunity

In this connection, Geo. M. Potter, of the Kansas College of Agriculture, explains that investigation has shown that approximately two-thirds of the cows that abort lose their calves but once where properly treated, and thereafter they become immune. About one-third abort a second time, and only a small per cent. a third time. It is true that in such herds the disease may continue to manifest itself for some time by an occasional abortion, a retained afterbirth, or a case of sterility, but practically the disease may be said to be under control.

Because of this tendency to become immune, the cow that has aborted and through proper treatment has been restored to health should be retained. She is more valuable in the infected herd than a new cow which in turn might contract the disease. Many a fine cow has been sacrificed because of the mistaken idea that abortion can be controlled by disposing of affected animals. Never sell a valuable breeding animal, whether cow or bull, because of abortion disease. Unprofitable and hopelessly sterile cows should be weeded out on general principles, for they require attention that should be bestowed upon the good ones. But these cows should go to slaughter.

The vigorous heifer calves which reach maturity in spite of the disease are naturally from the more resistant

cows and they seem to inherit this tolerance, consequently they are less apt to abort in turn than cows from other sources. Raise them. They will aid in building up a herd immunity.

Treating Affected Animals

Vaccnation is along the approved lines of treatment in the handling of contagious abortion, but up to the present it has not established a satisfactory immunity. Carbolic acid administered in various ways, such as in the feed, wth salt, or injected under the skin, has probably acquired a greater reputation as a drug valuable for the control of contagious abortion than any other agent. The chief reason for this is because, as a rule, no treatment is attempted until the disease has reached its maximum, and in the natural course of events there is a great reduction in the slinking of calves the following year. It is during the height of the disease that the use of carbolic acid is instituted, and it receives credit for the natural decrease in the number of aborted calves. The fact that abortion has increased, in spite of the use of carbolic acid for many years, is an indication that it is not a specfic, and is of very questionable value.

Methylene blue is claimed to have antiseptic properties, and to have specific action in contagious abortion. It was extensively used a few years ago for this purpose and inquiries are still received regarding it. Its value as an agent for the cure or control of contagious abortion was greatly overestimated, and it has almost fallen into disuse for that purpose.

Acidity of Soils and How to Apply Lime Profitably and Effectively to Them

By Prof. E. Truog, Wisconsin College of Agriculture

There are few subjects in agriculture about which there has been as much confusion as about soil acidity. There is, however, nothing mpsterious about soil acidity, and it is not difficult to get a clear understanding of it. Soil acidity is due to an excess of active acids over bases in the soil.

Soils and in fact most of the materials and substances in nature, consist of a combination of acids and bases. Chemists have found that all known material can be broken up into simple substances called elements. Some materials are composed of two elements and some of many more. After analyzing all known materials they have found that there are about 80 elements out of which by various combinations all known materials are formed.

Some elements form acids when they combine and the others form bases. Common vinegar and muriatic acid are typical acids. Lime is a base. Soaps are usually alkaline due to the excess of bases they contain. A peculiar thing about an acid and a base is that they alwaps combine with each other when they come together and form a neutral compound called salt. Common table salt is formed when hydrochloric acid (muriatic acid) and the base sodium hydroxide are mixed together. If more acid is added than there is base with which to combine then there is some acid left over and the mixture is acid from the excess of acid. If there is an excess of base, then the mixture is basic.

As was stated, the particles of soil consist of a combination of acids and bases. The soil particles of upland soils are largely mineral salts. Now, when there is an excess of acids over bases the soil is acid. If there is great excess of bases the soil is alkaline. Soil acidity thus simply indicates an excess of active acids over bases in the soil and hence can be corrected or neutralized by adding a base like lime.

All soils where the annual rainfall is 25 inches or more tend to become acid, due to the more rapid leaching away of the bases than the acids. When water comes in contact with the soil, it dissolves the bases of the compounds that make up the soil to a much greater extent than the acid constituents. As a result from 200 to 500 pounds of bases, mostly lime, are leached out and washed away per acre annually on many farms in Canada, while the leaching of acids is comparatively very small. The more a soil is cultivated the greater the leaching and the more rapidly does it become acid. Many crops also take out much more bases than acids from the soil and help to produce an acid condition. The formation of acid soils is thus not at all strange or mysterious and it is entirely natural for soils to become acid after cultivation for a number of years. Sandy soils leach readily and are usually acid even in the virgin condition. Virgin clay and silt soils are sometimes also uitqe acid.

Some fields which are situated at the bases of slopes or in the bottoms of valleys receive lime in the drainage and seepage water from the higher land and hence do not become acid or do so only very slowly. The higher parts of a field usually become acid first.

So far, purposely, nothing has been said about organic acids that are formed when green crops or manure are ploughed under, or when dead vegetation of any kind accumulates. Many writers state that soil acidity is entirely due to organic acids formed in this way. In the case of upland soils our experiments have shown that the organic matter, and hence organic acids, may be removed and still the soils remain practically as acid as before, indicating that the acidity is due largely to mneral acids, formed by the removal of bases from the mineral salts as just explained. Some upland soils contain scarcely any organic matter and yet are extremely acid. It is to be clearly noted, however, that the acidity of acid peats and poorly drained soils is often due largely to organic acids. In well drained and aerated soils organic acids soon decompose and hence do not accumulate. Ploughing under heavy crops of green manure like rye may produce an acidity due to the formation of organic acids. This acidity is temporary and usually disappears in the course of a year.

Why is Soil Acidity Injurious?

It is often stated that soil acidity is injurious because it directly attacks and injures the plant roots and directly affects the bacteria in the nodules of legumes where nitrogen is fixed. Results of our recent experiments do not agree with this. We find that when soils become acid the supply of available lime and other bases in the soil becomes too low to meet the plant's own need for these. An acid condition is simply the positive indication that the supply of available lime is getting low.

It is to be clearly noted that even acid soils still contain lime that is bound up with the soil acids, but since there is an excess of soil acids, all of which try to hold on to the lime, it makes it extremely difficult for some plants to get sufficient lime unless more is added to the soil.

In the processes by which plants build up the different compounds of which they are composed, various acids are formed that must be neutralized, or else the plant sap becomes so strongly acid that the growth processes are interfered with or stopped. In order to neutralize these acids, the plant must get sufficient lime from the soil. If the growth of legumes is lowered or stopped by a lack of lime or any other cause, then nitrogen fixation in the nodules by the bacteria is also lowered or stopped. The nitrogen which is fixed is a by-product or waste material of the bacterio in the nodules and must be removed by the plant in order for the bacterial activity to continue and make possible the fixation of more nitrogen. The legume plant is not able to remove this nitrogen from the nodules unless other conditions are such that it can grow normally and thus have use for this nitrogen.

Plants like alfalfa and sugar beets require large amounts of lime and have comparatively weak feeding powers and hence are affected greatly when a soil becomes acid. It requires about 100 lbs. of lime carbonate to produce a ton of alfalfa. A ton of red clover requires about 75 lbs. Oats, rye, wheat, and corn require only about one-fifth as much lime as alfalfa.

Cabbage, lettuce, and most all garden crops require large amounts of lime. Gardens should always be limed if the soil is acid. It is thus very easy to understand why some crops like alfalfa, clover and sugar beets are affected by an acid soil much more than crops like oats and hay. The oat plant is low in lime and has very strong feeding powers. It grows much better on acid soils than barley which is higher in lime and has weaker feeding powers. A liberal supply of lime is necessary to make good barley soil.

A good supply of lime insures successful inoculation and nodule development of the legumes. It also makes the nitrogen, phosphorus and potassium of soils more available. It favors early maturity, hardiness, and freedom from disease injury. It helps to prevent lodging of grain. Lime improves the physical condition of both heavp clay soils and sands by making the clays more open and workable and the sands more compact. An abundance of lime prevents the accumulation of soluble toxic or poisonous substances in soils. Lime is really the great regulator of soil fertility.

There are only a few cases where an excess of lime may be detrimental. Potato scab and possibly a root disease of tobacco are favored by a large excess of lime. When the potato scab and root disease of tobacco are properly controlled, lime increases the production of both. Of the garden crops, the watermelon is the only important one that usually grows better on an acid soil. This may again be due to plant diseases which live in the soil and are favored by lime.

How Test for Soil Acidity and the Need for Lime?

Since soil acidity indicates and is due to a lack of lime, the test for soil acidity tells whether or not lime is needed. The litmus paper test has been used a great deal in the past for this testing. To make this test, blue litmus paper is placed in close contact with the moist soil and left there for five to ten minutes. If the paper turns red the soil is acid. The great trouble with the litmus paper test is that it does not tell how acid the soil is and hence how badly or how much lime is needed. When soils are only slightly acid the results are often confusing and unsatisfactory. The paper must be handled with great care and it fades when exposed to the light. Carbonic acid, which is always present in soils, and is beneficial rather than harmful may also affect the test.

In taking this sample select an average spot of a few square rods and take from this small area a little surface soil from five or six places so that they will make altogether a sample of about one-half cupful. If the field varies widely in fertility or topography, it is best to take several entirely separate samples from different parts of the field. If part of the field is high land and part low land, a separate sample should be taken from both places, and in no case should the soil from high land be mixed with soil from low land in making up a sample, as the results then will not mean anything. Samples from different fields should never be mixed.

Different parts of the same field, and especially the different fields on the same farm often vary greatly in acidity. Always test your soil before applying lime because some soils do not need liming. It is very profitable to put lime on acid soils, but a waste of time and money to put it on soils that are not acid.

PASTURE VS. SILAGE FOR THE DAIRY COW

Good pasture is generally acknowledged to be the ideal feed for the dairy cow. In a great many dairying districts it is very difficult to get good pasture throughout the entire summer season. Usually good returns are obtained by supplementing the pasture with concentrates, soiling crops, or other feeds. Of late years a number of dairymen are using silage as a supplement while others confine their cows in the barn and feed silage entirely. This latter practice has been in vogue for a few years at the Experimental aFrm, Agassiz, B. C. The chief criticism is that it seems an unnatural way of handling cattle, but it has nevertheless given good results. During the hot weather the cows are put in an exercising paddock at night and kept in a barn with screened windows during the heat of the day, while during cool weather the cows are alowed in the enclosure in the day time and stabled at night. By handling them in this manner little trouble is experienced from flies or excessive heat and the cows are handy at milking time.

The big factor in favor of feeding silage as compared to pasture is the fact that the former method allows of more intensive farming and consequently a great number of cows per acre may be obtained. It requires very bood grass to pasture one cow per acre for six months of the year, while a fourteen ton per acre crop of corn made into silage will feed two cows for six months. In other words, practically double the number of cows may be kept when silage is fed as when the cows are pastured.

From the standpoint of production, the pasture feeding gave the best result sin a fifty-day trial carried on last year comparing the two methods. Ten cows on pasture from May 8th to June 26th gave 12,860.9 pounds of milk, while ten cows fed silage gave only 10,848.2 pounds of milk in the same period. Figuring pasture at $2.00 per cow per month and silage at $5.00 per ton, with concentrates at market value, the milk cost 52 cents per 100 pounds more from the silage fed lot. The silage lot of cows were given daily exercise in a bare paddock and fed silage in the barn, while the pasture lot were on grass all the time except during milking hours. Each lot had the same grain ration. It must be remembered that this test was conducted in early summer before the flies became troublesome and while the pasture was excellent. Later in the season the pasture was dry and bare and the flies caaused great inconvenience to the cattle on pasture.

If good pasture is obtainable it is to be preferred to silage for feeding dairy cattle, but if good silage is on hand it may be used with excellent results to suplement the pasture at such times as the pasture may prove unsatisfactory.

W. H. HICKS,
Supt. Experimental Farm, Agassiz, B.C.

THE MARITIME FARMER

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DATES OF ISSUE.

September (Exhibition Reports) -	9—30
October - - - - - -	14—28
November - - - - -	11—25
December (Xmas) - - - -	9—23

AUGUST 26, 1919

WHERE THE FARMER STANDS

The thing that country life needs most is to have its own leadership, its own self direction, and self dependence and downright faith in itself. The most important development so far as agriculture and farm life are concerned, is not the science of experiment stations, its appilcation by progressive farmers, the building up of great agricultural colleges, nor the discoveries and inventions that have changed the whole mode of life. Valuable as all these things are, they would be a sad failure if they were not giving the rural communities the men and women who understand the true relation of farm life to the national life better than outsiders can know it. There are in rural life today men and women of intelligence and fair-mindedness who have a right to do their own leading. They are capable of doing their own thinking and do it in a straight line. They realize that they belong to a democracy and not an autocracy that doles out pittances when only dire need is apparent. The growth of true democracy is seen in every assemblage of the rural people. Rightly constituted they are the reflections of the best judgment of the community as to what discussions and conferences are needed. Farmers are now realizing their responsibilities, and it is only when they accept responsibility collectively, that they can work constructively and have less occasion for regrets or protests later.

GIVE THE BOY A CHANCE

It has been said, and it is absolutely true, that not very much can be done with most adults, for the simple reason that their ideals are in the past. In view of this, therefore, the great hope is with country children, but, greatly to be regretted, too few parents appreciate the importance of the boy, or realize that he is the sole connecting link standing between them and the wonderful future.

A boy's place on the farm is a large one. There is no use denying that; one might as well debate on the value of daylight. Yet many farmers do not begin to appreciate this all important matter as they should, nor do they accord the boy his proper fitting in the general scheme of things. In this conection the late Theodore Roosevelt once fittingly said: "If you wish to do anything for a man, you must begin before he becomes a man. The only hope of success lies in beginning with the boy, so if we wish to have the best farmers in the land, and more of them, we must train the boys in scientific agriculture."

The study of any subject not only begets knowledge, but also interest in it. If a boy can be persuaded to study agriculture, his interest in it gradually increases until he becomes a scientific farmer for life. For this reason more time should be devoted to the study of agriculture in our rural schools.

THE FARMERS FORWARD MOVEMENT.

After years of unusual exertion, surrounded by unprecedented conditions, farmers of Canada have gathered, more than ever before, a definite idea of the profundity of their farm resources, and the astonishing results of their accomplishments. From the depth of this new experience there arises today a farmer with a new vision, a clearer understanding, and a more resolute determination to win for himself a moderate allowance of prosperity that will adequately measure his investment of brain and brawn in the tillage of the soil for the sustenance of mankind.

His experience is generating a desire for greater liberty and he is meantime estimating the handicaps which impede his progress toward that end. He no longer remains satisfied with the lack of knowledge of the problems that affect his progress to successful issues. He is resolved to fit himself in every possible fashion for the larger accomplishments which he knows now he can attain and has demonstrated as possibilities.

Many of the barriers to the success of his business he recognizes as artificial, and is setting his face resolutely to the task of removing such obstacles that interfere between his unremitting toil and the fair reward he considers should attend it. In these respects the farmer is distinctly looking forward.

BETTER AGRICULTURAL TRAINING NECESSARY

If agriculture is to develop, it can only be done through the highest planes of science, for it is only by that method that the greatest knowledge can be evolved, and diffused among students fitted to apply it in practice. If those who engage in other industries require a university training to fully equip them to keep up with the progress of the times, then surely those that are engaged in agriculture, the greatest of all industries, deserve to get the same training. It is vital then that agricultural colleges should have a high status both for teachers and students, and like technical colleges should be kept in closest relationship to the universities that is attainable. It is a country's duty to give every facility to raise the whole agricultural community to a high intellectual level, from the farm worker to the farmer. It is on knowledge that the future of the tillers of land in this country really depends more than on anything else. That knowledge will do little good, unless it is not only sufficiently widespread, but also adequate in its quality.

Universities in the future must enlarge the scope of their work, and have special courses for agriculture, business organization, banking, salesmanship, advertising and technical training. A nimal and plant life as itmere knowledge of the a affects the success of farm husbandry is not all that is necessary in farm business. It is vital to the interest of the farmer to have the knowledge of how to conduct the business necessary to reaping the full reward of his labors.

THE CALL OF THE COLLEGE

This is the time of year when the college calendar is really popular. All our higher institutions of learning are bidding for the young manhood and womanhood of the country. This is good and wholesome. We have never yet heard of anybody who regretted his college course. We have heard some folk say that it doesn't pay to go to college because many people who have gone are not making as much money as some people who never went. Needless to say, this kind of argument comes from individuals who were denied the privileges of higher education.

On another page will be found the announcement of the College of Agriculture, Truro. This advertisement should have particular interest for Maritime Province folk, and especially the farming population of that area. The College at Truro is the only one of its kind in the East, and it has a most honorable and enviable record.

Prior to the war, in the year 1913-14, there were in attendance 114 in the regular classes, and 350 at the Short Course. Although this is by no means the capacity of the college and falls far short of the ultimate goal in enrollment, yet it is relatively high in comparison with other institutions of the same nature. Practically all the students in the regular course and from 80% to 90% of those in the Short Course, with the honorable exception of those who fell in the great conflict, are now farming, and the great majority in eastern Canada. Every one who is conversant with rural conditions knows what an impetus these men have given to the higher type of agriculture in the Maritime Provinces.

During the war, as at all higher educational institutions, the attendance was greatly reduced. But now that the war is over the College is planning to prosecute its work more vigorously than ever. The time is most opportune for young farmers to carefully consider their duty to themselves, to those who will in time be dependent upon them, and to the country which has given them so rich a heritage. One or two winters spent at the college is the very best kind of investment for the future. Apart from the knowledge of farming methods, and of the scientific principles which underlie these, they would have opportunity to improve themselves as citizens of the country, and to realize the highest form of patriotism.

Although the College of Agriculture is located in the province of Nova Scotia, its classes are alike free to students from the three Maritime Provinces. The term begins on the 4th of November, after the main activities of farming are over, and closes in April, in good time for the spring work. We would strongly urge those for whom there is any possibility of attendance to write at once for information. It will do no harm to write even if there seems to be no possibility of attendance.

* * *

The small, well pruned and well cared for orchard is worth more to the farm than the large one uncared for. Cut out the trees that are not wanted.

* * *

Progressive communities draw men who are looking for the best land with proper surroundings supplied by development.

Gleanings From Nova Scotia Agricultural College

THE SILO

A striking testimony to the value of the Oats, Peas and Vetches mixtures (O. P. V.), which has been so strongly recommended by Professor Trueman, of the Agricultural College, came to our attention recently A dairy farmer living some 40 miles from Halifax erected a silo two years ago, filled it with the O. P. V. mixture last fall. He had abundance of feed for his dairy cows, and, in addition, in a year when hay was scarce, sold over $700 worth of hay. This he holds, and rightly so, to be clear profit from the silo, without which he would have been compelled to buy hay instead of selling it, or to reduce his stock.

Quite a number of silos have gone up during the past two years for ensiling this mixture. The experience of this farmer indicates that there should be many more. Two or three facts may be simply indicated here with regard to this kind of ensilage. The O. P. V. mixture is hardy and well adapted to the Maritime variety of climate. It is capable of a yield of 12 tons to the acre (this was attained on the College farm last year) and is very high in food qualities. A recent rough estimate of the cost of a silo runs thus,—

	tons	cows	costs
10 by 20	28	7	$225
10 by 22	31	8	$240

Any farmer who is interested and wishes further information on the matter should write to Professor Trueman at tht Agriculeural College, Truro.

A SPRAYING CALENDAR

Those who have been watching the experiments conducted by Professor Brittain of the Provincial Dept. and Mr. Saunders of the Federal Department, have been much impressed by the excellent results following the use of a spraying calendar issued by these men last spring. It indicates the composition of the sprays used and the proper time to use them in fighting the various foes of the orchard.

Trees sprayed according to directions are very free from scab and vermin, and the fruit free from russeting. It is also evident that the trees so sprayed have suffered no ill effects by burning. In short, this publication is a decided step in advance and deserves a wide circulation. By the way it is worth mentioning that the poisons prescribed effect a considerable saving over those formerly in general use.

PASTURE IMPROVEMENT

The pasture lands of Nova Scotia were never in better condition than during the present year. It has been an unusually favorable season for vegetation of every kind. For this reason it may seem less necessary to speak of the improvement of pastures. But those who should know best, and doubtless do, say that the time to improve pastures is not when they are thin and burned with drouth but when they are at their very best. The Farm Superintendent at the Agricultural College has for several years made it a practice to apply a moderate quantity of fertilizer to fairly good pasture land, and by this practice has so improved it that some 60 acres of grazing land is this year carrying 37 head of live stock. They are in splendid condition and are not able to keep it eaten down. fThe practice at the College is to apply fertilizer in the fall, going over the pasture lands about once in three years with, say, 500 lbs. per acre of basic slag, wood ashes, or some other brand of equally good fertilizer. Experiments have shown that a top-dressing in the fall will not give good results on sparse pastures. However, the experience of the College is that it pays very decidedly—in fact few operations pay so well, to treat pasture lands in this fashion.

It is important to remember tnat in these years of soaring prices the cost of producing beef, mutton, milk, etc., on pasture has not materially increased. This will still be true when it has become the general practice to apply either artificial fertilizer or even the much wanted barnyard manure to pastures. A smaller area will carry the herd, and the yield will be increased with the richer grazinig. In any case the added expense does not campare for a moment with the increased cost of feeds used in the stable.

One does not need to argue at length that it is good business these years for the farmer to concentrate as far as possible on the summer season for heavy milk and meat production. The cold storage movement now underway will obviate the old difficulty of an overstocked market. The two important steps to be taken to meet the mill feed situation are, without doubt, to grow and to store silage feeds and to secure the best possible pasturage.

An expert who has recently looked over the agricultural situation in Nova Scotia states that the most practical thinfi which can be done at the present time by N. S. farmers in order to secure a larger revenue at the minimum of outlay is to improve their pastures. This expert pointed to the fact that good grazing is the secret of the high class live stock of the Old Country. There, farmers top-dress their pastures with fertilizer and manure as carefully as they do their arable lands. An illuminating commentary on the whole question appears in Professor Trueman's article in the Report of the Secretary for Agriculture, issue of 1919.

SIDE LINES IN FARMING

It is a well known fact that many men who are now among the blessed ranks of the independent made their first start towards success through some sideline, which, in itself was relatively unimportant. This furnished without much labor or expense the extra cash return which meant the difference between debt and forehandedness. Among these the most common have been the poultry flock, the strawberry patch and the early market vegetable plot. Here and there we hear of one who gives first place to the honey bee. The writer heard recently of a leading orchardist in the western counties who states that this busy little creature gave him his first lift.

The present is an unusually favorable season for honey production. One gentleman in the heart of one of our towns had at the begining of August taken $120.00 worth of honey from five hives. Besides this his assets have been increased by two new colonies, worth $25.00 or $30.00. Another man in the same town who just begun last spring with two hives has secured $30.00 worth and expects as much more before the season closes. The wintering of bees is always attended with an element of uncertainty, but apart from some degreee of knowledge of their habits and a bit of watchfulness they require but little labor.

ANOTHER HUN BEATEN

Among the most exasperating pests that afflict the market gardener and vegetable grower generally is the cabbage maggot. It will be good news to these to hear that Professor Brittain of the Entomological division, Truro, and his assistants, have been most successful in their work for the elimination of this pest. They have tried out a number of methods of dealing with this foe, all of which have been more or less successful, but there are two comparatively easy methods of treatment which they recommend in place of the older tarpaper disc treatment.

1. The application of a solution containing corrosive sublimate, in the proportion of one part of this poison to one thousand of water, 1 to 1000, or, one tablet of the usual commercial size to a pint of water. This liquid is poured about the roots of the plant in the early stages of its growth. Two applications during the season gave perfect results at the College.

2. The application of a creosote preparation. In this treatment the creosote is mixed in the proportion of one to one hundred, 1 to 100, with clay, and the mixture, ground to a fine powder, is thickly sprinkled in a dry condition on the surface of the ground around the plant. It is necessary to renew the application after each cultivation.

Both these methods have been thoroughly tried out, and both have given perfect results on the experimental plots.

ANOTHER LEAN YEAR IN MILL FEEDS

Nova Scotia as a whole, and particularly her farmers have reason for profound thankfulness for an unusually bountiful crop of hay, and the promise of a heavy yield in grain and roots as well. It wil be necessary to bear in mind, however, that a arge portion of Canada has suffered severely from drouth. The Secretary for Agriculture, who has recently returned form a trip through parts of Ontario, reports that there will be little if any grain available for shipment either from that Province or from large areas further west. Consequently the indications point to a mill feed situation at least as difficult as the past two years, with equal scarcity and high prices. Substitute feeds which were available in considerable quantities last year from the United States are also being swept up by the starving markets of Europe.

Every possible measure should be taken in view of these facts to conserve our resources in feeds. Orders should be placed at the earliest possible date with the feed merchants for the winter's supply. Whatever opportunity there is to obtain such supply will fall to the early purchaser. One leading authority in Montreal who is familiar with feed and feed conditions when asked by an eastern representative when it is best to buy these commodities, replied: "Buy whenever you get a chance to buy, for you may not get another chance."

TIMOTHY AND CLOVER SEEDS

Many farmers learned through disappointing experience last Spring that it is unwse to delay placng orders for Tmothy and Clover seeds. Those who were late either had to go without or had to pay extremely high prices. Reports of the seed situation indicate a recurrence of the shortage in both these commodities. As a mere matter of routine it is always good business to place a necessary order early, especially in these days of bare markets. The late duplicate order is subject to extra shipping charges, liable to be delayed beyond the period of usefulness, and is almost certain to find prices advanced. Those who have inside knowledge of the seed trade in these two lines particularly advise the placing of orders for next season's Timothy and clover seeds even at the present time.

ONTARIO HOLSTEINS FOR NOVA SCOTIA

Dickie Bros., of Truro, N. S., both of whom have lately returned from overseas, are taking over the farm of their father, Mr. Samuel Dickie, and increasing the herd of purebred Holsteins. It will be remembered that this herd includes the great cow, Miss La Honda, holder of the world's record for three days butter fat production in public dairy test.

Mr. Walter S. Dickie recently visited Ontario and selected a carload of females from herds in the Brant distrct. From Oak Park Stock Farm, Paris, was secured the beautiful two year old heifer, Lady Hengerveld of Oak Park, a daughter of the grand champion bull, Lakeview Dutchland Hengervald 2nd, and herself a show heifer of high class. From Mr. F. S. Passmore's herd at Brantford Mr. Dickie selected a choice cow with a good record in Patsy B. Mercena, also a two year old daughter of this cow, Patsy B. Hartog. This is another show heifer, sired by a brother of the 33-lb. cow, Jenny Bonerges Ormsby. The 1600-lb. cow, Pauline Hartog, of beautiful lines and with an excellent record came from the herd of Wellington Sager & Son, St. George, along with the three year old, Julia Netherland Baroness, one of the choicest things in the Plant dispersion sale last spring. Three head were added from the herd of Mr. G. W. Clemons, St. George, Evergreen March 5th and Maple Hill Edith, two excellent daughters of Prince Pieterje March, also the heifer calf from the later cow. From the herd of Mr. G. B. Robb, Branchton, one cow and five two year old heifers were selected. The cow looks like a winner in the show ring and is a daughter of Summer Hill Ormsby, a $1500 son of the five times 30-lb. cow, Jenny Bonerges Ormsby. The five heifers were an excellent lot, all heavy in calf and showing good indications of production. They were all sired by Maple Hill Danforth, son of Choicest Canary and Evergreen March 2nd, while all their dams were got by Summer Hill Ormsby.

This was a very typey lot of cattle, and, as they arrived in Truro in good shape, should prove a notable addition to the Dickie herd. Messrs. Dickie have been using high class bulls for years, including a son of Madam Pauline Canary 31.76 pounds, and a son of Wadmantje Canary 33.00 pounds and 781.25 pounds in a year at four years.

A bull calf from Miss La Honda and sired by Prince Colanthuc Canary A., the son of Madam Pauline Canary and Prince Colanthus Abbekerk, is one of the stelar attraction in the Nova Scoti aherd, and breeders who are seeking type eand production combined should have a look at this young fellow.

EARLY MOLTERS ARE SLACKERS

A hen which selects a new coat of plumage ebefore October 1st is unpatriotis and a slacker. She should be condemned and executed. The early molter is a loafer, while the later molter is a heavy layer. Hens rarely molt and lay at the same time and an early molter has gone on a striike before eshe should. The poultry man will do well to rid his flock of this kind, says H. L. Kempster, of the University of Missouri College of Agriculture. Many people have the idea that an early molter will be a layer next winter. Studies at the Missouri Experiment Station indicate this is the exception rather than the rule. A late molting hen will lay just as many winter eggs, if not more than the early molter; so the poultry man will make no mistake in selling the early molting hen.

HORTICULTURE.

HOW TO KEEP UNDER CONTROL MANY OF THE INSECT PESTS THAT INFEST GARDEN CROPS

Successful gardening depends to a great extent on the ability of the gardener to keep under control the many insect pests which infest garden crops.

To begin with, it is well for the gardener to know that two kinds of insect pests are recognized. One kind sucks the juices from the plants, and the other kind eats the leaves and stems. It is necessary that the gardener know the complete life history of every insect that inhabits his garden, but it is essential that he know their vulenrable points and the methods to use against them.

Some methods are largely preventive while others are curative. To be effective, a proper remedy must be applied at the proper time. As a rule, insects do the greatest amount of damage during their larval stage.

Tiny as the aphids or plant lice are, they are for the worst enemy of the gardener. Not because they consume a greater quantity of food stuff than the leaf eating insects, for that is not the case, but because they feed on the under sides of the leaves and, therefore, destroy much vegetation before their presence is known. And how they multiply! Only half a dozen in the garden today will mean thousands in the course of two or three weeks. When the leaves of a plant curl up or turn yellow, you may be almost positive that aphids have taken possession. Aphids generally do the most damage to crops that are grown on poor soil, crops that are late planted, or crops that have been poorly cultivated. On strong, vigorous crops these insects do not gain a firm hold, but they will practicaly destroy an inferior crop.

One sort of aphids known as thrips cause much damage to onion crops. The leaves are the object of their attack. When attacked, the leaves first assume a dull gray or dirty appearance and within a ashort time, turn brown and die. Kerosene made into an emulsion is one of the most effective remedies. A standard solution of Bordeaux mixture is also recommended. This mixture should be composed of water four gallons, fresh lime one-half pound, copper sulphate one-fourth pound. Any quantity may be prepared by using the ingredients in the same proportion.

The cucumber is also the victim of an aphid which does much harm in a comparatively short time. The cucumber being a very tender plant, it will not endure the severe methods employed for destroying insects on more hardy plants. An excellent remedy is to spray the plants with a ammoniacal carbonate of copper solution. This is made by dissolving one ounce of carbonate of copper in one-half pint of strong ammonia (26 per cent.) This, of course, is a stock solution and before using should be diluted with 9 galons of water. White or whaleoil soap made into an emulsion will, under ordinary conditions, answer the purpose admirably.

As stated before, insects that eat the leaves of plants must be poisoned by introducing poison into their food. Paris green was, for years, the usual poison used for this purpose but of late years, arsenate of lead has replaced it to a great extent. The drawback to using Paris green is that it is washed off by the first rain, while the arsenate of lead will adhere to the plants for weeks. Arsenate of lead can be purchased in packages just as Paris green is purchased and the mixture generally used is six ounces of arsenate of lead to five gallons of water. Arsenate of lead is harmful to stock and must be used with caution.

Hellebore is a mild poison and although not so sure as the arsenate of lead, it will answer the purpose very well and with little or no danger to stock, as it soon loses its virulent qualities aafter exposure to the air. It may be used as a spray, one ounce to two gallons of water, or mixed with a little flour and dusted on the leaves when they are wet with dew. Hellebore is especially adapted for use against the voracious currant worms. This pest begins its work early in the spring and starting at the bottom of the plant eats upward, doing a large amount of damage before he is discovered. A spray of hellebore early in the spring will do much toward saving your currant crop from this pest. A second brood, some two weeks later, should be watched for. If you kill these you will have no more trouble.

Grasshopers do much damage to garden crops although they are noticed but little by the gardener. It is a great lover of celery during the early part of the season and many celery crops have been almost ruined by this "king of jumpers." A poison composed of wheat bran to which there has been added molasses and water and enough Paris green to give the mixture a slight greenish color, will do the work.

The celery leaf tier is another enemy of the celery plant. It not only destroys the leaves by eating them, but spins a web and ties the leaves together. Hand picking is the most effective means of controlling this insect. The most harmful of all celery insects though, is the celery caterpilar and the zebra caterpillar is, though much smaller, a good second. Both caterpillars can be controlled by hand picking.

Cutworms are the hidden enemy of the gardener and are, indeed, most vexatious pests. They hibernate during the early spring. They feed at night and prefer fresh food, for this reason many of them may be poisoned before time of setting out plants by spraying a plot of grass with a mixture of one eounce of Paris green to five egallons of water, mowing the grass and dropping it in handfuls of five or six yards. Many of the worms are attracted to the grass and poisoned. The poisoned grass should be distributed on the ground in the evening. Another preventive measure against the cut worm which provides good results is to provide a little paper colar for each plant, when setting them out. These collars are merely strips of stiff paper fastened at the ends with toothpicks. They should extend an inch or two below ground and two or three inches above. If these preventive measures are followed you should have little or no trouble with cutworms. However, if you have allowed them to get a start in your garden you may save your plants by placing a good vermine on the ground around the plants. This should end the career of both cut-worms and grubs.

Don't give up in despair when the cabbage worm makes its appearance. Spray your cabbage plants with a mixture of one ounce of white hellebore to three gallons of water and watch what happens to Mr. Cabbage Worm. Some degree of success has been attained in controlling the cabbage worm by the use of sot or salt.

The striped cucumber beetle and the cucumber patch has a hard time waxing fat at the same time, and if the cucumber beetle is not taken in hand at the proper time, there will be nothing in the patch but the beetle. There is no specific remedy for this insect, but direct applications of poison will destroy the beetles when they occur in moderate numbers. Mix arsenate of lead with finely sifted plaster or similar diluent in the proportions of one to seventy-five by weight, and dust over the young plants early in the morning when the dew is on. Topical applications are inefficient when the insects are most abundant, therefore, recourse must be had to other measures, a good repellant being the most successful. Land plaster or gypsum saturated with kerosene or turpentine is an excellent repellant. Tobacco dust sprinkled on the hills, particularly when the soil is moist, is also an excellent repellant.

Besides the insect thrips, mentioned elsewhere, the onion is attacked by the onion maggot. This pest works at the roots of the young plants and is very destructive. There is no entirely satisfactory means of combating it, but one of the best remedies is to apply sand which has been previously soaked in kerosene to the base of each plant. A cupful of kerosene to a bucket of sand will make the correct mixture and a handful of sand is sufficient to place at the base of each plant. This keeps away the flies that lay the eggs from which the maggots hatch. Saltpeter placed close to the plants, but not allowed to touch them, just before a rain, is also an excellent remedy.

Hand picking is the only sure way of ridding your tomato plant of the tomato worm. They are not often present in large numbers and any of the poison sprays will affect the growth of the plants.

Concerted action is what counts in dealing witih the insect pests. So don't be discouraged but go right ahead with the garden.—G. A. R.

FUNGUS DISEASES EASY TO CONTROL

Most diseases of plants are caused by low forms of vegetable life known as fungi which live upon and within the tissues of the higher plants. They are thus parasites which obtain their nourishment by breaking down the cells of the plant on which they exist. The main difference, other than size, between the fungi and the higher plants is the lack of the green coloring matter so abundant in the higher order of vegetation. The methods of development in the fungi are very similar to that of the higher plants, but their microscopis size renders their study more difficult. The parasitic fungi spenr the winter mostly within the living and dead vegetable tissues and during the first

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warm days of spring send out small spores which correspond to the seeds of the higher plants. These spores are disseminated by the wind and otherwise from plant to plant. With favorable conditions as to moisture. the spores send out small branches which penertatee into the living tissues of the higher orders of growth. Here new branches are formed in immense numbers which soon sap the vitality of the plant and cause it to become diseased. New spores are developed on the exterior of the plant from time to time, but more especially in damp warm weather, and thus a fungus disease may become widely disseminated in a avery short time.

By the application of a fungicide to a plant it is possible to destroy the spores which have found lodgment upon it and thus prevent the development of additional spores which would cause disease. Just as long as the tissues of plants are covered with a thin even coating of a fungicide, no fungi can develop upon them. Thus, if a fungicide is applied at regular intervals of about two weeks during the spring and early summer, a plant disease may be held entirely in check. Thus a fungicide is a preventive and its application should begin long before the disease has advanced far enough to manifest itself to any extent. The application of Bordeaux mixture is thus a good plant insurance. Applied to potatoes it causes the vines to remain green much longer than would otherwise be the case and this in turn causes the formation of larger tubers. It thus increases the yield of potatoes more than enough to pay for its application, even though potato disease may not be present.

Some fruits—the apple, grape, peach, and plum—are nearly always susceptible to fungous diseases and should be regularly sprayed with Bordeaux mixture every two or three weeks during the spring and early summer. This will do much towards insuring a good crop each year.

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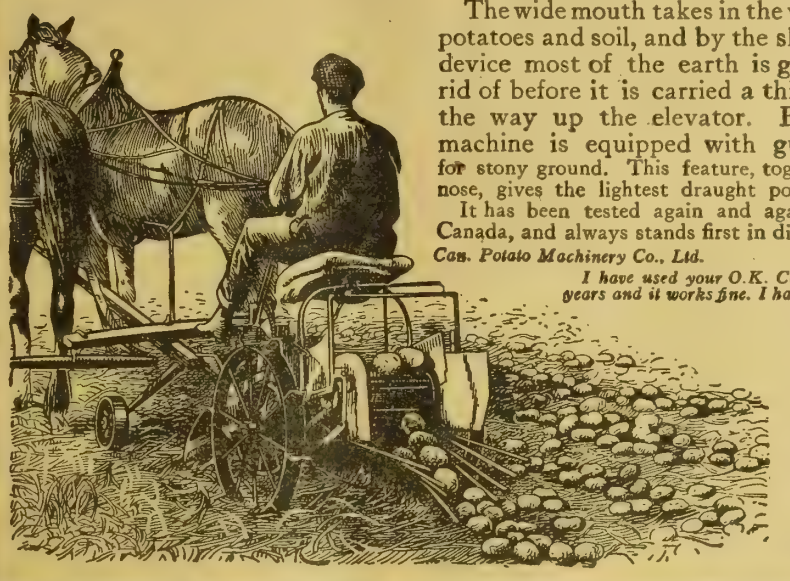

The wide mouth takes in the vines, potatoes and soil, and by the shaker device most of the earth is gotten rid of before it is carried a third of the way up the elevator. Every machine is equipped with guards for stony ground. This feature, together with the specially designed nose, gives the lightest draught possible in a potato digger.

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SMALL FRUITS FOR FARM GARDENS

While few families in cities and towns are without fresh strawberries, raspberries, gooseberries and currants during their season, many farmers' families have not a plentiful supply of these fruits although they can be so easily grown in the country. **Farmers who have made a practice of having a good fruit and vegetable garden would not be without one** and, notwithstanding the difficulty of getting help on the farms, the home garden is usually cared for, once the benefits of having one have been experienced. All the household is deeply interested in the garden and if the farmer will take half a day or a day to get some of the rough work done before the rush in the fields begins, the necessary care during the season will usually be given by some other member or members of the family. A beginning might be made this autumn.

The strawberry, being the first of the small fruits to ripen is, perhaps, appreciated more than any other. For the area of land occupied it gives the best returns. To obtain the best fruit, the ground should be rich and the plants must not be too much crowded. In the home garden it will be found well worth while to place runners as they develop so as to space the plants from five to six inches apart each way and then keep the surplus runners cut out. A fruiting row about two feet wide is desirable unless there is only one row in the garden when it may be left wider. Varieties suitable for the home garden in Eastern Canada are Senator Dunlap, Parsons Beauty, Bubach and Wm. Belt. In the warmer parts of British Columbia, Marshall, Royal Sovereign and Paxton are three which are especially good for home use. A well cared for strawberry row in a garden should give a pound of fruit for every lineal foot of row. It will be found best not to take more than two crops off the same row and only one crop would be even better.

The raspberry is the next most important small fruit. A single row across part or one end of the garden or along one side may be found the most convenient place. The plants may be either kept as single plants or in hills five feet apart each way and about six canes left to a hill, or in rows, the original plants being three feet apart in the rows and kept in hills or left to become a continuous row, and if more than one row is planted there should be six feet between the rows. The canes should be kept well thinned out if grown in a row and not left closer than six inches. If very close the canes will be too small to produce the best crop. In plantations already established it wil be found to be desirable to cut out the fruiting canes as soon as possible after the fruit has been picked and remove the weak canes of the current season's growth so that the strong canes will develop well. The purple, non-sucking varieties of raspberries, such as Columbian and Shaffer, as propogated by covering with soil the long, slender tips of the new canes, in August.

These tips will root and the rooted plants are cut away from the cane late in the autumn. The Herbert is the hardiest and one of the best varieties for home use, but Cuthbert is very good also and is particularly good for preserving, as it is firmer than Herbert, but it is not so hardy. Columbian is the best purple raspbery. Thirty-six lineal feet of Herbert raspberry produced fifty pounds twelve ounces of fruit in one season at Ottawa, but if half of this amount were gathered in the average garden from this area, takinig one year with another, or about two pounds from each plant set out, there would be more than twenty-five pounds of fruit each year in from ten to fourteen pickings. Raspberries may be planted quite successfully either in the autumn or spring.

Red currant jelly and black currant jam are missing from too many farmer's tables, while with a few currant bushes in ia home garden there could b ean abundant supply. The highest yield obtained at Ottawa from six bushes of red currants in one season was seventy-nine pounds, but half of this amount would be a good average yield. Curant bushes should be about six by five feet apart, and they can be planted successfully either in the autumn or spring. There is a marked difference in the hardiness of red currants. Some of the hardiest are Red Dutch, Raby castle, Long Bunch Holland and Red Grape, but these are not so large in fruit as are some not quite so hardy, such as Red Grape, Cross, Perfection and Pomona. The largest-fruiting varieties such as Fay Prolific, Cherry and Comet are only suited for the warmer parts of Cnaada. Among black currants the Boskoop Giant has very large fruit and is of good quality, but heavier bearers with good-sized fruits are Magnus and Climax.

Gooseberries are very productive, yielding about as much as red currants, and a very few bushes will supply the family needs. One of the most productive at Ottawa is a new variety originated there called Mabel, six bushes of which yielded three hundred and one pounds in five years. Gooseberry bushes should be planted about the same distance apart as currants though they may be a foot closer in the rows. Gooseberries can be planted successfully either in the autumn or spring . Downing and Red Jacket or Jesselyn are two of the best varieties in Eastern Canada. On the prairies Houghton is the most reliable; and in British Columbia, Oregon Champion.

The second brood of the currant worm, which strips the leaves from the red currants and gooseberries, may not have gone when these notes appear. For the second brood, which usually apears when the fruit is ripening, white hellebore in the proportion of 1 ounce to 2 galons of water may be used without danger to human beings and it will kill the worms. If bushes are no tprotected from the currant worm they will be weakened, the succeeding crop will not be so good and the fruit may be scalded by the sun. All the small fruits mentioned require abundance eof manure if they are to do their best.—W. T. Macoun, Dominion Horticulturist.

HOW TO DESTROY APHIS OR PLANT LICE

What is the simplest method of exterminating the little green bugs or lice on plants, especially house plants? Where plants are small in seed bed and can be tightly covered can formaldehyde be used?

Ans.—Tobacco water or tobacco extract, diluted in accordance with directions, controls green fly or aphis. This is the florist's remedy. Kerosene emulsion, tobacco fumigation, dry snuff or Persian insect powder are other remedies. Formaldehyde is not used for this purpose. The common decoction of tobacco is prepared by boiling stems or dust thoroughly; then strain and dilnte until the decoction contains two gallons of water to one pound tobacco. All seedsmen sell commercial tobacco extracts.

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LIVE STOCK.

THE FOUNDATION OF THE FLOCK

In the selection of sheep to commence sheep raising, the selection should be made from some of the improved breeds. They will, of course, cose more than the degenerate natives, but surely will be more profitable in the end, if not immediately. I advise those who intend to commence sheep raising to buy a few at first ,and only the best that are obtainable, though the price be threefold the price of ordinary sheep. An intelligent breeder will seldom allow you to pick his flock, but there are breeders who from increasing age, failing health, or some other cause, are quitting the business, and have clearing out sales, where the buyer can get the best by paying a good price. Where the sales are by auction, you can get your pick by outbidding your contestants.

The reason why the improved breeds are best is because they have obtained the ability of putting on more flesh, and making a faster growth from the same amount of food than the unimproved. The unimproved sheep (like Pharoah's lean kine) can devour everything in their way, anad "still be as ill-favored as at the beginning."

Having obtained some fine sheep for the foundation of his flock, the shepherd must not think his work is done, and that he can lie in bed in the morning and take his ease. The same painstaking that brought the sheep to their high state of excellence must be continued in order to keep the flock up to the present high standard.

In choosing sheep for the foundation of the flock, the quality and weight of the fleece should of course be regarded; but aside from this, the properties most desirable are size, early maturity, constitutional hardiness, disposition to fatten easily, and lightness of offal. In regard to size, it is a disputed point whether the largest breeds, like the Lincolns, do not consume more feed in proportion to their size than the smaller breeds. Some large men eat no more than men of ordinary size, and some eat more than others.

The result of an experiment made in England by Dr. Parry, as stated by himself, was as follows: "By breeding small sheep instead of large ones, on his place, he was enabled on the same area to increase the number of his sheep from 660 to 890, and increase his profits from $2250 to $3620."

One experiment is not enough to establish a fact, and the general opinion among breeders is that large animals are the most profitable. At all events, they sell the best. It has been found that the very heaviest sheep are not so well suited to elevated, precipitous mountain ranges.

The lungs of animals are of the utmost importance, as upon their size and soundness the health and the strength of the ainmal chiefly depend. The size and strength of the lungs (as indicated by the size anad breadth of the chest) is a great point to be regarded. The head should be small, as by this the birth of the lambs is facilitated. Not only this, but a big head on a sheep, hog or steer is not regarded with favor by the butcher, as it causes more loss by greatr weight of offal. The length of the neck should be in proportion to the height of the sheep, not only because it conforms to the law of symmetry and beauty, but so the sheep may obtain its feed from the ground with ease and comfort.

Most breeeers are agreed that the bones should be small in proportion to the weight of the flesh and wool. Extremes in breding for smallness of bones should be avoided. Bones may be too small to properly sustain the weight of the flesh and wool. My father had two fat hogs that broke their legs in the pen when trying to get up. Evidently they had been bred for smallness of bone a little too long.

For the foundation of the flock, the flockmaster should take pains to secure purebred ewes of the breed he desires to keep, and not more than three years old. They should be in fair condition when the ram is placed with them. Five months is the period of gestation, and to have lambs dropped about the first of February, the connection should take place about the first of September. It is less trouble to have lambs weaned in May, after the weather has become fine, but the early lamb weaned in February or March (sometimes called "hothouse lambs") are in great demand and are much more profitable than those weaned later.

Thomas Hale gives this direction for choosing a ram: "Let him be young, wholesome and well shaped, his wool clean and well grown, the skin underneath of the same color; let the body be large, his forehead broad, round and rising; his eyes be large, and of a cheerful aspect, his nostrils straight and short."

When about 15 months old, a sheep has two broad teeth in front; at 24 to 27 months the have four; at 36 to 39, six; at 50 to 57 months, eight; after the fifth year, a sheep is known as to age by a full mouth of 32 teeth in all—the same number as cows and steeers have. In a lower jaw there are eight incisors, or cutting teeth—the precise number existing in the mouths of mankind; but in mankind half are in the upper and half in the lower jaw, and teeth bite against teeth; whereas in sheep, the teeth in the lower jaw bite against a tough, fleshy pad or roof of the mouth.—J. W. Ingham.

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CONTROLLING ABORTION IN COWS

Are there any methods that can be adopted as precautionary measures in preventing or controlling abortion in cows? For the last few years I have had it to a considerable extent in my herd.—A. B.

Reply.—The proper disposal or handling of the body excretions is the most important thing in controlling abortion disease. A cow showing a discharge from the genital tract should always be isolated from the herd in a speecially arranged stall. All bedding should be removed from her stall and burned or buried after being covered with quicklime. The floor of the stall should be sprayed or sprinkled with a strong solution of an antiseptic or covered with lime.

The foetus and foetal membranes should be burned or buried and covered with quicklime. In case an animal aborts before she has been isolated from the remainder of the herd, the floor and gutter should be cleaned and disinfected, but the odor from most disinfectants are objectionable to the dairymen. The most reliable disinfectant, minus the odor, is copper sulphate. Six ounces to each gallon of water will make an efficient solution. It should be used with precaution in case iron stanchions are used as it wiill corrode iron. The quarantine stall, previously mentioned, should be cleaned from top to bottom, and thoroughly disinfected each time after the patient has been removed. However, the patient should be scrubbed with a one and one-half per cent, water solution of cresol or coal tar disinfectant just before leaving the stall. This will prevent the infection on the outside of the body from spreading to other cattle.

Aborting animals should not be bred until all discharge has ceased and they show signs of a normal oestrum. The bull should be irrigated before and after service with a one-half per cent, water solution of compound of cresol. The tuft of long hair from the opening of the sheath should be clipped, and then insert a soft rubber tube with a funnel attached to one end. The foreskin should be held with the hand, thus preventing the immediate escape of the fluid. The hair of the belly and inner sides of the thighs should be sponged with a 1 or 1½ per cent. water solution of the cresolis compound or a reliable antiseptic. Every precaution should be taken against using too strong an antiseptic for douching either the cow or bull. Bad results have followed their use.

To make a ½ per cent. water solution add 5 drams of antiseptisc to one gallon of water.

To make a ¾ per cent. water solution add 7½ drams of antiseptic to one gallon of water.

To make a one per cent. water solution add one ounce and 2 drams of anatiseptic to one gallon of water.

To make a 1½ per cent. water solution add 3 ounces and 1 dram of antiseptic to one gallon of water.

To insure accuracy, a graduated flask should be purchased and used for measuring the antiseptic.

PARASITES

Parasitic diseases are most common in low-lying marshy land, and they are, next to dogs, the cause of the greatest loss among sheep. Parasite are of two classes, external and internal. The external ones are lice, ticks and scabmite, and none of these should be in existence at all, as they can be stamped out by dipping. The carlessness of a few farmers in this matter is enough to keep the whole sheep industry in a continual war against external parasites. There are a number of commercial dips on the market and a number that can be home-made;; all are good when properly used. In coal tar dips it has been found much more effective and beneficial to the wool if soap is added. Lime and sulphur dips had a tendency to spoil the texture of the wool. The best time to dip is immediately after shearing, but dipping should be done every time it is necessary, either as a preventative or as a cure. If the fall dipping is done, a warm day should be chosen, or a warm place to herd them in till they are thoroughly dry.

The purchase of rams is one of the chief causes of spreading the diseases arising from worms. Certain dis-

tricts are badly affected and lung worm disease is imported by buying sheep from these districts; and once a pasture is affected, it is impossible to clear it from the pest. Lung worms show their first signs in the lambs, by their commencing to cough. It is not found in lambs up to six or seven months old, but reaches its height at nine months old. Farmers who go in for selling fat lambs should get them on the market before they are nine months old. Weaning time is the period at which lambs are most liable to be affected, and for a cure, the injection of turpentine into the windpipe is advocated.

The nodular worm confines its work to the small intestines, and the chief cause that gives rise to this form of parasitic disease is feeding on low, swampy land. Feeding of salt to sheep has a great effect in ridding them of parasites.

For stomach worms the best agent is the oil of turpentine, and half an ounce is about the average dose for a sheep. Ground blue stone has also proved its beneficial effects with stomach worms; a teaspoonful for every sheep, mixed with the feed, is the quantity sufficient to free affected animals of stomach worms.

Foot rot can largely be controlled by dipping, but for its prevention the hoofs of the flock should be examined and any overgrown or ingrowing hoof that collects dirt should be pared off. Restrictive measures should be adopted to prevent sheep affected with lip and leg ulceration from being taken from one place to another, as it is very contagious. Every sheep breeders' association should be acquainted with infected districts and no animals should be purchased from such a district.

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CATTLE BLOATING DANGEROUS

With the approach of the season at which bloating of cattle frequently occurs, the principal cause of the trouble and means by which it may be avoided will be of interest to our readers.

Many a cow has come to an untimely end because she became dissatisfied with the scanty feed to be gathered from the closely crop-fed pasture, broke down the fence that surrounded a field containing a more luxuriant growth, and stuffed herself with the luscious, stolen greens, until he lost all desire for even another mouthful.

Soon her troubles begin. Fermentation develops in the mass of corn or clover, and gas forms that fills the first stomach of the cow to its utmost capacity.

How Fermentation Causes Death

The danger to the animal from acute bloating is not that the distended stomach may rupture, for such an accident is almost unknown. The pressure of the gas-distended stomach, however, exerts a dangerous pressure upon the heart and lungs, with the result that animals dying from acute bloating usually die of strangulation through inability to breathe with their compressed lung tissue.

The stock owner should guard against the bloating of his cattle by every precaution at his command. Clover or other green vegetation, if eaten when wet by dew or rain, seem to be especially liable to ferment before leaving the first stomach of the animal that has fed upon them. Eating excessive amounts middlings or corn meal will also cause bloating. It also occurs in cattle as a result of becoming choked. The principal cause, however, is overheating succulent green forage, such as clover, or green corn or cabbage.

Change Feeed Gradually

To prevent bloating in cattle, the animals should be shifted, by easy stages, from dry or scanty feed to abundant and luxuriantly growing fodder. They may be allowed to feed from the good forage efor only three-quarters of an hour on the first day they are given access to such grazing. A full hour may be allowed on the second day, and by continued slow steps and gradually lengthened stay in the tempting feed, the danger of loss from bloating will be largely overcome.

But in case the first evidence of a too protracted stay in the heavy growth of forage should be that the owner notices one of his animals with sides distended, and perhaps even lifted above the level of the backbone, he must act quicky. Removal of the gas from the paunch will quickly bring relief. If a veterinarian is within reach he should be summoned at once. If no surgeon is available the owner should immediately attempt to bring relief to his animal.

Trocar and Method of Use

Many cattle owners keep a trocar and canula constantly on hand and thoroughly understand its use. The trocar is a sharp-pointed rod provided with a metallic sheath or canula which leaves the point of the trocar exposed. The spot to be selected for inserting the trocar is a point equally distant from the last rib, the hip bone, and the lateral bony projections from the spine in the region of the loins. Here a small cut about three-fourth of an inch long should be made through the skin with a small knife, and then the trocar witih canula attached may be pushed through the cut into the paunch. The trocar is then removed, allowing the gas to escape through the canula. The canula should be retained in place so long as any gas escapes through it. Sometimes several hours are necessary, and the canula should be firmly tied in place. An attendant should remain near the animal ,if possible, so long as the canula is in the paunch.

Medicines That Relieve Bloating

If the animal is not distressed and the bloating and swelling of the body is not great, or when the alarming conditions have been removed by the use o fthe trocar, it is best to resort to internal medicine to allay the formation of gas. Two ounces of aromatic spirits of ammonia in 2 quarts of cold water should be given every half hour, or half an ounce of chloride of lime dissolved in a pint of tepid water may be given every half hour until the pressure of the bloating has been removed. A dose of purgative medicine is usually beneficial after the bloating has disappeared. For this purpose 1 pound of Glauaber's salts will usually prove effective.

Care should be used in the administration of fluid medicines. Take time. Do not hold the cow's head too high. Keeping the aniimal's head raised so that her nose is slightly higher than the level of her face will allow her to swallow without interference.

CARE OF PIGS BEFORE WEANING

The fattest and cheapest gains by pigs are made before weaning time, so ordinarily it will pay to keep the small pig growing as rapidly as possible. The sow should, of course, get some good milk-producing feed, and she should be fed to her full capacity as soon as the pigs are old enough to take all the milk she will give. It will not pay to limit the feed at this time, according to L. A. Weaver of the Missouri University College of Agriculture, since the pigs make the most economical gains from feed fed through the sow. When the pigs are about a month old, they will be able to use more feed than that obtained from the sow even though the sow is properly fed and a good milker.

As soon as the pigs eat, which is usually at four or five weeks of age, they should be fed separately from their dam. They should have access to a small pen where the sow cannot go to receive their feed. Skimmilk fed in a shallow pan is very good for them. The pigs may also be taught to run into the creep for feed. As soon as they begin to eat well, a slop made of milk, some shorts, a little bran, and some linseed-oil meal or tankage, fed along with the chopped oats, will make a ration which, with proper exercise, will prevent thumps or scours.

A good ration for young pigs is made up of four parts by weight of ground oats and barley, four parts of shorts, one part of bran, and one part of tankage. As the pigs become older the grain may be gradually increased until the amount has been doubled.

In addition to proper feed, however, the pigs must have plenty of sunshine and exercise. These things cost little to supply and are absolutely necessary for best results.

LIVE STOCK FARMING

One of the advantages of live stock farming is that it furnishes employment throughout the entire year. With grain farming the chief demand for labor is during the rush periods of preparing the land, planting, cultivating and harvesting the crops. It is then that labor is highest priced and usually hardest to secure. When work can be guaranteed throughout the winter, it usually possible to secure help that is sufficient and reliable, and especially so if a good tenant house can be provided. A married man who is more or less settled makes the best sort of help for the farmer who desires a steady hand.

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HYDRATED LIME SOLUTION AN EFFECTIVE GERM DESTROYER FOR THE MILKING MACHINE

The milking machine, like any other piece of machinery, must be kept in good condition to do its best work. Just recently I talked with a man who was milking about 40 cows by machine. He said: "The first month I had the machine it worked fine, but it kept milking slower and slower, so I increased the speed and it seemed to help for a few days. Then it got to milking slow again. Now I have the speed of it twice as great as is recommended in the directons, and I mlk them out in a hurry." This is a big, strong man who believes in doing everything by might. No one can milk a cow by machine by determination and strength. I did not have an opportunity to find out what the trouble in this instance was, but I believe I could come near telling what might be the trouble, writes Prof. C. Larsen of the South Dakota College of Agriculture in Hoard's Dairyman.

Vacuum Should be Steady

This particular machine was not of the pipe-line type. The vacuum or suction was created in a small pump located on the stanchion frame in front of the cows. Probably the ring on the end of the plunger had become dry, stiff, and even worn. In some climates, dry and high altitudes, leather and rubber will dry out much quicker than in lower and more moist climate. In this condition it was not able to produce the sufficient and proper amount of suction.

Maybe the machine milked the easy cows too fast at first, and the excess of milk went up into the pumps. This would happen only with the easy milkers. The effect of it, however, would be equally bad if it happened every milking time with one or two cows in the herd. The leather or rubber rings on the plunger would become very soft, greasy, and loose of form. This would also cause a lack of vacuum.

Maybe he forgot to shut the pit cock in the end of the pump. This would release considerable of the vacuum. In faet, this draincock is there for drainage, and to be closed when hard milking cows are being milked, and to be opened when easy milking cows are to be milked. This latter prevents the milk from running over into the pump.

Leaky Teat Cups and Rubber Tubes

After the vacuum is generated and produced in exact amount, it must be made to apply on the cows in that force. If it has been determined from numerous experiments that 16 inches is the proper amount of vacuum for milking, then 16 inches should be made effective. To generate 16 inches and closely watch that the indicator stays on that mark during the milking time, and then allow 3 or 4 inches of this suction to get away through leaks, will necessarily make any machine do slow milking or improper milking.

Most of the machines have special rubber rings at the top of the teat cups. These in time will get out of shape and become ineffective. These rings are inexpensive and should be replaced when there is need for it.

Some of the teat cups have an inner sleeve or a complete rubber wall separating the inner part of the teat cup into two complete compartments. At times these rubbers spring a leak. At times these leaks are very small. When the rubber is not stretched, these leaks can scarcely be noticed. They are similar to a puncture in an automobile tubing, difficult to find.

Such leaks may interfere with rapidity of milking and with some machines they may interfere with the proper balance between the two sides of the rubber wall.

The rubber tubing leading from the vacuum pipes to the milking pail or machine may also leak. Likewise the rubber tubes leading from the pail to the cow may become leaky. These latter tubes are more likely to be at fault than is the one leading from the vacuum pipe to the pail. The tubes leading from the pail to the cow are not so heavy. They are taken apart from the rest of the machine each day. They are heated and washed twice every day. This, in time, will cause any rubber to weaken. The tube running from the vacuum pipe to the pail is made of heavier material. It does not come in contact with the milk except when the pail is milked too full. It is not subjected to so severe cleaning methods as are the rubber tubes coming in direct contact with the milk.

The Pulsator Should be Watched

It is not an uncommon thing to have a pulsator stop or work with irregularity. The most common cause of this is thick lubricating oil. In the winter and in a cold barn even thin oil will stiffen enough to interfere with the proper working of the pulsator.

After a time the pulsator will "gum up." It should then be taken apart and the hard, accumulated grease should be scraped off and all parts cleaned with kerosene.

The pulsator has minute port holes. These are very small and may easily clog. These, together with all the parts of the pulsator, should be kept clean and in good working condition.

The pulsator is one of the vital operative parts of the machine. It is finely adjusted, and it should be treated accordingly.

The solution is made up to about two per cent. strength. About two pounds of hydrated lime are used for each one hundred pounds of water, and stirred.

The cleaned milking machine parts, teat cups and rubber tubing are kept in this lime solution between usages. The pails are cleaned and handled exactly as are any of the other milk pails and cans.

The above method and disinfectant are not the only ways in which the machines can be kept in a good sanitary condition, but it is a good way. Anyone who already is using some other disinfectant and who is already having a handy an dsuccessful way of keeping the machine sanitary had probably better not change.

Undoubtedly some will say this is a lot of work to go through with twice a day, but if prepared for it the task is easy. It can be quickly done.

For the production of certified milk it is necessary to thus take the machine apart and clean thoroughly after each milking.

In order to keep the bacterial count down below 10,000 per c. c. it is also necessary to steam or scald the pails just previous to milking. Otherwise the bacterial count from the milk of the first few cows milked will run high.

For producing good commercial milk the cleaning in two sets of wash water with brushes is necessary only each morning, and not twice each day as described above for the production of certified milk. I have found that in the evening the men are naturally in a hurry. They want to finish the chores as soon as possible. On this account each morning is selected rather than evening.

When this method of cleaning is practiced it is doubly important that the milking machine be well rinsed each evening immediately after milking and before any of the milk has a chance to dry on. Two sets of rinse water should be used. One to remove the excess of milk and then one pail of clean water for final rinsing by attaching the machine to the vacuum pipe.

Keep Vacuum Pipes Sanitary

One would naturally think that the pipes containing the vacuum would not need any attention. But they do. When the machines were first installed in the college dairy barn, this point was overlooked and the quality of milk became bad. The trouble was finally located in the vacuum pipes.

The frequency with which the vacuum pipes need cleaning will depend on whether milk gets into the system or not. If the pails are milked too full, then milk will be drawn over into the vacuum pipes. If this happens every day the pipes should be cleaned every day. They should be cleaned as often as this mistake happens.

Even though no milk is drawn into the vacuum pipes, they will become unsanitary. Vapor or moisture is drawn from the milk pail into the vacuum system. The cold pipes will condense the vapor.

Before starting the milking machine all pipes should be opened and drained, so that none of this condensed

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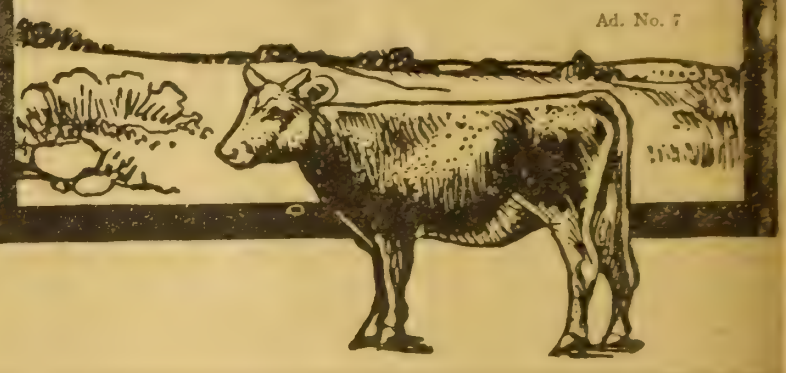

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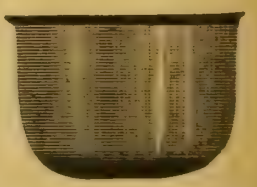

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water with impurities drain into the rubber tubing and even into the pail. This is important.

It is also impossible to prevent dust from getting into the vacuum pipes. This together with the moisture furnish raw material for foulness.

Method of Cleaning Vacuum Pipes

Before the small steam boiler was installed in a room adjacent to the dairy barn, we clean the pipes by pumping two sets of wash water through them. Some water was warmed, and a little washing powder added and stirred until well dissolved.

The vacuum pump was then started, and the prepared warm wash water was pumped through from the extreme end of the vacuum pipe. This water with any dust in the system was drawn into the vacuum storage tank located in the power room. At the bottom the vacuum tank there is a drain where all of it was drained away.

When this set of wash water had done its work well, then we pumped through a pailful of boiling hot water, and drained away from the vacuum storage tank as before. The power is shut off and all drain cocks opened. This leaves the vacuum system clean.

The heat in the pipes absorbed from the hot water will dry the whole inside and leave it in a clean, dry condition.

Since the installation of the small steam boiler, steam alone has been used. All drain cocks and places of attachments are opened. A small hose connects the vacuum pipe and the boiler. The steam is gradually turned on. At first the cold pipes condense the steam. When little more steam is turned on, the water rinses out all dirt particles.

The steaming thoroughly destroys all living organism. It also heats the pipes so they dry well after cleaning. This method of cleaning takes very little time. It is effective and does no harm.

If any milk had been accidentally drawn into the vacuum pipes, then they should be rinsed out with lukewarm water before the steam is turned in.

This cleaning we do regularly once each two weeks whether there is a need for it or not. It takes but a short time, and it is better to do it once too often than it is to run the danger of having the milk infested with abnormal and undesirable germs.

Sanitation Important in Machine Milking

When the question of keeping milking machines in good sanitary condition comes up, then some prospective users think that this is the worst part in connection with mechanical milking. The worry, however, subsides when the customer is told that some certain disinfectant is used, and that by keeping the different parts of the milking machine in this disinfectant solution between milkings no difficulties are encountered. That suggestion is quieting. It is like pouring oil on the troubled waters. However, the cleaning of milking machines should not be faced in that light. The cleaning of milking machines is no different from the cleaning of any other dairy utensil.

One day a prospective farmer came to the college dairy barns. He looked at the various pipes used for conducting the vacuum. He said: "Do all of these pipes belong to the milking machines?" He was informed they did. "I should think it would be an awful job to keep all of those pipes clean. I should think they would get to stinking in this hot weather." He is not the only prospective user of milking machines who magnifies the task of keeping a milking machine in a sanitary condition.

Not Many Parts to Clean

A milking machine can not be kept sanitary alone by soaking the parts in a disinfectant, or is there any need of making a mountain of difficulties over the cleaning of milking machines.

Any person owning enough cows to purchase a milking machine should be reasonably well prepared with cleaning facilities, such as hot water, a good washing compound, and a small container or vat for this purpose. The washing room should also be provided with a vacuum pipe and proper shut-off and attachment.

There are only a few parts to be kept clean and these parts are not difficult to get at.

Steps in Washing

When the milking is completed, the idfferent machines or pails are taken to the wash room. This wash room is equipped with a small five horse power, upright, submerged flue boiler. When purchased it cost $100, and I believe that every dairyman who makes dairying a business at all should have similar facilities for plenty of steam and hot water. In addition it funrishes a place for drying things, it keeps water and pipes from freezing, and it also furnishes a comfortable place for the help to do the cleaning of the separator, pails, etc.

This warm room also has in it a small vat having two compartments, one for hot, clean water to be used for rinsing, and the other for warm water containing the washing powder. A water supply pipe and a steam pipe lead up to the centre of the vat on the wall side.

The machine is first connected up with the vacuum pipe by means of a short pipe of rubber tubing, and the vacuum is turned on. The teat cups are inserted in a pail full of lukewarm water. The tubes are lifted up and down. This together with the vacuum rinses the teat cups and rubber tubing. If this is done at once after milking before the milk has a chance to dry on, then there will be very little milk to wash off by hand and brush. The gulching of the water thus brought about is quite effective.

However, this alone is not enough to keep the milking machine in good sanitary condition. The water in the double vat is then made ready. One compartment is filled with a clean, hot water, and the other compartment is filled with warm water containing some washing powder. The former is used for rinsing and the latter for washing. The temperature of the rinse water should be about 125 degrees F., and that of the wash water about 100 degrees F.

When the rinsing by vacuum is completed, the machine is taken apart and put into the prepared wash water. With the brushes specially provided, the different parts are cleaned, and one by one they are dropped into the other compartment containing the rinse water.

Keep in Disinfectant

From there the parts are put into the disinfectant solution. There is a great deal of difference of opinion as to what kind of a disinfectant to use. At this experiment station practically all of the common ones have been used and they have been tried at the same time comparatively, and bacterial analysis and observations made.

None have been found better than ordinary hydrated lime solution. The lime may be purchased anywhere. It may be had in a convenient package. It costs very little. It is not a poison such as are some of the other common disinfectants. Lime may be kept in a dairy with perfect propriety and safety. Lime does not cause odors in the milk room, or in the barn that will endanger the flavor of the milk. Lime is an effective germ destroyer if used properly. Lime solution does not affect the rubber and metal parts of the machines. Lime has a cleansing effect that can not be had from some of the other substances. It is deoderizer, as well as a germ destroyer.

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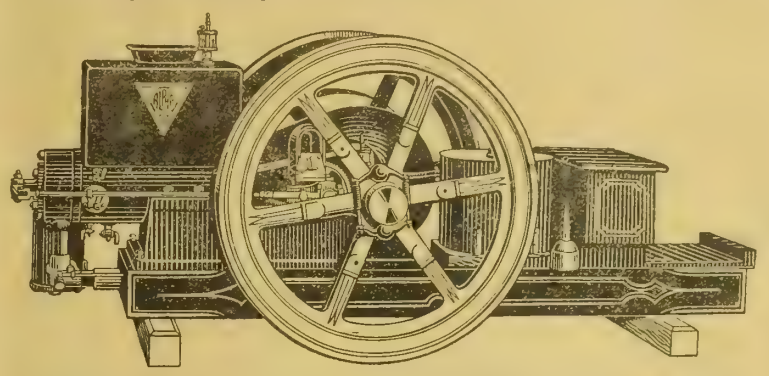

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THE HORSE

SORE SHOULDERS IN HORSES A COMMON COMPLAINT OF THE DRAFT ANIMALS ON HOT DAYS

This is a season that is exceptionally hard on horses. Letters from readers of Farm Journals reveal the information that many horses are dying from heat and exhaustion. This is more often found to be the case where a young colt is making his first appearance in the team as a worker. The most critical period in the life of every horse is the first few months at work, and in these days of high prices every effort should be made to keep farm horses fit for work every day.

Hardening the Skin of the Shoulder

Of all the ailments that subtract from a horse's usefulness none is of more importance than sore shoulders and necks. Unfortunately this is a part of the care of a horse that does not get the attention it deserves, either by properly fitting the collars or caring for the animal itself. When a colt first begins work the muscles of the shoulders are soft and the skin tender; the collar bed is narrow and sloping, not at all like a place fitted to receive the average collar. After the shoulders become sore they will never again regain their normal resistance to collar wear.

The importance of properly hardening the shoulders of the young colt cannot be over-estimated. Horses' shoulders will of course harden with age, but only if they are well kept. Shoulder sores, like all other sores, heal by the formation of scar tissue, which does not have vitality of normal muscle tissue. The training of a horse means the fitting of him for work and there can be no economical motive power without proper attention to the hardening process of the skin of the shoulder. Start the animal to work slowly, and bathe the shoulders at noon and night with a strong cold salt or alum solution.

Fitting the Collar

The fitting of a collar is another item in the training of the horse to work that does not get its due consideration by all horsemen. The practice of hitching up a horse with the first collar that comes to hand, will prove ruinous to the horse's shoulders. The fitting of a collar like the fitting of a shoe, requires not only the correct size, but the correct shape or style. If you had to wear every day, the first pair of boots that was thrown to you each morning, how would you find your feet after a week? Red, raw flesh, would have taken the place of hot broken blisters, and the operation of fitting shoes on your feet, perhaps a size or two small, by some unsympathetic individual would be greatly resented.

Some horses require long, narrow collars, while others require short, wide ones. Most horses are fitted best by a collar that narrows a few inches below the middle and widens at the top. This principle alone will in many cases prevent sore necks. When the collar is properly fitted there should be just room enough to slide the fingers between the collar and side of the neck. Below the neck there should be the space of an inch or more. A horse's collar should not be changed or worked on other horses, even though another have shoulders of the same size; when a collar becomes shaped to a horse's shoulders it is very desirable that it maintain that shape.

Keep Collar in Working Order

The practice of allowing the horse to stand during the noontide rest in very warm weather with all his harness on is also against his full utility at work. The excuse is put up that there is no time to unharness the animal, but time will be practically lost in the usefulness of a horse during the season, when not given the grooming and cleaning attention at noon, and this cannot be done with the harness on. Throwing the collar down in any odd corner, with its top unfastened will put the collar entirely out of shape. Instead of keeping the collar inside the barn at noon it should be cleaned on the pad side and dried in the sun. Never scrape the face of the collar with a knife or curry-comb; it will be roughened by such treatment. Then fasten it at the top and hang it up so that it will not lose its shape. Whenever the collar begins to get dry and hard, it should have an application of neat's foot oil—not too much at a time, just enough to keep the leather soft and pliable. This will lengthen the life of the collar as well as make it more comfortable for the horse. Whenever the face of the collar becomes hard it should be softened by pounding with a round stick about two inches in diameter. As a general rule, the cheapest collar, from the standpoint of the horse and from the standpoint of length of wear, is the best that money can buy. Buying cheap collars is poor economy.

Treatment of Sore Shoulders

Dr. Wilson, of the Pennsylvania State College, gives some very practical suggestions on the treatment of sore shoulders and he divides them into two distinct types as follows:—

"The type of sore accompanied by a large amount of swelling is due to the rupture of a blood vessel. The only treatment is to have a competent veterinarian darin the swelling and give the horse sufficient rest to allow healing. By far the most common form of sore shoulder is that produced simply by the collar wearing through the skin. More than 90 per cent. of this form of shoulder sore can be prevented if the shoulders are properly hardened, if the collars fit properly, and if the proper medicinal treatment is applied. For prevention and treatment nothing is quite equal to tincture of chloride of iron. As soon as it is noticed that the hair is beginning to wear off the shoulder or that the skin is becoming red, special attention should be paid to the fit of the collar and twice a day the worn area of the shoulder should be painted with tincture of chloride of iron. This has the

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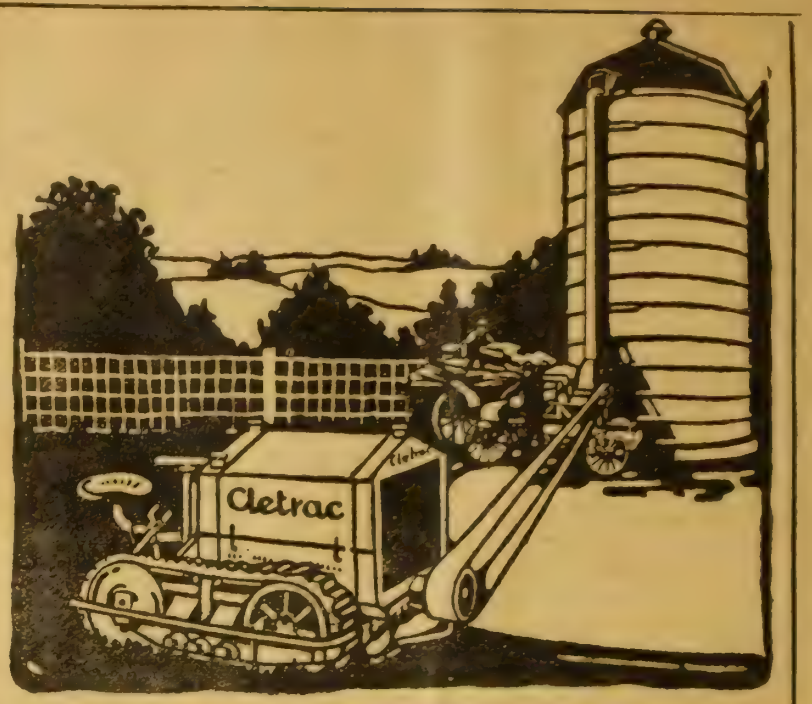

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effect of hardening or tanning the skin and prevents further wear. While the horse is at work salves should be avoided in the treatment, as they tend to soften the skin and wear takes place faster. If the horse is to be laid off, then salves are indicated in the place of the tincture of chloride of iron. But as long as the horse is in the collar nothing is equal to the tincture of chloride of iron. Tumor-like callouses which often form on improperly cared-for shoulders should be removed surgically by a competent veterinarian. No other treatment will effect a permanent cure."

Fitting the Hitch

A horse that has worked for some time will be subject to considerable shrinkage of the shoulders, which often necessitates a smaller collar. This fact necessitates careful attention. When a horse arrives in spring time in good and fit condition and full of flesh, it is certain that the collar he wears will need readjustment from time to time. More horses are working in collars too large than too small. The hames should be buckled tightly and so adjusted to fit the collar that the traces will pull from the centre of the shoulder bed. The hitch should be neither too high nor too low. A high hitch will cause sores on the point of the shoulder, a low hitch will cause sore necks. The hitch should be at a height that will cause the traces to pull at right angles to the collar bed. For this reason it is undesirable to work a tall and short horse in the same team unless the hitch can be properly adjusted to each horse.

YOUNG COLT AT WEANING REQUIRES BREEDER'S SPECIAL CARE AND MANAGEMENT

Take another look at that colt that has been well nurtured by its mother. It is a perfect model in form, a picture of health and full of fire and spirit. I never see one but I think of its future and the fate that awaits it. It is here that domestication breaks down and nine-tenths of all the diseases and short comings of horse flesh originates. What a different looking class of horses, than those seen in many districts today, would be found if the fateful period between weaning and mature growth was given more consideration. No horse will arrive at mature years endowed with full power, health and energy if the breeder has lost sight of the ideal as given him in the foalhood picture.

Every colt deserves a good start. It is necessary if the youngster is to be made into the best and most profitable animal. Pushing colts from outset is one of the biggest factors that have contributed to the success of growing good horses. It is only the men who study colt-weaning as a special subject who have mature draft horses worth the name or worth the rearing.

Preparing Colt for Weaning

A foal will probably take its first mouthful of grain from its mother's feed box. So soon as a foal learns what grain is, it needs a feed-box, set rather low at a place convenient for it, and at the same time out of reach of other animals. There is no more interesting work around the farm than that of preparing the colt for weaning time. There is probably no time in the life of a horse when such profitable returns are made from feed as when it is fed to foals.

When the time arrives for complete separation of colt and mother there will be no setback if the colt has been accustomed to hand feeding during the preparatory period. On the other hand, if the foal has to learn to eat. Weaning, properly described, is an act of preparation for the time it has to do without its mother. The sensitive animal loves to be fondled and fed and there is no better way of gaining its confidence than through its stomach. A little brown sugar fed to them by hand or sprinkled over their grain feed is a good first step in the act of preparing them for the weaning. After being deprived of its mother, it will loose flesh and constitutional vigor while getting used to the new conditions and treatment. For a colt that has not been well nourished by the mother, it is a good plan to teach it to drink skimmed milk, and its continuance after weaning will prove exceptionally beneficial. Clean, sound oats well ground constitute the best of all grains for young weanlings. If to this a little oil meal is added, about half a pint a day, good gains will be made in spite of cold weather. Feed liberally; there is far more danger and permanent injury from under feeding than from over feeding. Watch the colt closely and find out the quantity it can use with safety and feed up to it.

About five or six months is long enough for most foals to nurse. By that time if they have learned to eat grain they can be weaned without a setback. If weaned while there is still a month or two of grazing ahead during the fall, the transition from soft to dry feed is made very gradually.

Winter Housing

Besides the feeding there is the housing and general care of the colt that bulks largely in the welfare and growth as well as its future health and usefulness. Do not let the little fellow stand out in the cold wet weather, neither in the field in the fall nor in the yard in winter time. Another practice that is entirely against the chances of keeping the colt in growing vigor and spirit is tying hm up during thei winter months in some out of the way dark corner of the barn, where he becomes an exile from any domesticating influence, and where feeding facilities are lacking. Choose a light, airy place for the young colt, where he can enjoy winter life with summer freedom. Make feeding horses one of your winter hobbies; there is plenty of time in which to engage in the work. When you are busy in summer the colt can look after himself if given the chance of a good pasture. Remember that good pastures in summer will never make up for what has been lost in winter. Roots, either turnips or mangels, supply the place of the summer succulent grass and should be given regularly every day. Roots have a cooling tendency, contracting the heating effects of concentrated feeds. Many colts are spoiled through want of sufficient quantity of water. They are offered it perhaps the usual regulation number of times, but many colts will not drink ice cold water unless they are forced by excessive thirst. Water should be before them at all times in the stall. A colt cannot be kept growing in winter unless this precaution is taken. Timothy hay is not conducive to growth, and a portion of the best clover, alfalfa, or mixed hay should be saved for the use of the colt.

Winter Exercise

Liberal feeding and abundance of exercise go hand in hand in colt raising, but it is a mistake to think that you have to give them exercise whatever the weather may be. It will pay to keep them in when cold winds blow, when sleet or rain is falling, or when it is at zero weather. The argument that colts are reared in the west, out all winter does not fit the conditions of the colt that has been born and reared in Eastern Canada. The air in Western Canada is more rare and dry, and the colt and its mother run free all the time. There is not a foot or two of wet snow lying on the farm for four or five months of the year, as it does here in the East.

In no other way can colts be ruined so surely and so permanently as by close confinement. Each day from two to four hours should be spent in the open air, according to the conditions of the weather. Never let them out with empty stomachs, especially in zero weather. To send newly weaned colts to rustle for an existence in a yard or box stall along with yearlings or two-year-olds, which is often their fate, is to court failure at the start. They should get special attention alone or with companions of the same age and experience. They are naturally sensitive animals, and when left out in the cold or are herded along with older horses they naturally pine and lose heart. Stomach troubles that come in after life are generally due to neglect during the first winter's attention and feeding. To retain their spirit and health should be the aim of ever ybreeder, and the most vital period of their life, where these can be irreparably crushed, is at weaning time and the two succeeding years.

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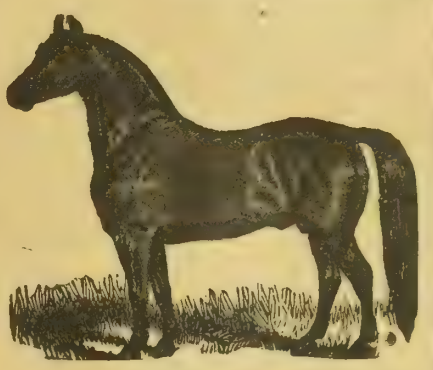

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NESTING EQUIPMENT FOR HENS

Suitable nesting equipment is essential for the successful management of laying hens. It should be planned to minimize the labor required in gathering eggs, in keeping nests clean and in supplying suitable nesting material. It is also important that the nests be made attractive and satisfactory to the hens.

The tendency of hens to lay their eggs on the poultry house floor, in the poultry ward or in "stolen" nests causes serious losses to poultry keepers. It increases the labor of finding and gathering the eggs. it causes the entire loss of many eggs and a deterioration in the quality of many others, and not infrequently it becomes the direct cause of fowls acquiring the vicious egg eating habit.

fI a sufficient number of nests is not provided to accommodate all the hens that wish to lay at any one time there are but three alternatives for the hen. She may appropriate a nest already occupied, lay somewhere else than in one of the nests provided, or wait until some other hen leaves the nest. The fact that most hens closely follow a definite time schedule in laying makes it appear doubtful whether it is possible for hens to long delay the time of laying, even if they desired to do so.

Observation made in securing data on this matter support the idea that hens cannot be relied upon to adopt a watchful waiting policy in this regard. To prevent hens from laying on the floor, in the poultry yard or in "stolen nests," and to prevent the broken eggs often resulting when more than one hen attempts to occupy one nest at the same time, it is necessary to have as many nests as there are likely to be hens wishing to lay at one time.

Our data show that for each egg produced by a flock, one nest is occupied for an average of two hours, and that during the months when egg production is heaviest we may often expect at least a third of the laying hens wishing to occupy the nests during the same two hours of the day. As a flock of good layers will not infrequently produce as many as three eggs for each four hens in the flock, it would seem that one nest for each four or five hens would not be more than a safe number to provide, and in the case of flocks of less than 100 fowls, where chance is an important factor there should be even more nests.

Type and Location of Nests

The nests and their location in the poultry house should be planned with reference to convenience in gatherinig the eggs and keeping the nests clean and free from vermin, as well as making them attractive to the hens.

One of the commonest locations for the nest is beneath the perches. This necessitates the use of a good tight dropping board to prevent the nests from becoming contaminated. When such a dropping board is used there are some disadvantages in locating the nests under it. The nests and roosts are the most common places to become infected with mites and the use of these two classes of fixtures together may tend to increase the difficulty of exterminating this pest.

If there are more than two or three roosts, the use of nests under the dropping board cuts off access to the wide floor space to the rear, and because of the seclusion afforded increases the tendency of the hens to lay on the floor, where the eggs are difficult to gather. On the other hand, this location permits the use of cheaper and more simply constructed nests than is reuireqd elsewhere, and most readily affords the desirable seclusion for the nests.

Recently a number of poultry keepers have been using and recommending a nesting box without partitions in it. Partitions, however, make each nest more secluded, and hold the nesting material in shape once the nest has been made. The writer has observed that the hens prefer to adopt a nest in which the nesting material has already been moulded into shape, rather than to arrange the nesting material in shape themselves.

How Often Should Eggs Be Gathered?

One of the most important measures that can be taken to prevent deterioration in the quality of eggs is to keep them cool. The development of the chick embryo of fertile eggs, the breaking down of the albumen, weakening of the yolk membrane and the evaporation of water from both fertile and infertile eggs constitute the most serious losses in egg deterioration and these all take place most rapidly at warm temperatures.

Both fertile and infertile eggs will suffer a greater deterioration in quality each hour they are held at a temperature equivalent to that of an occupied hen's nest, than they will each day when kept under favorable storage conditions. With most of the eggs being laid in the forenoon, but with a significant number of hens laying in the afternoon and spending an average of two hours each on the nest, considerable deterioration of a large per cent. of the eggs will be prevented by gathering them at noon and again during the evening.

If care is taken not to disturb the hens more than necessary the nests will be made even more attractive to the remaining hens as has been shown by the observcations reported elsewhere in this buletin. Gathering the eggs twice each day is, of course, more important during warm weather but it also helps to keep the eggs clean when the hens are on range during wet, mudy weather.

The ideal conditions for maintaining the hatching quality of eggs held for incubation seem to be somewhat different than those required for preserving the quality of eggs considered from the standpoint of their value for human food. In maintaining the hatching quality of eggs it is necessary to provide conditions that will maintain the life and vigor of the germ as well as the food material that has been put in the egg to nourish the embryo through the period of incubation.

It is interesting to note in this connection that the hatching quality of eggs is more effectively maintained if they are warmed up each day so that they are subjected to the same temperature conditions that they receive when they are laid in the stolen nest. It has been found that by placing under hens for sixty minutes each day the eggs that were being held for some time for incubation, the number of vigorous chicks hatched was increased 10 per cent. What would be the effect of holding the eggs at such a temperature for a longer period each day has not to the writer's knowledge, been determined, but since the hen using a stolen nest probably spends as much time on the nest as when aying under the conditions of the tests reported herewith it is probable that two hours of such heating would not prove detrimental.

Further investigation is needed before one can safely conclude that gathering the egs more than once each day during moderate or warm weather is beneficial from the standpoint of their hatching quality.

Influences of Attractive Nests

Little is known as to what extent the nature and location of the nest and the use of nest eggs influence egg production. Brown, an English poultry authority, says that the removal of the eggs from the nest has been one of the important factors in bringing about increased egg porduction in the domestication of the fowl.

The regular removal of the eggs from the nests of certain wild birds results in a marked increase in the number of eggs produced in a clutch. The experience of poultrymen in the management of geese, particularly, has led them to believe that the regular removal of the eggs from the nest will postpone broodiness and result in the production of more eggs during a season.

Although we do not have sufficient evidence to warrant the conclusion that the use of secluded nests and nest eggs have such a marked influence upon egg production directly, it is not too much to assume that their use will indirectly increase production just as the use of any other

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measure which adds to the general contentment and comfort of the stock may be expected to do so.

The Influence of Seclusion

Although secluded nests are commonly recommended to poultry keepers as preferable to others, no actual experiments or observations have beeen reported to substantiate the claim that they are more attractive or more satisfactory to the laying hen. In order to secure definite data on this point a flock of Rhode Island Red pullets housed in the new tile poultry house previously mentioned was placed in an experiment for a period of one month commencing the middle of February. They were housed in two pens but with the door between them kept open so that the hens could move freely from one pen to the other. Each pen was provided with two sections of nests, each section consisting of eight nests. During this experiment one section of nests in each pen was kept closed and the other one open.

Each day when the eggs were gathered the section of nests that had been open in each pen during the day was closed and the other one was opened to be kept thus for the next day. This eliminated the effect of any expected.

A total of 535 eggs was laid in the 32 nests during the experiment. Of these 251 eggs, or about 47 per cent. of the total, were gathered from the exposed or open nests and 284 eggs, or about 53 per cent, from the closed or more concealed nests. Expressed on the same basis as the results of the nest experiments, for each 100 eggs laid in the exposed nests, 113 eggs were laid in the concealed ones. Although the result shows a positive advantage efor the concealed nest, it is not so great as for the use of nest eggs.—By Geo. M. Turpin, of the Iowa Experimental Station.

EARLY PULLETS VS. OLD HENS FOR EGGS

For profitable early winter egg production the early hatched pullet is three times better than the late pullet, four times better than the yearling hen and thirty times better than the "aged" hen.

Early pullets are best for winter eggs. This has been demonstrated many times. The Poultry Division, Experimental Farm, has collected figures for several years and when the three months (November, December and January) only are taken into consideration the relative profitableness of the four ages is as noted above. If the six winter months were considered the contrast would not be so striking for the hens and the late pullets were just beginning to lay when the experiment closed. However, if eggs alone are to be considered we cannot afford to feed birds until towards spring before they produce. Even if desired for breeding it is a question if, with the high price of feed, we had not better rely upon the well matured pullet for hatching eggs next spring rather than feed hens that will not produce or only at a loss. Certainly there is no excuse whatever for keeping in our poultry houses late pullets whose eggs cost more than they are eworth and birds that are absolutely useless as breeders.

This summary is of results that extend over four years and are taken rfom several of the farms of the system so that the figures will indicate fairly well what may be expected for these three months.

These figures show that early pullets (hatched before May 1st) produced eggs at a cost of feed of 18.3 cents. The late pullets (hatched after May 15th) at a cost of 56 cents. The year old hens at a cost of78.2 cents, and for every dozen eggs laid by the hens in the aged class the cost of feed was $5.73.

Again these facts should be emphasized (1) that for profitable egg production birds should lay before February. (2) Early well-matured pullets are the only birds that may be expected to do this. (3) Late pullets as a rule will not pay to keep. (4) For eggs, hens are not profitable. (5) If we have a good flock of early pullets for the time being depend upon them for breeeding. (6) It is a national loss to keep birds that eat a dollar's worth of feed to proudce fifty cents' worth of eggs.

The frequent use of some good disinfectant in and around the poultry house will often prevent the accumulation of disease germs and help to keep the fowls in condition to be profitable

A SATISFACTORY DROPPINGS BOARD

Could you describe a good droppings board for a hen house? I want to get one that can be taken out easily and cleaned every day.—A. B.

Ans.—The most satisfactory droppings board that I have ever used is the concrete floor beneath the perches with a wide board set on edge in front of them to keep the litter from being scratched into the droppings. This "board" harbors no mites in its cracks, and is readily cleaned at convenient intervals with a shovel. If one desires a real droppings platform, however, it should be made from smooth lumber and preferably in sections so that it can readily be removed for cleaning. The cracks in and about droppings boards are breeding places for mites and necessitate frequent attention on the part of the caretaker; consequently it is well to dispense with them unless limited floor space requires their use.

Know your weeds while they are young in order that you may dispose of them before they pollute your grain fields.

MOUNT ALLISON LADIES' COLLEGE

Founded 1854. Session 1919-20

OPENS SEPTEMBER 8

¶This is the largest Residential Ladies' College in Canada.

¶WE STAND FOR—High Ideals, Soul Culture, Intellectual Equipment.

¶WE GIVE COURSES in—Music, Oratory, Household Science, Literature, Fine Arts and University Matriculation. Business Courses are provided by the Academy Affiliated with us.

¶WE POSSESS—An enviable reputation of almost continental scope.

¶Our Art Museum is a feature where we consider we stand without a peer. Free Calendar on application to

Rev. HAMILTON WIGLE, D.D., Principal
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MOUNT ALLISON UNIVERSITY

Annual Session 1919-20

OPENS SATURDAY SEPT. 20

¶Many Scholarships and Prizes are offered. For information regarding Courses of Study, Degrees, Scholarships, Prizes, Affiliated Relations, Expenses, etc.

SEND FOR CALENDAR

¶Incoming Students wishing Residential Accommodation—for which MOUNT ALLISON IS JUSTLY FAMOUS—should give earliest possible notice.

Courses in
ARTS, SCIENCE, AND THEOLOGY

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MOUNT ALLISON ACADEMY

¶Offers General, Special, and Matriculation Courses leading to the Colleges of Arts, Engineering, Medicine, etc. Manual Training.

MOUNT ALLISON COMMERCIAL COLLEGE

¶Offers Courses in Business, Shorthand, and Typewriting, Penmanship, etc.

Comfortable Residence, Strong Staff of Experienced Teachers

¶A limited number of positions available by which students, either male or female, may assist themselves to pay expenses.

FIRST TERM BEGINS SEPTEMBER 8

Calendar Sent on Request

J. M. PALMER, M.A., L.L.D. : Principal
SACKVILLE, N. B.

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

There's joy in the smile of a comrade,
and joy in the blue of the sky
Who lives in the sunshine of friendship, has joy that no money can buy.
There is peace to be found in the valleys and calm in the shelter of trees,
And millions of people are happy in claiming such pleasures as these.
—Edgar A. Guest

MIRANDY ON SPOILING YOUR HELPMATE

By Dorothy Dix in the Good Housekeeping Magazine

Honey chile, is you ever done took notice dat hits seems lak all de lady angels is married to rapscallions, and vicey versey, as Brer Jinkins says, an' dat all dem men what is sheriffs from de skies is done tied up wid wives dat is she-devils?

Yassum, you sees dat kind of mixtry in so many homes dat when you runs acrost a grand, noble woman wid a halo shinin' aroun' her, you spects to find her fishin' a husband, what is a human shrimp, out of de gutter, and wearin' a black eye dat he give her as his thanks for takin' keer of him.

Lakwise, when you set yo' eyeballs on a man what leads de temperance movement and sticks by de hearthstone as close as a sick cat, and what gits hump-shouldered wukking for his fambly, an what gits up in de night an walks de baby wid de colic, mo' dan lakly you will find out dat he is united in de holy bonds to a wife what is a hussy dat's castin' sheep's-eyes at odder men, an' blowin' in his pay-envelop on britches-leg skirts an sech vanities.

Somehow hit don't look lak dere's no mutualness in matermony. You don't sca'cely ever see a husband and wife dat's patient an kind wid each odder an' sacerficin' demselves to each odder. Dat you don't! One or de odder of dem is done shouldered de whole job, an' is doin' all of de sacerficin', an' showin' all de patience and de kindness, whilst de odded one is a-tearin' hit out widout thinkin' of nobody but demselves.

Hit used to look mighty funny to me dat de good folks always had sech bad luck in marryin'. An' I prognosticated dat de reason of hit was dat they didn't tote no rabbit's foot, or else dat they sho' was mighty po' pickers, when it come to selectin' deir life pardners. But dat was befo' I done mix up in dis here marryin' business myself.

Now I knows dat dere ain't no conjer laid on de good dat makes dem tie up wid de bad, an dat turns matermony from a gran', sweet song to a cat fight in de back yard. Hit's de goodness of de good dat's at de bottom of all de trouble, and dat makes de badness of de bad.

Hit's de good women dat spiles de men dey marry and turns dem into bad husbands, and hit's de good men dat spiles de nice little gals dey leads to de altar, and turns dem into vixens.

Yassum, when we gits married, we's jest lak babies dat is born into a new worl', an' we kin be spiled jest as easy aas a baby kin. Or we kin be trained to behave ourselves an' be good jest lak a baby kin. How a husband or wife turns out depends on whedder de one had sense enough, or grit enough in deir craw, to let de odder one howl and shriek for what they wanted widout gittin' hit, or whedder he or she give in to save de fuss an' let de husband or de wife find out dat dey could always git deir way by makin' a row.

Now me, when I was fust married to Ike, co'se I wanted him to think dat I was dat meek and mild dat butter wouldn't melt in my mouf. So when he got to segasuatin' around wid dat fliberty-jiberty May Sue Jones, what I has always had my spicions dat she ain't no better dan she oughter be, an' he took to stayin' out of nights at de crap game, whilst I passed a excitin' evenin' at home watch' de baby sleep and patchin' his britches, I didn't say nothin' to him, dough I mos' chewed my tongue off to keep from doin' hit.

I was tryin' to live up to what I thought a noble, forbearin' wife had oughter be, so I'd welcome him home wid a glad, sweet smile, and de mo' I kep silent, and de mo' glad, sweet smiles I give him, de mo' he gallivanted around wid May Sue Jones, an' de later he stayed at de crap game, because I was spilin' him into thinkin' dat a man can tread de path of matermony wid one foot an' roam along de free road of de bachelor wid de odder foot.

Wellum, as soon as I seen de light, I went to hit, lak de Scripcher says to do. I begun to unspile dat man I had started out to spile. De nex' night, when Ike come home from de crap game, I wan't waitin' up for him wid no glad, sweet smile. I was waitin' up for him wid de rollin'-pin in one hand an' de stove-lifter in de odder, an' by de time he done got out of de horspital, hit seemed he had sorter los' his interest in games of chance. Leastways, he don't go to dem no mo'. An' de way I spressified myself 'bout what I was liable to do if I ever cotched him pergrinatin' roun' after any odder woman, makes him afraid to look at a skirt hangin' on a clothesline to dis very day.

Yassum, Ike suttinly has gone de name of bein' de most domestic man in Little Zion Church, an' he sho' has been a model husband, but de reason he'd good is becase I brought him up bp hand to walk in de way he should go.

Now Sis Hannah Jane, she ain't a probus woman like I is, dat's got a backbone lak a telefoam post. Sis Hannah Jane, se is jest lak a bowl full of jelly, an' de only reason dat anybody don't walk over her is becase dey is too kind to do hit.

Now Sis Hannah Jane is married to Brer Si, what's a rich man wid money in de bank, but Sis Hannah Jane looks lak somebody done took her out of de ragbag, dough she hones an' pines for good clothes an' flower bonnets lak ev'ry woman does. But she don't git 'em becase Brer Si is done got de notion dat shut-waists grows on a woman lak feathers does on a hen, an' dat she can run a house on air, an' dat a man can't waste money in no foolisher wap dan spendin' hit on his wife.

Now all of dat is mos'ly Sis Hannah Jane's fault. When dey was fust married, she was so anxious to please Brer Si dat she made over her weddin' frocks until dere warn't a scrap of 'em left, an' she wore her last year's birdnest on her haid for a hat, an' inched an' pinched an' suiqnched to save every penny, ontil she got Brer Si to think dat she was a miracle worker dat could git along widout money.

She done spiled him becase she didn't ax for anything for herself, an' what a woman don't ax for, she don't git. Yassum, you take hit from me, dat if a wife eats de back of de chicken an' gives her husband de white meat, an' if she wears de ole clothes an' lets him have de new suit one time, she has got to eat de back of de chicken an' wear de ole clothes as long as she lives. An' her husband won't thank her for hit, nuther. He'll jest think she is a plum idjut to let him have de best of hit. I ain't got no pity for dese here self-sacerficin' wives. Dey could have trained deir husbands to divide wid 'em if dey had had any spunk in 'em.

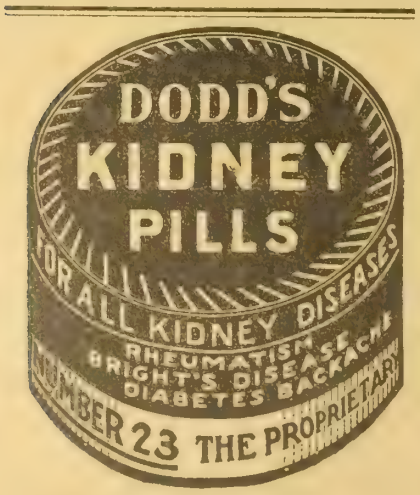
And men spile deir wives jes de same as womn do deir husbands, an' turn women who would 'a made puffectly good helpmates into millstones around deir necks.

Dere's Brer Hiram what is let Sis Ailsie keep his nose to de grindstone all of his life by her extravagance an' what throws mo' out of de back do' wid a spoon dan he can put in at de front do' wid a shovel. An' dere's Brer Thomas what has to git up an' cook his own breakfast an' live in a house lak a pigsty becase Sis Phrony is lazy an' shiftless an' was born too tired to wuk, an' dere's a million odder men dat I know dat walks in fear an' tremblin' of wives dat has de high strikes ev'y time dey's crossed.

All of dem women is des been spiled rotten by deir husbands. Dey's jest bad chillen an' hit's Gawd's pity dat when a woman acts lak a chile she can't be treated lak a chile, an' spanked until she's good. But dey can't, for a man dassent strike a woman no matter how much she needs hit an' what good hit would do her.

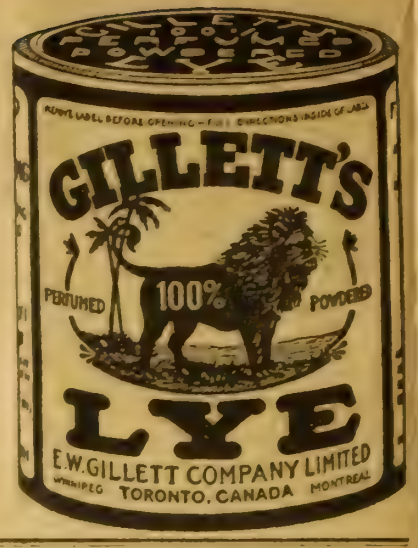
An' wome nknow dis, an' dat's why dey cry an' howl for what dey want jest lak a baby does. My advice to any young man dat is gettin' married is to pervide hisself wid a waterproof shut, at wll shed his bride's tears lak a duck des water, an' dat will keep his backbone dry so hit won't wilt down an' keep him from doing his duty by her an' makin' her behave herself.

Yassum, we mos'ly make our bad husbands an' wives for ourselves by spiling good material wid our bunglin'. But hit's kinder sorrerful dat we can't treat our husbands an' wives lak we would lak to widout ruining 'em, ain't hit?



LABOR DAY

Labor may be defined as an effort for the satisfying of human need. We are prone to think of the laboring class as those who work with their hands and win their bread by the sweat of their brow, but since all mankind has various needs, labor becomes the blessing and requisite of all. The capitalist and his money, alone, are quite useless, and only when his labor of mind ha decided on its investment does it begin as a factor in this work of supplying human need; and ere it ends, trust companies, banks, bankers, and manufacturers are all employed in labor. These in turn require the labor of man yin order to operate their plans and make practical their executive ability. Labor, then, marks the beginning and the end of all accomplishments, all progress and all civilization, as all laborers, both mental and



physical, require sustenance in order that they may work, the labor of the farmer must be employed. To assist him, he must turn to manufacturers and so we see that each class of labor depends upon another and no one individual or class is independent of another.

It was the recogniition of this fact that caused labor day to be set apart as a holiday. It was first observed in the United States and there, as in Canada, the holiday falls on the first Monday of September. Due to a Labor Conference in Berlin in 1890, May 1st is to some extent observed in Europe.

The progress that labor has made and the power it holds, is often demonstrated in the labor strikes which occur in cities. These strikes are the result of labor unions, which set a scale or standard of wages, length of woring day, etc., to which regulations employers must concede or the men, as one man, refuse to work, and the operations of the company are at a stand still. Even if they continue to refuse to meet the demands of union men, and secure non-union men at other terms, the shock to their business is so great, both from loss of time and less competent labor, that usually some concessions are made and the union triumphs. These strikes result from the knowledge that labor is more essential than capital and are right or wrong according to one's viewpoint. Sometimes they mean great loss to the striker, and his family is oftentimes reduced from comfortable living to dire poverty. Homes are often lost waiting for a turn in the tide of affairs and the discouraged striker often finds the saloon his final

SUFFERED 5 YEARS WITH HEART TROUBLE.

Through one cause or other a large majority of people are troubled with some form of heart trouble but do not know it.

When the heart becomes affected there ensues a feeling of a choking sensation, the breath becomes so short it is hard to breathe and you feel as if you were smothering, you become weak and dizzy, the heart palpitates, throbs and beats irregularly.

On the first sign of the heart becoming weakened you will find that a few boxes of Milburn's Heart and Nerve Pills will strengthen and invigorate it so that it beats strong and regular, and the lost vitality is replaced by vigor and energy.

Mr. Stephen Crouse, East Clifford, N.S., writes:—"I suffered for five years with heart trouble. I could hardly walk to the barn without resting I used to get so short of breath. The doctors could not help me. My wife told me about Milburn's Heart and Nerve Pills. I got a box and felt better; three boxes made me quite well. I am now helping my son work the farm; and can truthfully say I feel like a different man. I can highly recommend your pills to any one who has a weak heart."

Price 50c. a box at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

Every 10c Packet of
WILSON'S
FLY PADS
WILL KILL MORE FLIES THAN $8.00 WORTH OF ANY STICKY FLY CATCHER

Clean to handle. Sold by all Druggists, Grocers and General Stores.

comfort However, labor unions, under wise management and fair-minded thinking men, have strengthened certain labor classes, have done much good to the individual, and the general public has profited in the benefit derived from skillfully accomplished work.—Written by Miss Elizabeth M. Galloway, of the Centre Napan Women's Institute.

HOT-WEATHER RULES

1. Load lightly, and drive slowly.
2. Stop in the shade, if possible.
3. Water your horse as often as possible. So long as a horse is working, water in small quantities will not hurt him. But let him drink only a few swallows if he is going to stand still. Do not fail to water him at night after he has eaten his hay.
4. When he comes in after work, sponge off the harness marks and sweat, his eyes, his nose and mouth, and the dock. Wash his feet but not his legs.
5. If the thermometer is 75 degrees or higher, wipe him all over with a damp sponge, using vinegar water if possible. Do not wash the horse at night.
6. Saturday night, give a bran mash, lukewarm; and add a tablespoonful of saltpetre.
7. Do not use a horse hat, unless it is a canopy-top hat. The ordinary bell-shaped hat does more harm than good.
8. A sponge on top of the head, or even a cloth, is good if kept wet. If dry it is worse than nothing.
9. If the horse is overcome by heat, get him into the shade, remove harness and bridle, wash out his mouth, sponge him all over, shower his legs, and give him two ounces of aromatic spirits of ammoniaa, or two ounces of sweet spirits of nitre, in a pint of water; or give him a pint of coffee warm. Cool his head at once, using cold water, or, if necessary, chopped ice, wrapped in a cloth.
10. If the horse is off his feed, try him with two quarts of oats mixed with bran and a little water, and add a little salt or sugar. Or give him oatmeal gruel or barley water to drink.
11. Watch your horse. If he stops sweating suddenly, or if he breathes short and quick, or if his ears droop, or if he stands with his legs braced sideways, he is in danger of a heat or sun stroke and needs attention at once.
12. If it is so hot that the horse sweats in the stable at night tie him outside, with bedding under him. Unless he cools off during the night he cannot well stand the next day's heat.

Spanking Doesn't Cure!

Don't think children can be cured of bed-wetting by spanking them. The trouble is constitutional, the child cannot help it. I will send **FREE** to any mother my successful home treatment, with full instructions. If your children trouble you in this way, send no money, but write me to-day. My treatment is highly recommended to adults troubled with urine difficulties by day or night. Write for free trial treatment.

Mrs. M. Summers
BOX 309 WINDSOR, Ontario

MINARD'S
"KING OF PAIN"
LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

WHAT CAN BE DONE WITH CRAB APPLES

Crab apple trees produce almost every year, and grow in any out-of-the-way corner with little attention. A few trees will supply fruit for jelly and preserves much more cheaply than the high-priced apples on the market. Moreover, the quality is just as good, if not better.

To make crab apple jelly, wash the crabs thoroughly, remove the leaves and blossom ends, cut out the decayed spots and place the apples in a preserving kettle. It is unnecessary to peel the fruit or to remove the cores and stems. Cover the apples well with cold water and cook them slowly until they become very much broken. The longer and more slowly they cook the better will be the flavor and color of the jelly. Pour the apples and juice into a jelly bag, and drain them overnight without pressure.

n tIhe morning measure the juice and add an equal amount of granulated cane sugar. Stir the juice until the sugar is thoroughly dissolved. Pour the sweetened juice into large-sized rather shallow granite kettles, with so little in each that iti will begin boiling very soon after it is placed over the refi. Crab apple jelly requires very little boiling. As soon as the juice becomes thick enough pour it into glasses.

A surprising amount of juice, of course contaaining some pulp, may be secured by pressing the apples left in the jelly bag. Jelly can be made from this juice also. If this second grade juice is pressed out the remaining pulp should be disposed of, as it is too dry to be palatable. On the other hand if the juice is not pressed out, the pulp may be made into fairly palatable crab apple butter. Some people consider the flavor of the jelly to be improved if a stick of cinnamon is added to the crabs before they are boiled.

Butter and Pickles

Crab apple butter is inferior to that made from other apples, but even at that it is very palatable indeed. Wash the crab apples thoroughly, remove the leaves and blossom ends, place the crabs in a large preserving kettle and cover them well with cold water. Allow them to cook slowly until they become thoroughly soft. Remove them from the fire and allow them to cool enough to handle. Empty both the apples and the juice into a granite colander and rub them through it. Place the pulp and juice together in a stone crock with enough sugar to lake the butter as sweet as desired; usually about a cupful of sugar to a quart of pulp and juice is satisfactory. Add also cloves and cinnamon to suit taste. Mix the sugar and seasoning with the pulp and juice and then place the crock in a moderately hot oven. Stir the butter once every ten or fifteen minutes. When it becomes thick like mush, seal it in jars.

Crab apple preserves are superior in flavor, shape and color to those made from other apples. Prepare a heavy sirup by boiling together for fifteen minutes sugar and water in the proportion of one quart of sugar to one quart of water. Select perfect, well colored crab apples, wash them thoroughly and remove the blossom ends; leave the stems and peelings. Place the crabs in the sirup and stew them gently until they are well done. Lift them out and put them into glass jars. Unless the sirup is very thick, boil it until it becomes like molasses; then fill the jars to overflowing and seal.

For pickled crab apples select only perfect ripe fruit. Wash the crabs thoroughly, remove the blossom ends, being careful not to break or remove the stems, and put the apples into a preserving kettle with enough vinegar to cover them. Boil them slowly until they become tender, but remove them before they fall to pieces and place them in the jars; measure out this amount, and an extra pint to allow for boiling away, from the liquid in which the crabs were cooked. Add one and half pints of brown sugar for each pint of vinegar, and also a bag containing two sticks of cinnamon and three tablespoonfuls of cloves; boil the mixture for thirty minutes. Then pour the boiling vinegar over the crab apples and seal the jars.

WE SERVE YOU

What services do your bankers render?

Do they supply you with sound, practical advice based on up-to-date knowledge of markets, prices and business conditions? Do they help you to take advantage of your opportunities and increase your income?

This Bank is prepared to help farmers in every way possible.

THE CANADIAN BANK OF COMMERCE

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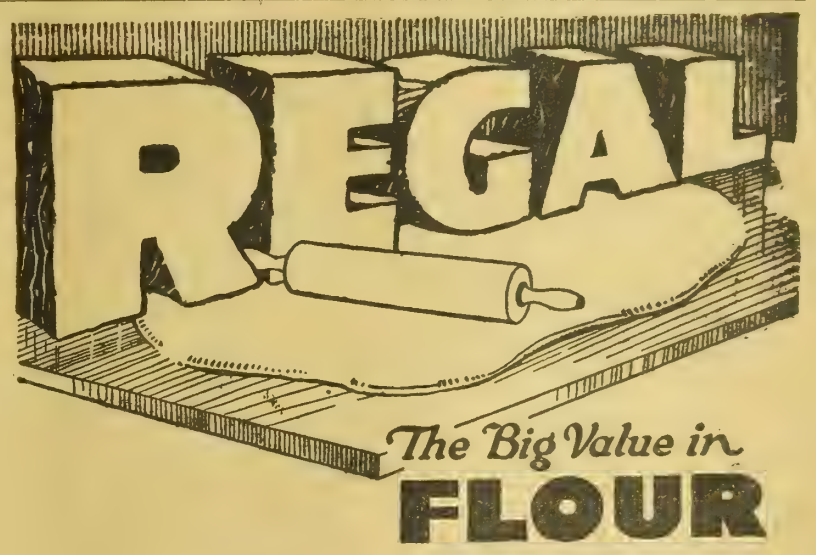
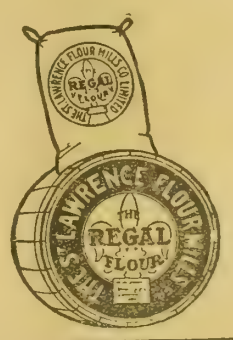


The Big Value in
FLOUR



IN making tea biscuits and pastry, there is no flour that gives better satisfaction than "REGAL". Biscuit makers consider "REGAL" the BIG VALUE in flour.

The St. Lawrence Flour Mills Co.
Limited
MONTREAL

HAD DYSENTERY

Was So Weak She Had To Go To Bed.

Mrs Charles Buchanan, West Monkton, Ont., writes:—"I took Dr Fowler's Extract of Wild Strawberry when I had dysentery so bad I passed nothing but blood and water. I got medicine from our doctor, but it failed to help me. A friend of mine dropped into see me one afternoon. I was so weak I was in bed. She told me what "Dr. Fowler's" had done for her little boy, and she went home and got the bottle she always kept in her medicine chest, and believe me four doses helped me so I could get up and do my work. I took two more doses and I was as normal as I should be. I would not be without it now if it were five dollars a bottle. My husband has used it since I did, for diarrhoea and he got splendid results. You may publish this if you wish, as it may lead some other sufferer to a cure."

Dr. Fowler's Extract of Wild Strawberry for the past 74 years has had phenomenal success in all cases of diarrhoea, dysentery, cramps, colic, cholera morbus, cholera infantum, summer complaint and bowel complaints of old and young.

If you want to be on the safe side, if you don't want to experiment or take chances as to results, refuse any and every bowel complaint compound that is offered you and insist on the old reliable "Dr. Fowler's."

Price 35c. a bottle at all dealers. Put up only by The T. Milburn Co., Limited, Toronto, Ont.

RAW FRUIT DESSERTS

Rhubarb possesses the faculty of harmonizing with other fruits in any combination. The acid juice congeals readily in making rhubarb jelly; and in combination with peach, orange, quince, strawberry, and current juices, it assists these latter to jelly without changing their flavors. The juice of the rhubarb can be brought to the boiling point, sealed and put away to use in combination with the later fruits.

Molded ice and Rhubarb

20 medium-sized stalks green rhubarb, 1 quart water, 1½ cupfuls light brown sugar, 1 cupful rice.

Cut rhubarb in small pieces and boil until soft. Remove from fire and drain as dry as possible; mash and add brown sugar. Boil rice until soft in water. Mix rhubarb and rice, beating thoroughly. Mold in slightly buttered cups and place on ice until cold. Take from molds just before serving and serve with hard sauce.

Rhubarb With Raisins

2 pints rhubarb cut in inch pieces, 1 cupful raisins, ¾ cupful sugar.

Put rhubarb in a saucepan over a very low fire until the juice runs freely. Do not let it at any time boil hard. Add the raisins and let this boil until the rhubarb is nearly reduced to a pulp; then add sugar. Boil up, remove from fire, and put aside to cool. Serve cold with cream.

Rhubarb and Banana Dessert.

1 pound rhubarb, 1 cupful sugar, 1¼ tablespoonfuls gelatin.

Steam the rhubarb, which has been cut in pieces, with the sugar and one-half cupful water; when thoroughly cooked add gelatin which has been soaked in one-fourth cupful cold water for half an hour.

1 cupful banana pulp, Juice of half a lemon; ½ cupful orange juice; ½ cupful sugar; 1½ tablespoonfuls gelatin; 1 cupful whipped cream.

To the banana pulp add lemon and orange juice, sugar, and gelatin soaked in cold water, as above directed. When beginning to set, fold in the whipped cream. Put a layer of the rhubarb jelly in a mold, then a layer of the banana cream, alternating until the mold is filled. Place in the ice box to harden. When ready to serve, unmold and garnish with whipped cream flavored with banana.

Cherry Cup

Seed one quart of sweet cherries. Put one pineapple through the food chopper. Combine the fruits with one-half cupful sugar, and chill. When ready to serve, pour over the fruit one-fourth cupful lemon juice and one-half cupful orange juice mixed with one-half cupful sugar. Serve in small glasses. Walnut meats and marshmallows may be added; or cream, sweetened and whipped until stiff, may be heaped on top.

A Dainty Strawberry Dessert

1 cupful ripe strawberries, 1 cupful sugar, 2 egg whites, stale cake.

Mash the berries and stir in the sugar. Beat the whites of the eggs stiff; then put in the berries and sugar and whip stiff. Put a layer of stale cake in the bottom of a dish and pour the strawberry fluff over it. In about an hour the cake will be permeated and softened with the juices while the fluff on top is firmer than before. If you desire to make the dish more ornamental, drop spoonfuls of whipped cream on the meringue, putting a strawberry and a bit of green angelica or real strawberry leaves on each.

Strawberry Blanc Mange

1 quart milk, ¼ cupful sugar, 1 cupful strawberry juice, 4 tablespoonfuls cornstarch.

Heat milk to boiling point; add sugar, strawberry juice, and cornstarch which has been rubber smooth in a little cold milk. Cook until thick, and pour into wet molds. When firm turn out and garnish with whole strawberries and serve with sweetened whipped cream.

LET a woman ease your suffering. I want you to write, and let me tell you of my simple method of home treatment, send you ten days' free trial, postpaid, and put you in touch with women in Canada who will gladly tell what my method has done for them.

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me today for free trial treatment.

A MESSAGE TO WOMEN!!

Mrs. M. Summers, Box 309 Windsor, Ont.

THE VALUE OF FRUIT AS A FOOD

All our cultivated fruits have a history behind them, running back to the tiime when the earliest gardeners picked out the best species from the wild and transplanted the tree or bush to a plot in the home grounds.

Delicately flavoured apples or juicy seedless oranges are the result of hundreds of years of painstaking effort. Improvements in size and quality have come through careful selection, aided by chance cross fertilization, which gave rise to new types. Each advance made, gave encouragement to further effort and so great have been the transformations that it is difficult to trace most of the modern forms back to the original species.

Fruits are divided into two classes —flavored and food fruits. Food fruits contain more than 20% solids; flavored fruits are apples, pears, quinces, oranges, lemons, lime, etc. Food fruits are prune, date, raisins, banana, fig, etc.

The fig is highly nutritious owing to the large amount of sugar in its composition. It is a laxative food. Banana is also highly nutritious. It is reported to yield more fruit to the acre than almost any other plant; one cluster may have from 160 to 180 bananas. There is a banana meal which is made from the unripe banana. It is dried, ground and used in making bread.

Peaches are not nutritious, but are valued for their delicate flavor. Since they contain little sugar they are valuable to a diabetic patient. Olives are used as appetizers. They are gathered before they are quite ripe, steeped in lime water and pickled in brine to remove disagreeable taste. We obtain olive oil from the olive.

The apple, the king of fruits, was in its original wild form, small in size, often very acid or bitter and indigestible, and not much like the splendid apple that we have with us nearly all the year round which is so agreeable to the palate. How ever strawberries happened to be named, whether they were strung on straw and sold originally thus in lands across the sea, or whether they are so called because they need a heavy mulch of straw to bring them to perfection, matters not. They are considered universally "The Queen of Berries", and have a most important place in the early summer diet. The chief quality of strawberries is the acid; they contain one of the strongest fruit acids found in nature. This national tonic is most beneficial to the still sluggish blood left by winter's temperature, and is appreciated and enjoyed by most people. One of the benefits of this natural acid is lost if the fruit is cooked. It is unquestionably a fruit to be eaten raw.

If cooked, however, it is best to make a syrup first, dropping the ber-

Use only three level teaspoonfuls for five cups

RED ROSE TEA "is good tea"

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ries in only at the last moment. This will preserve their shape, but most important, their flavor.

The cranberry, most persons regard as an adjunct to their Thanksgiving or Christmas dinner. Few think of it as a tonic provideed by Mother Nature to cleanse and purify the system during the long winter months, when few fresh fruits are available. From the Arctic regions, southward, this fruit is greatly valued and appreciated. During the nightless summer days the Scandanavian peasants make it their business to gather the red berries and string them in long chains for drying for the winter season.

In Russia the berry is used in wine making, while in many foreign countries it serves for making poultices which are applied externally for the purpose of removing inflammation. Few ships leave winter ports during the winter months that are not supplied with a goodly stock of these berries.

The cranberry should indeed be more widely used, not alone on account of its medicinal properties, but because of its culinary possibilities, which are more numerous than is generally supposed. Not only does it make exbellent sauces, puddings, pies, etc., but it may be used for jams, syrups and vinegar.

Fresh and cooked fruits hold an unique place in the dietary. Too often fruit is considered as simply a luxury for occasional rather than daily use, but the judicious use of both fresh and preserved fruits means better health and satisfaction for each member of the family. If possible, fruit should be served for breakfast. Each fruit has a season at which it is at its best and cheapest, then it is that the housewife, with an eye to future needs, is desirous of storing up a supply against a day of scarcity.

Two Years of Pain Then Quick Relief

John Weidman Used Dodd's Kidney Pills

And His Backache From Which he Had Long Suffered Was Cured Completely.

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"I was suffering from backache for two years," he says. "I could hardly stand up straight. I tried all kinds of medicines but none of them seemed to ge me relief. My back seemed to get worse all th time.

"Then I decided to try Dodd's Kidney Pills and sent for two boxes. I used one up and my back improved. I used four boxes in all. They cured me completely."

Mr. Weidman's lame back was caused by sick kidneys. That's why he got such prompt and permanent relief from Dodd's Kidney Pills. They act directly on the kidneys strengthening them and enabling them to do their full work of straining all the impurities out of the blood. Impurities in the blood are the seeds of disease. Dodd's Kidney Pills make good health by removing the seeds of disease.

FRUIT DESSERTS

(Janet McKenzie Hill)

Punch

The foundation of these ices is a fruit sherbet. To this is added a meringue and then frozen. This variety of ice is soft and eaten with a spoon from the glass in which it is served. A quart of punch is the quantity called for at a dinner of twelve covers.

Peach Sherbet from Fresh Fruit

(Italian Method)

1 quart peach pulp, 1 cup orange juice, juice 1 lemon, 1½ cups sugar.

Orange Sherbet with Syrup

Boil 1 pint (one pound) of sugar and one quart (one pound) of water twenty minutes. This should make about 2½ cups of syrup. To this syrup add one cup lemon juice or two cups orange, strawberry or peach pulp and juice. (If the orange, strawberry or peach pulp and juice are used to make the sherbet, add the juice of a lemon to each quart of the mixture to bring out the flavor.) Before freezing, add one teaspoonful of gelatine, softened in cold water and dissolved over hot water, or, after freezing fruit mixture sufficiently, beat into it a meringue made by beating one quarter cup of syrup (at the threaad degree) into the white of an egg beaten until foamy.

Coffee Sherbet

¾ cup fresh ground coffee, ½ cup cold water, white and crushed shell of 1 egg, 6 cups boiling water, 1½ cups suggar or 2¼ cups medium thin syrup, 2 teaspoonfuls granulated gelatine, (softened in cold water).

Mix ground coffee with egg and cold water, add boiling water and boil 3 minutes. Strain, add dissolved gelatine and strain again over the sugar or syrup. Cool and freeze. Serve with whipped cream sweetened and flavored.

Grape Sherbet

1 quart water, 1 pint sugar, 1 pint grape juice, juice of 2 lemons, 1 teaspoonful gelatine (softened in cold water).

Make syrup of sugar and water (similar to Orange Sherbet) add fruit juice. Before freezing add dissolved gelatine.

Fruit Cup

Let slices of peeled peaches, bits of prepared pineapple, stoned cherries, peeled plums, white grapes (seeded and skinned) and orange sections stand in their own juice and a medium thin syrup, surrounded by ice until thoroughly chilled. To serve, place in tall wine glasses and cover with a few spoonfuls of fruit sherbet flavored to taste.

EASY JELLY MAKING

It is as easy to make good jelly as it is to make good apple sauce, only that it takes a few moments longer. If you follow exactly the following rule, you can make jelly of a delicious fineness and color and taste. When you cook the fruit use just a little water because the water has to be cooked out; the more you put in the more pou will have to cook out. Use your over-ripe mussy fruit for jam, but use only the best for jelly.

Thirty-five Minute Jelly

With many fruits you can make jelly in 35 minutes from the time you put the fruit on the stove until you have the liquid in the glasses. It is easier to do it slower; let the fruit heat slowly then boil briskly until very soft. Hard boiling makes fruit go to pieces and that is what you want. The less time spent in cooking the fruit the better the flavor of the jelly. Now for the rule.

Grapes, Apples, Currants, Green Grapes, Greenish Plums, etc.

Fix for the jelly by having them clean. You need never peel anything for jelly as the peel will make the liquid "jell" better and it gives the jelly a better color and flavor. Stem grapes and currants. Bring to a boil and then boil very rapidly until soft; mash them if necessary to make the juice come out. Put the fruit in a bag made from a piece of cheese cloth, cut square and sewed up diagonally so as to form a cornucopia. Fasten the bag to some convenient place to drain, or if in a hurry squeeze the juice out. This gives you a good deal more jelly if quantity is what you are after, and it jellies quicker if it is pressed some, but the jelly will not be so clear, although it is extremely nice. When the juice has been pressed out or has been dripped out, measure it and put it over the fire. Measure as much sugar as you have juice and put this in the oven to heat. Let the juice come to a quick boil uncovered. Let it boil exactly 20 minutes then add the sugar and let it boil up. Do not cook it two minutes after it boils up again if the sugar is all melted by this time. Skim off any skum and pour into glasses and you are done. Manp times the jelly will get hard almost at once but in some cases it will not be real hard for some days after it has been made, and it is better so, for jelly that hardens at once is apt to get too solid when it is kept any length of time. Do not cover soft jelly with paraffin until it hardens; when it does pour melted paraffin over the top to prevent it getting any harder, and to prevent moulding. It can be lifted off when the jelly is wanted for use.

Many fruits will not jelly alone. With these a mild-flavored but sour apple should be used, half and half, as apples have as much jelly making properties as any known fruit.

You can use apples whole for jelly, simply washing them clean, but quinces should always have the stones removed for these possess a certain property that prevents anything from jellying. Without the stones this fruit jellies easily and makes one of the most delicious jelly known. The juice from cooked quince parings when added to apple juice will flavor the apple jelly richly. Peach juice and apple juice is a combination that makes delicious jelly. Also combinations of pineapple and apple, raspberry and currant and so on.

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HARVESTING RED CLOVER SEED

During a number of years the Dominion Experimental Farms have advocated the use of Canadian-grown red clover seed in preference to imported chiefly on the ground that the home-grown seed produces crops which are likely to be heavier than the crops grown from imported seed. As a result of this propaganda, and also because clover seed raising has been found to be a profitable business, the growing of red clover for seed is gaining in popularity although, as yet, it has not developed into the prominent business which it is bound to become if pursued rationally.

As is well known, the seed crop is practically always taken from the second crop of the season. Assuming that the second crop has been set aside for seed production, it should be harvested when most of the heads have turned brown and the stems of the plants begin to dry up. If the crop is cut before it has reached the said stage of development, the quality of the seed is apt to be inferior because a too large percentage of the seed will be immature and shrunken. As a consequence, the vitality will be low and the general appearance of the seed inferior. If, on the other hand, the crop is left standing too long, considerable losses may be suffered for the reason that, when the crop is overripe, the heads easily break off and shatter, especially if the harvesting is done in warm and dry weather. It is therefore important that the seed crop be harvested at the right time.

If you are not sure about when to cut your clover seed crop, pick out some average heads and rub them in the palm of your hand. If you are rubbing out firm and well-developed seed of a pronounced colour, then it is time to cut.

The seed crop may be cut either with a mower or with a binder, depending on circumstances. If the clover is only a foot high or less, the mower may be used; if it is more than a foot high, the binder may prove more satisfactory.

If the seed crop is being cut with a mower, it is most desirable to arrange to have the swath moved out from the uncut crop before a round is completed, because otherwise the horses will have to walk on the swath and, in doing so, will thresh out quantities of seed which of course will be lost. The moving out of the swath from the standing crop may be done by a clover buncher attachment or by two men with hand rakes following the mower.

If the seed crop is to be cut with a binder, the latter should be adjusted so that it will trip continuously. Furthermore, the side boards should be removed so that the clover is given a free course to the ground.

The crop should be left in loose windrows and may, when properly dried out, be gathered with the barley fork. It may be left in the stack or in the barn, as preferred, until it is convenient to thresh. The threshing should, if possible, take place in cold and dry weather.

AFTER HARVEST CULTIVATION

The effects of cultivation in general are threefold—the aeration of the soil, the conservation of moisture and the destruction of weeds.

The cycle of cultivation during the crop year consists of after harvest cultivation, fall ploughing and spring seed-bed preparation. Each of these three distinct phases must be practised systematically if the most suitable seed-bed condition are to be consistently maintained.

After harvest cultivation is the most economical of the means employed in the control of weeds.

Maximum horse eand engine power and improved labor-saving implements with a minimum of manual labor can be used to advantage. Efficient time-saving methods are factors in lowering the cost of production charges and in showing a profit.

After harvest cultivation should begin promptly on sod, stubble land and on pasture areas to be broken for grain; hoed crops such as potatoes and roots; all weed-infested land to be cropped and clay soils for all crops including corn for ensilage or seed purposes.

The cropping plan that cannot be arranged so that each grain crop is seeded down to grasses and clovers, and where two grain crops follow in succession, should provide for the after cultivation of stubble land.

Where this factor in weed control, soil improvement and moisture conservation is overlooked the result is low yields, impoverished and weed infested fields.

The methods employed in after harvest cultiviation are several. Pasture and sod land should be shallow ploughed, rolled or packed and disced as soon as possible after the crop of hay has been removed or the field has been pastured off. Discing should be continued until it is possible to operate a stiff-tooth cultivator without tearing up sods. The latter implement is very valuable used in the eradication of such weeds as "Quack grass" (agropyrum repens L.) where it is advisable to draw the root stalks to the surface.

Stubble land may be shallow ploughed, disced or cultivated, depending upon nature and condition of soil. Usually it is most economical and satisfactory to shallow plough and disc or cultivate, depending on conditions as outlined for sod land.

Successful after-harvest cultivation demands thoroughness and perserverance. These conditions must be fulfilled for encouraging results. Haphazard attempts are useless.

Before the freeze-up, all after-harvest cultivated land should be ridged or ploughed as deeply as the surface soil will allow.

W. L. GRAHAM,
Assistant Dom. Field Husbandman.

RIPENING TOMATOES IN A SHORT SEASON

(Experimental Farms Note)

In a comparativey short growing season, the tomato usually produces a large crop of green fruit but only in favorable summers is there much ripe fruit produced unless special measures are taken to hasten ripening. At Brandon Experimental Farm considerable success has been attained in forcing early maturing of tomatoes and the methods which have proven most successful may be of general interest.

Choice of variety.—Only the very earliest varieties should be used. The Earliana variety and strains developed from it, such as Alacrity and Sunnybrook, are the best to use. Earliness must be the one chief consideration and other points must be made secondary to it.

Location.—Tomatoes should be grown in a well sheltered garden where the wind is prevented from beating them about. They should be in the open sunlight; shade is fatal to success. If it is possible to make any choice in regard to soil, a sharp loam with considerabe proportion of sand is preferable to heavier soils.

Starting.—At Brandon the tomato seed is planted in seed boxes in a hot bed the first week of April. An earlier start can be made when seed is started in the house but more satisfactory results are attained in a hotbed. By starting at that time, it is possible to have planats in blossom by trans-

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SEPTEMBER 13, 15, 16, 17, 18, 19, 20

planting them. While in the hotbed the young plants are moved twice, first pricked out to single plants and then transplanted for more room as they grow larger.

Planting.—The timatoes are planted in the open about June 10th. Earlier than that it is too risky for frost in Manitboa, and while that date is not entirely free from frost risk, later planting would have too short a remaining season for the development required. The tomato plants should be given plenty of room. Putting rows four feet apart and plants two feet apart in the row is about the right spacing.

Staking.—The tomato plants should be staked upright and should be pruned to reduce the foilage. These operations probably have a greater effect in inducing early maturity than anything else, with the possible exception of variety.

The object is to allow the sun to shine more directly on the stems and fruit to check the production of excessive foilage and late blossoms. The plant should be trained to grow to one upright stem instead of numerous spreading branches. It should be fastened upright by driving a stake in beside it and tying to the stake. Or wires may be stretched along a row, though this method is not as satisfactory as staking. The growth should be prevented from becoming dense and bushy by pinching off the buds that appear in the axils of the branches. And in addition, part of the foilage may be pruned off. After a sufficient amount of fruit has been formed, later blossoms should be picked off so as to force the growth and maturity of the earlier fruit.—W. C. McKillican, Experimental Farm, Brandon, Man.

SUMMER FEEDING OF BREEDING SWINE

"Economical Production" should be the watchword of every producer whether it be of pork, beef, or mutton. With mill feeds at the prices prevailing today and the prospect of an increase in price of some of the more essential feeds it behooves the producer to study very carefully the feeding problem and adopt any method that will tend to give him the cheapest production.

Now all too often has the breeding herd on the average farm cost from one-third to one-half more than it should have to summer them, which of course, lessens the profit to be realized from such a herd. At the Experimental Farm it has ben shown that a herd of brood sows can be carried through the summer in a good, thriving condition and raise good litters on pasturage and not cost over half as much as though they had been housed all summer and fde on mill feeds. Moreover, the sows were more healthy and farrowed litters that were more erobust. Yes, and the mortality was much lower than among those sows kept inside all summer.

For "economical production" then, the brood sow should live out all summer in the open on uncontaminated soil, grazing on some succuent pasturage, thereby developing bone, muscle and constitution. The average grasses do not supply the most satisfactory pasture for swine, yet they are better than keeping them in the house. Among the most suitable are rape or a legume such as clover or alfafa if you can grow it successfully. Peas, oats and vetches also make excellent pasture for swine. Small fields of any of those named can be sown. Allow the swine to go in just for a short time at first until they become accustomed to it, leaving them a little longer each day until soon they may remain all the time and not eat any more than is sufficient for their needs. While a pig can barely subsist on grass alone, the legumes or rape will more than sustain life and so leave for produeing increase all the extra feed supplied. Therefore in addition to this succulent food there should be fed a small allowance of wheat middlings, bran, linseed oil meal or dairy product, thereby supplying the brood sow with the muscle and bone-forming mateerial that is essential. This should not constitute more than about one-third of the ration of concentrates. The remainder of the carbohydrates can be supplied with an addition of grain such as corn, oats or barley. The daily allowance of concentrates should be just sufficient to keep the sow in a good thriving condition, but not sufficient to make them satisfied. Otherwise they will not forage very much, but become lazy and the consequences are they will lie idle in a shady nook or under a tree.

No one can state definitely the amount to feed a pig. The feeder himself must be the judge. Study carefully the individual; regulate the extra feed given just to keep the animal thriving yet activiely forgaing to appease its hunger. In this way a herd of brood sows can be brought through the summer very cheaply and in a much healthier condition than in any other way.

Summer shelters for brood sows can be very cheaply made by building small cabins, say 10 x 12 on runners, so that the cabin can easily be moved from one field to another. For further information on this subject write to your nearest Experimental Farm and they will be only too pleased to give you what information they can that will be of assistance to you, and will also send you a sketch showing how these hog cabins may be constructed.

W. W. BAIRD,
Supt. Experimental Farm, Napan, N.S.

Were all the merits of red clover emblazoned in letters of gold on a arge canvas, it would fail to convey to the mind a full estimate of its true value.—Harlan.

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Ford Motor Company of Canada, Limited, Ford, Ont.

Hints for Motorists

ALBERT L. CLOUGH
Editor Motor Service Bureau Review of Reviews

THE "DEEP BREATHING" ENGINE

Undoubtedly the most important respect in which the light weight, high speed, high duty vehicle engine of today excels the heavy, slow speed engine, of low weight efficiency, produced a half dozen or so years ago is that the former is a "deep breathing engine," and the latter is not. The ideal engine, in this respect, is the one that can take into each cylinder, during each cycle, the full weight of mixture which the cylinder will hold at atmospheric pressure and temperature and do this no matter how fast it runs. No engine ever built will actually accomplish this, but many recent engines go a long ways toward doing it and run to very high speeds before their "breathing" begins to become "shallow," the weight of charge taken becomes much less than normal and pulling power markedly falls off. "Deep breathing" has been secured by reducing the resistance to the escape of the exhaust gases and to the entrance of the fresh gas, in other words, by adopting valves of extremely large area, lifted from their seats very quickly and to an adequate distance, by making use of intake and exhaust piping of liberal area, smooth interior surface and freedom from unnecessary bends and by making the path of the charge entering the cylinders and the exhaust leaving them, as direct as possible. Engines with four valves per cylinder are engines that are sought to be made "deep breathing" in order that the utmost output may be gotten out of a cylinder of given volume and weight. Hardly had designers succeeded in improving the respiratory qualities of engines, as above outlined, when new conditions arose to complicate the situation. Commercial gasoline become so involatile that only at a rather high temperature could it be retained in combustible mixture with air. But if, in order thus to secure effective vaporization, engines must be fed heated and considerably pre-expanded mixture, they cease to be "deep breathing engines" for they cease to inhale cylinderfuls of the utmost weight that the piston displacement ought to hold and they operate more like engines at great altitudes, with considerably reduced output. In a word, if we don't heat the mixture hot enough, the heavy "ends" of the fuel pass through unburned in the exhaust or deposit in the lubricating oil, and if we raise its temperature high enough to insure a dry mixture, the otuput of the engine is likely materially to be reduced, through the restriction of charge weight caused by pre-expansion.

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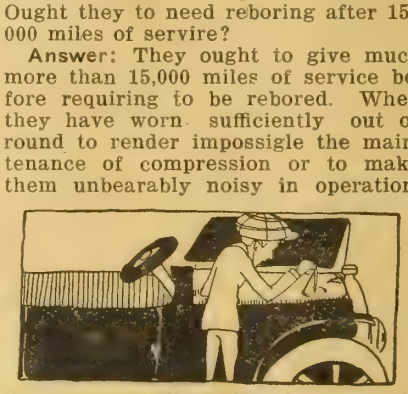
OVALIZATION OF CYLINDERRS

E. B. writes: The cylinderes of my engine are somewhat out of round in the lower half of the bore and the compression is poor. How much out of round ought they to be allowed to become, before they are rebored. Ought they to need reboring after 15,000 miles of servire?

Answer: They ought to give much more than 15,000 miles of service before requiring to be rebored. When they have worn sufficiently out or round to render impossigle the maintenance of compression or to make them unbearably noisy in operation,



they are usually rebored, but it is difficult to give any exact figures as to when to have this operation performed. Unless "piston slap" is known to be present to an annoying extent or insurable leakage past the pistons takes place, reboring may well be longer deferred.

CHOOSING SPARK-PLUGS

A. St. J. writes: The manufacturers of my car strongly advise their customers to use ——— spark-plugs, but I have heard it hinted that this is because the car manufacturer and the plug makers are connected in a business way. Is there any risk in using plugs of other makes?

Answer: We doubt whether any car manufacturer would advise the use of a spark-plug or any other accessory—

other than that capable of giving the best possible results—no matter what business relations might subsist between him and the accessory maker. There is no risk in using other makes of plugs, except that of obtaining less satisfactory ignition results. Very likely you will obtain practically as good results, with plugs of other brands than that recommended. We should, however, advise you to stick to plugs of about the same length and type as those furnished with your engine.

CHANGING OPERATOR'S POSITION

D. V. asks: Is it possible to change the steering of an old car from right hand into the modern lefthand arrangement?

Answer: We suppose that it would not prove impossible to make such a change as this, but it would be utterly impracticable to undertake it. You would have to build the car almost completely over and the expense would be enormous and out of all proportion to the results obtained.

HOW MUCH TO HEAT THE INTAKE

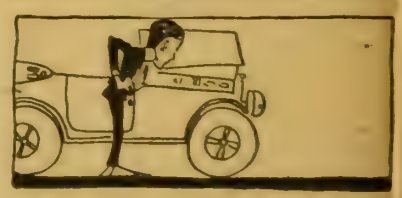
It Depends Upon Conditions And Too Much Is As Bad As Too Little

It is now generally taken for granted that, with fuel as involatile as it is at present, the intake piping of every engine requires some artificial heat applied to it—at times at least. Hot water is pretty well admitted to be too slow in action and insufficient as to temperature and exhaust gas is almost universally used to furnish heat to a "hot spot" or restricted portion of the intake system, to the carburetor mixing chamber or to the intake manifold as a whole. This is all very well, but it is evident that the supply of heat should vary with conditions of use. In extreme winter weather, with the carburetor air very cold, and the car most likely used for runs too short to establish maximum water temperature values, a more liberal supply of manifold heat should be furnished than during intense summer weather, when air is hot and average conditions of use favor early established and long continued maximum circulating water temperatures. The fact is that there should be provided means for conveniently regulating the amount of manifold heat furnished, in proportion to current requirements. In some designs the heat supply is arranged to be at a maximum when the engine is idling and is shut off automatically whenever the throttle is fully opened on the theory that pre-expansion will thus be avoided at times when full power is required. With most intake heating arrangements, however, there is no means of regulation, the heat being either entirely off or fully on. With many there is no means of shuting it off. Unfortunately too, there is no way by which the operator can decide whether he is obtaining too much or too little heat and it seems highly probably that automatic thermostatic control of mixture temperature will solve this problem, just as thermostatic control has solved the water temperature problem. A thermostat, subjected to the temperature of the mixture in the manifold, can be used to increase the heat supply whenever mixture temperature is below that found to be most generally advantageous and to reduce the heat supply when opposite conditions prevail. Until such a device comes into common use, the operator will have to use his best judgment erring, if at all, upon the side of excessive rather than deficient heat supply.

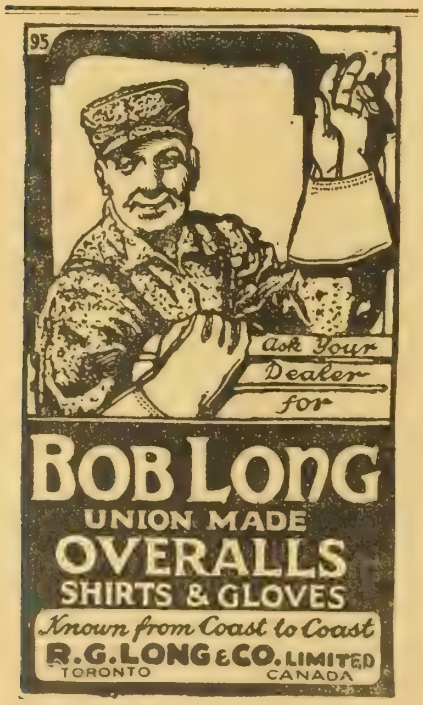
TWO CYLINDERS FAIL AT LOW SPEED

J. A. M. asks: Cylinders 5 and 6 of my engine do not work at low speed. I am quite sure that the trouble is in the carburetor. What adjustments should I make to overcome this? Should the mixture be thinner or richer?

Answer: It is not at all clear to us that this is a carburetor trouble. More



likely it is due to faulty manifold action or to air leaking into these two cylinders. If the former, it may be that more heat is required by the manifold to prevent the condensation of gasoline in it. If the latter, the most common points where air may leak in and dilute the charges are around the loose stems of inlet valves, at the connection of the inlet manifold branch with the intake port and



around spark-plugs. Are you sure that the spark-plug gaps are correctly adjusted? If your carburetor adjustment were much out of the way, the other four cylinders would be likely to miss. You can probably make 5 and 6 fire by enriching the mixture but this may make your engine very wasteful at all speeds. Ifr after running at low speed the plugs of 5 and 6 are found sooted, the mixture should be made leaner instead of richer.

"BRINGING UP" LOW BATTERY CELL

E. B. writes: I use a rectifier to charge my battery. Sometimes I find one cell is more discharged than the other two, according to the hydrometer test. How can such a cell be brought up to strength?

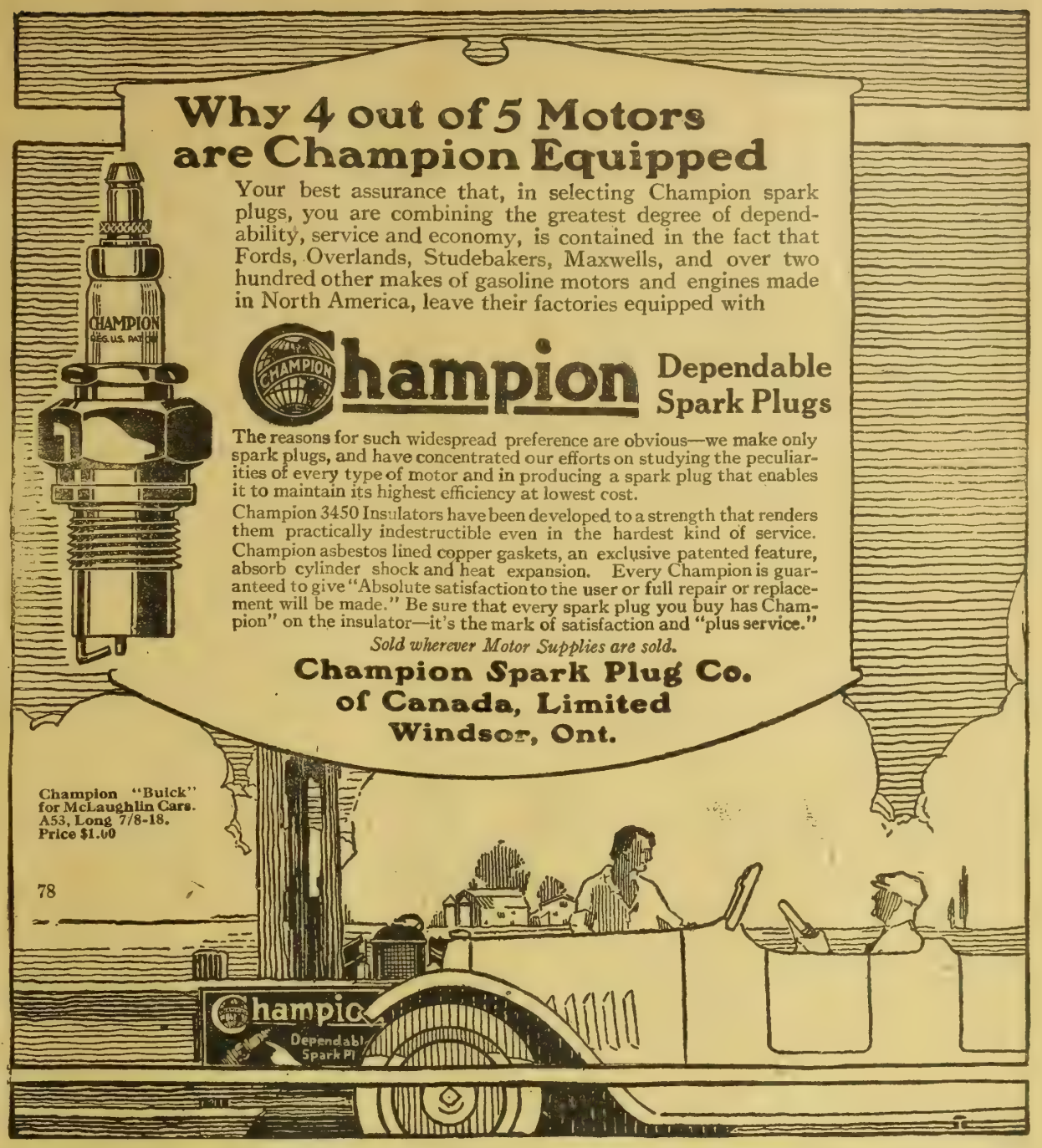
Answer: If you can make good contacts with the lead connecting lugs of the weak cell, you can charge it alone from your rectifier without charging the other cells, using extra resistance, in order to keep the current at its correct value. There is no

special harm, however, in charging the whole battery, at a low rate, until the low cell is brought up to standard, even though the other two cells are being overcharged. If a particular cell of the three tends habitually to become discharged, you may suspect internal short-circuiting and you may as well have it inspected and put into order as to be continually bothering with recharging it.

THE PASSING OF THE PLATINUM POINT

The Tungsten Point Has Generally Superseded It

Motorists have always been accustomed to think of the breaker points of ignition apparatus as composed of platinum or platinum iridium alloy, but even prior to the war, tungsten began to supersede these metals. During the war and up to the present time, interference with the Russian platinum supply and the taking over, by government agencies, of almost the entire available supply of this metal, have made platinum contact points very scarce and almost prohibitively expensive. Fortunately, tungsten has been available and is, at present, almost universally used in the battery ignition systems now so generally employed. In all probability we might as well say "good bye" to platinum points, for tungsten points serve remarkably well and possess no disadvantages that warrant the use of the more expensive metal. In fact, the melting point of tungsten is higher than that of platinum, making tungsten points more proof against fusing and sticking and they are also harder and more resistent to mechanical wear than ordinary platinum points. It has long been customary for motorists to give their platinum points considerable attention as to cleaning, smoothing and truing up, but the tendency is, with the harder and less expensive tungsten points, rather to let them take care of themselves and to renew them (together with the parts that carry them) when they wear away or become troublesome. Silver also has come to be largely used for the contact points of control devices, used in electrical systems, as a substitute for platinum, so that verp little of this precious metal is required in the battery systems as now installed. For magneto breaker points, platinum seems still to be almost essential.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Your best assurance that, in selecting Champion spark plugs, you are combining the greatest degree of dependability, service and economy, is contained in the fact that Fords, Overlands, Studebakers, Maxwells, and over two hundred other makes of gasoline motors and engines made in North America, leave their factories equipped with
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The reasons for such widespread preference are obvious—we make only spark plugs, and have concentrated our efforts on studying the peculiarities of every type of motor and in producing a spark plug that enables it to maintain its highest efficiency at lowest cost.
Champion 3450 Insulators have been developed to a strength that renders them practically indestructible even in the hardest kind of service. Champion asbestos lined copper gaskets, an exclusive patented feature, absorb cylinder shock and heat expansion. Every Champion is guaranteed to give "Absolute satisfaction to the user or full repair or replacement will be made." Be sure that every spark plug you buy has Champion" on the insulator—it's the mark of satisfaction and "plus service."
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INCREASED POWER FROM ENLARGING CYLINDER BORE

N. S. P. writes: I have an old car, the engine of which has worn its cylinders so much out of round that they require reboring and new pistons, and it has occurred to me that I might as well make the bore considerably ggreater, fit larger pistons and obtain quite a good deal more power. My mechanic says the cylinders are thick enough to give me 3-16-inch addition to the original 3 ¾-inch bore. Will

this increase give me proportionally more power without necessitating the maaking of anp other changes??

Answer: This change will increase the piston displacement about 10 per cent. and should increase the engine's pulling power, at low speed, in about the same ratio. We doubt, however, whether it will increase its maximum horsepower very materially for, at high speed, the valves, ports, intake piping and carburetor may not possess sufficient surplus capacity to take care of the increase in gas demand and the added weight of the larger piston (unless some light material is used) will tend to reduce the maximum speed at which the engine can safely be run. Enlarging the bore to this extent we regard as risky, unless you know that the metal in the cylinder walls is amply thick at all points.

PISTON CLEARANCE

E. .B. .asks: In fitting new pistons how much smaller should their diameter be than that of the cplinder bore?

Answer: Practice varies somewhat in this regard, but a common rule applying to cast iron pistons is to allow a clearance of two one thousandths of an inch at the head end and of one-half thousandth inch at the skirt end for each inch of piston diameter. For instance, a cast iron piston of four inches diameter should measure 0.008 inch at the head end and 0.002 inch at the skirt end less than the bore in which it is to run, these measurements being made with the parts cold.

HOW MOISTURE BOTHERS IGNITION APPARATUS

J. A. M. asks: In cold weather, does moisture sometimes collect on parts of the ignition system and cause trouble? If a car fails to start, where should one look for difficulties due to this cause?

Answer: Sometimes, when the air in a garage is damp and the temperature suddenly drops, moisture collects over all parts of a car stored therein. It may form upon the make and break and distributing mechanism of the ignition system, and may even freeze thereupon, causing the former device to work sluggishly or to fail to make contact and the latter device to short-

circuit. These parts of the system should be inspected, to see if they work properly and moisture wiped off them in case starting truobles are experienced in cold weather. Sparkplugs also sometimes become short-circuited by moisture and resuire to be wiped dry.

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Gentlemen—I have used MINARD'S LINIMENT on my vessel and in my family for years, and for the everyday ills and accidents of life I consider it has no equal. I would not start on a voyage without it, if it cost a dollar a bottle.

CAPT. F. R. DESJARDIN.
Schr. Storke, St. Andre, Kamouraska.

MARKETS.

CHARLOTTETOWN

Beef—Dessed carcass, ox 22c, cow 20c.
Veal—Dressed carcass, 16c.
Hogs—None offering.
Lamb—Dresser carcass, 30c.
Mutton—Dressed carcass, 24c.
Beef Hidees—40c to 45c per lb.
Sheep Skins—60c to 70c each.
Calf Skins—70c lb.
Potatoes—Practically off the market, nominal pricie $1.00 bushel.
Carrots—None except new crop in retail stores.
Turnips—None.
Parsnips—None.
Oats—90c to $1.00 per bushel.
Cornmeal—$4.75 per bag.
Bran $2.40 to $2.50 per bag.
Oatmeal—$5.50 to $6.00 per bag.
Middlings—$2.50 to $2.60 per bag.
Cotton Seed Meal—None.
Oil Cake—$4.50 to $4.75 per bag.
Buckwheat—None.
Ontario Flour—$12.25 per bbl. in wood.
Manitoba Flour—$12.50 per bbl. in wood.
Chickens—None except in retail way.
Fowl.—None except in retail way.
Turkeys—None.
Geese—Nono.
Butter, creamery—55c to 60c.
Butter, Dairy—42c to 45c.
Cheese—25c to 27c.
Eggs—44c to 45c per dozen.
Hay—Old pressed, $23.00 to $26.00 per ton.
Etraw—Old pressed, $12.00 to $13.00 per ton.
Crops on Prince Edward Island look very fine and prospects are good for a good harvest.

COUNTRY PRODUCE

Montreal, Aug. 23.—The receipts of eggs locally today were 1,355 cases, against 1,582 for the same day last week, 1,113 for same date a month ago and 1,165 for the same date a year ago.

The receipts continue to grade better, and the supply of better eggs is, in consequence, larger. The demand for the best eggs is active and prices continue firm. There is nothing new to note in the situation.

Strictly new laid eggs.....62c to 64c
Selected stock .....55c to 58c
No. 1 stock .....50c to 52c
No. 2 stock .....43c to 45c

The better arrival of ducklings on the local market has caused a decline of about 2c to 3c per pound in the price, and fresh killed ducklings are quoted today at 40c per pound. On the other hand, the quotation for Brome Lake ducklinigs is at 48c per lb., against 46c to 48c previously quoted. The high price of eggs is keeping the farmer from marketing his poultry, and fowls are not arriving on the market, with the result that the decreasing storage stock is causiing an advance in the price, today's quotations being at 45c per lb., against a previous quotation of 30c to 36c. Storage geese are not finding a big demand, and the price rules easy at 28c to 30c per lb., but turkeys are getting scarcer and, as there will not be any fresh killed turkeys on the market until some time in October, it looks as if they will soon be off the market. Today's prices are given at 50c to 53c per lb., according to quality, against 48c to 50 perviously quoted.

There is nothing new in the market for honey. Dealers are still holding back from buying the new crop, so that the main supply on the market continues to be last year's left-overs, which is selling at 20c per lb. for buckwheat and 25c per pound for white clover. Local firms are still of opinion that they should get the abundant new crop at 18c per lb., but the producers are asking generally 25c for buckwheat and 28c for white clover.

The arrivals of potatoes on the local market are erratic. Some days there is a plentiful supply and the price is weak accordingly, and on other days there is a scarcity and the price is firm accordingly. Today's quotations were at $2.75 per bag of 90 lbs. Only the Quebec potato is on the market. The New Brunswick crop is not expected for a while. The demand today was active.

DAIRY PRODUCE TRADE

Montreal, August 23.—The receipts locally today were 764 packages, against 695 for the same day last week, 5.669 for the corresponding date a month ago and 1,361 for the corresponding date a year ago.

The butter market was firm today at Monday's quotations, and, despite the high price, there appears to be as much butter consumed as during this time a year ago. Supplies are moving freely into the hands of consumers, and although local firms state that they see no reason for the high prices, yet so long as the price of cheese rules high, butter prices are likely to be maintained.

We quote wholesale jobbing prices as follows:

Pasteurized creamery...55½ to 56c
Finest creamery .....55c to 55½c
Fine creamery .....54¼c to 54½c
Finiest dairy .....49c to 50c

The receipts of cheese locally today were 20,280 packages, as compared with 22,315 for the same day last week, 10,600 for the corresponding date a month ago, and 6,622 for the corresponding date a year ago.

There is no change in the cheese situation. Local consumption demand is quiet, and the export demand is taking practically all the offerings.

The Canadian Cheese Export Committee will pay the following prices for all cheese delivered to warehouse, Montreal:

No. 1 grade, per lb.....25c
No. 2 grade, per lb.....24½c
No. 3 grade, per lb.....24c

New York, Aug. 21.—Butter, firm. Receipts, 8,353 tubs. Creamery, higher than extras, 56½ to 57c; creamery, extras, 92 score, 55¾c to 56c; firsts, 52½c to 55½c; packing stock, current make, No. 2, 46c . Cheese, irregular. Receipts, 1,339 boxes. State, whole milk, flats, current make, special, 30½c to 31c; do. average run, 29½c to 30c; State, wohle milk, twins, current make, specials, 31¼c to 31¾c; do. average run, 30c to 30¾c.

MILLFEED AND ROLLED OATS

Montreal, August 23.—As there is practically no millfeed on the market and as the demand is extremely heavy the price is firm. Millers are not doing a very large business owing to the scarcity of supplies mentioned. Quotations on bran, in 150-lb. bags, for mixed car lots, were $48 per ton, and for shorts, $50 per ton, the prices to include bags, delivered. Millers are quoting $6 per ton less, in mixed car lots, ex-tractk.

In the general rolled oats market there is a scarcity of supplies, although locally the supply on hand appears to be equal to the demand. The enquiry for rolled oats does not begin actively until much later in the year so that at the present time the market is not activefi although the high price of oats is keeping the price of rolled oats up. Today's sales were made at $4.95 to $5.25 in jute bags, and at $5 to $5.25 in cotton bags..

LIVE STOCK MARKETS

Toronto, August 23.—Following yesterday's big run of live stock at the Union Stock Yards, today's market was rather dull. However, there was a good demand. The cattle prices were steadier, although the buyers complain that there is too much common stuff. The inferior grades are now due to drop slightly on account of the reduced price of hides. The choice animals still bring good prices and choice milkers and springers are being sold at from $140 to $160. The sheep market also was firm, and the demand steady. Owing to the insistent pressure upon the part of the packers, hogs again took a considerable drop this morning. Yesterday hogs, fed and watered, were selling at $23.25 per cwt., today they only brought $22.25, a drop of $1 per cwt. Predictions are to the effect that this figure may even be lower. Receipts for the day at the Union stock yards were 606 cattle, 146 calves, 560 hogs and 892 sheep. Quotations:

Heavy steers, choice	$13.50	to	$14.50
Choice butcher	11.00	to	12.00
Do. medium	8.00	to	9.00
Do. common	7.00	to	7.75
Heifers, good to choice	11.50	to	13.00
Butcher's cows, choice	10.00	to	11.00
Do. medium	8.25	to	8.75
Bulls, choice heavy	10.00	to	11.00
Do. good	9.00	to	9.75
Do. light	8.00	to	9.00
Do. canners	5.00	to	5.75
Stockers, 800 to 900 lbs.	9.00	to	11.00
Do. liight mixed, 650 to 750 lbs.	7.50	to	8.00
Grass Cows	7.00	to	8.00
Milch cows	75.00	to	100.00
Spring lambs	16.50	to	17.50
Sheep, light	9.00	to	10.00
Yearlings, lambs	12.00	to	13.50
Heacy Sheep & bucks	8.00	to	8.50
Calves	18.00	to	22.00
Hogs, fed and watered, bid			22.25
Do. off cars			22.50
Do. f. o. b.			21.25
Do to the farmers			21.00

THE PROVISION MARKET

Montreal, August 23.—The undertone to the market for live and dressed hogs continues weak at the decline in prices noted yesterday, although no further reduction in prices has been made. The demand for both live and dressed hogs is slow. Sales were made yesterday at $22.50 to $23, per central for live selects, $27 for sows and $25 for stags.

There appears to be no diminution in the demand for all kinds of hog products, and supplies of hams and bacons, are moving rapidly into consumers' hands. The supply of bacon on hand is not keeping up with the demand, and prices rule firm accordingly. Sales of Windsor boneless bacon were made today at 56c per pound, and of breakfast at 50c per pound. Smoked hams are moving well, although not quite so actively as bacons. Small hams weighing from 8 to 10 lbs. sold today at 46c per lb.; medium hams weighing from 10 to 15 lbs. sold at 44c per lb., and heavyweights weighing up to 20 lbs. and over sold at 40c per lb.

There is no change in the market for barrel pork. Supplies on hand are quite ample to fill all reqirements and more. Quotations on short cut and on clear fat back are unchanged at $60 per barrel.

There is an active demand for sausages and sales in a wholesale jobbing way were made today at 27c per pound.

The supplies of lard on hand are not large considering the heavy demand, and there is no sign of weakness in the price, despite the fact that prices for hogs have declined about 2c per pound in the past couple of weeks. Sales of Canadian pure lard were made today at 36c per lb. in 20-lb. wood pails. American compound lard is selling at 27½c per pound in 20-lb. wood pails, and shortening at 31c in 20-lb. wood pails and at 32c to 34c in one-pound blocks.

The receipts of provisions today were 197 packages of meats, 1,115 packages of lard, and 209 live hogs.

Chicago, Aug. 21.—Provisions were unsettled, an early decline being followed by a rally on strong demand which moved prices above yesterday's close. Later fluctuations were in narrowest limits and the final figures were about the top point. Reports of the flating of a German loan to be spent for food products were credited with being a factor in the advance. Prices finished the day at 50c to $2 higher. Future quotations were:

	Open	High	Low	Close
Mess Pork per bbl.:—				
Sept	$41.50	$43.00	$41.50	$43.00
Oct.	39.59	40.50	39.00	40.00
Lard, per 100 lbs.:—				
Sept.	28.00	28.80	28.00	28.80
Oct.	27.70	28.50	27.70	28.50
Short ribs, per 100 lbs.:—				
Sept.	23.65	24.30	23.65	24.30

Cash prices closed—Pork nominal. Lard, $29.06. Ribs, $24 to $24.75.

THE BALED HAY MARKET

Montreal, August 23.—The arrivals of new crop on the local market are increasing, but as the demand is limited, there is not much business doing, local firms are still quoting $24 per ton, and opinions are that prices will hate to come a little lower if business of any account is to be done. There is still a fair supply of old crop hay on the market, for which dealers are asking $27 to $28 per ton for good No. 2 timothy; $25 for No. 3, and $22 to $23 for clover and clover mixed.

Winnipeg, August 21.—October oats closed 1½c higher, December 1⅝c higher, and May 1⅜c higher. October barley closed 1⅜c higher, and December 2¼c higher. October flax closed 2c lower.

Winnipeg's fluctuations in grain prices were as follows:

	Open	High	Low	Close
Barley—				
Oct.	$1.30	$1.31	$1.30	$1.31
Dec.	1.24	1.26	1.24	1.26
Oats—				
Oct.	0.84¾	0.86½	0.84¾	0.86½
Dec.	0.81⅜	0.82¾	0.81.3	0.82¾
May	0.84½	0.85¼	0.84 3	0.85¼
Flax				
Oct.	5.50	5.50	5.49	5.49

Cash prices closed:

Oats—No. 2 C.W., 91c; No. 3 C.W., 90c.; extra No. 1 feed, 90c; No. 1 feed, 89c; No. 2 feed, 87c.

Barley—No. 3 C.W., $1.38; No. 4 C.W., $1.33; rejected, $1.25.

Flax—No. 1 N.W.C.. ..6; No. 2 C.W. $5.09.

MENDING BAGS

A quick and very easy way to mend bags, and one which the men can do as easily as the women, is as follows: Turn the bag wrong side out, cut patches large enough to cover well the holes and weak spots. Make a medium thick paste of flour and water, spread on patch, and press with a hot iron. The patches will last as long as the bag and can be put on in less time than it takes to sew them.

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47 years of square dealing has earned us the confidence of trappers all over America, Canada and Alaska.
WE CHARGE NO COMMISSION
If fair, honest grading, prompt returns, and top market price are what you want, then you will make no mistake in shipping to the old reliable house of Summerfield.
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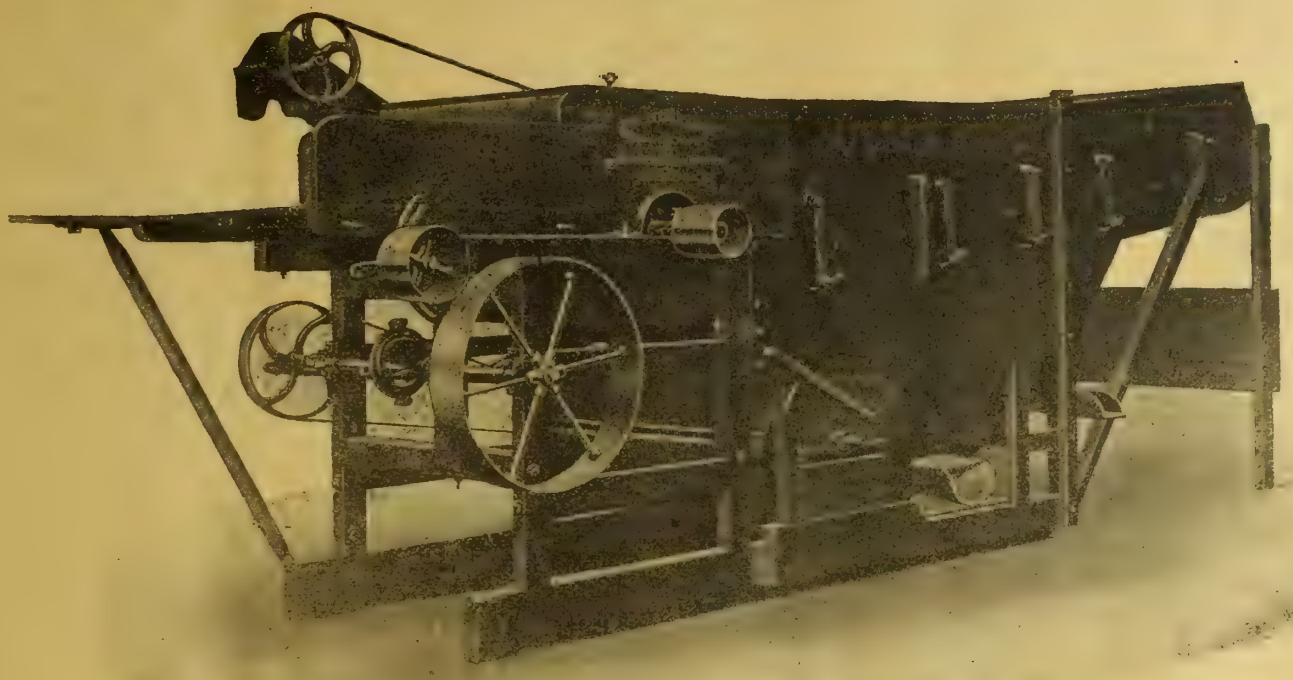
"THE PROVEN BEST"



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Every Young Farmer in the Maritime Provinces

SHOULD WRITE TO TRURO FOR A

FREE Copy of the Calendar of Agricultural College, Truro, N. S.

The College opens Nov. 4th next. Tuition is Free

A complete course is offered in all branches of Agriculture and the related sciences as well as English, Mathematics, etc.

An ordinary school education, plus farm experience qualifies for entrance. The age of former students varies from 16 to 35.

The course lasts two years at the conclusion of which students are awarded the Associate Diploma of the College. Graduates may complete their B.S.A. course at Guelph or MacDonald Colleges. Previous graduates have from year to year stood at the head of their classes at these institutions.

For further information write

M. CUMMING, Principal,
Truro, N. S.

COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep

Orders now booked for EWE and RAM LAMBS for fall delivery, several extra good animals for sale out of Ewes clipping 10 to 12 lbs. and sired by an Imported Ram weighing about 400 lbs. with a clip of 18 lbs.

BREED LEICESTERS the Sheep with THE HEAVY FLEECE.

G. C. Cossar, Proprietor. J. Meiklejohn, Agent.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm
OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired by Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

Clearing Sale of Shorthorn Cattle

Am offering for sale my herd of pure bred registered Shorthorn cattle. These cattle range in age from 7 years to 3 years, or a little less, with one bull calf two weeks old, and are all fine in type and color.

I have also exceptionally good grade cattle of various ages for sale. All will be sold at a reasonable price and offer an unusual opportunity to anyone desiring to start a herd of choice stock or to renew an old herd.

J. E. HETHERINGTON, - Codys, N. B.

FOR SALE !

Two excellent Guernsey bulls from good stock, will be sold reasonable if taken at once.

SARAH E. M. SMITH,
Woodwards Cove, Grand Manan, N. B.

FIRSHADE FARM
DUAL PURPOSE SHORTHORNS

Present Offering:—Two Bull Calves

No. 1.—Son of Daisy Lodge, R. O. P. 11,638 lbs. milk, 480 lbs. fat. This cow led the four-year-old class in the Canadian Record of Performance.

No. 2.—Son of Queen Charlotte. She as a two-year-old has a R. O. P. of 7224 lbs. milk, 316 lbs. fat. This cow stands eighth in milk and sixth in fat production in the two-year old class.

The sire of these calves is Nivelle, whose dam as a two-year-old has a R. O. P. of 5496 lbs. of milk, 240 lbs. fat in 295 days.

P. R. L. FAIRWEATHER, Rothesay, N.B

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

Bloomfield Stock Farm

Ayrshire and Guernsey Cattle—Shropshire Sheep

We are offering males and females, all ages. Have some good cows to freshen soon. Am booking orders for ram lambs for fall delivery. Write or phone for prices and description.

J. ROBIE MacDONALD,
Shubenacadie, - - Nova Scotia
Successor to J. MacDonald & Son

Auto Tires $17.50

Fine non-skid tire for small cars, size 30 x 3½, fully guaranteed for 3500 miles

The Maritime Farmer begs to announce a substantial reduction in the price of non-skid tires for small cars, Fords, Chevrolets, Maxwells, etc. They are FIRSTS, fully guaranteed and we will sell them to you, provided you are a paid-up subscriber to the Maritime Farmer for $17.50 f. o. b. Sussex. Plain tires for $16.25, fully guaranteed for above mileage. Tubes for same size tire $2.90. These goods are all A1 stock and are made by a well known tire house. Of course these prices are for spot cash with order. The Maritime Farmer was able to take advantage of the recent break in the market and its large buying capacity to get you the benefit of this substantial cut in price. IT'S THE BEST BUY IN CANADA Today. Write the Auto Department, Maritime Farmer, Sussex, N. B.

A VERY VALUABLE BOOK

The Veterinarian, by Charles J. Korinck, V. S., is a work on the afflictions of horses, cattle, sheep, swine, poultry, etc., which every farmer should have in his home. The story of how treatment can best be administered is told in simple every-day English that any person can understand. The methods suggested by Prof. Korinek are simple and easily followed. The book will cost you seventy-five cents, postage paid. It may be the means of saving you as many dollars in the near future. How many men are there who meet trouble by writing to the Maritime Farmer or some other paper for information which will be found in the Veterinarian? It is strongly bound in cloth, has serviceable illustrations and is well indexed. Seventy-five cents will bring it to you.

HOLLOW POTATOES

Many of my potatoes last year were hollow, and, therefore, objectionable from the cooking standpoint, especially for baking. Is there anything that can be done during the growing season to prevent potatoes from becoming hollow?—J. B. S.

Ans.—Cavities in potatoes are caused by rapid growth. The cells towards the outside of the tuber, being young, are capable of rapid growth and division. Those toward the centre having attained their full growth are not capable of such development. The stress caused by rapid growth of the potato tends, therefore, to rupture the tuber at the centre. This is the reason why it is always the largest and finest potatoes which are found to be hollow. The injury is not so serious, however, as it would be if it affected the outside. The only way to prevent it is to discourage rapid growth, but this would interfere with the yield of the crop; it cannot be resorted to without loss.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

FOR SALE !

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st, 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and st in grade cow, competing against all breeds at our late show at Charlottetown. with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

Present offering: one bull two years old, two aged seventeen months. Also a number of younger ones. Females any age. This herd is bred for production having the combined strain of "Jean Armour" and "White Heather"

J. FRANK ROACH, Proprietor,
Phone 111. - - - - Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.

We have young bulls for sale whose two nearest dams (both Canadian champions) average as high as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows: and one ready for service from a 41-lb. sire and an 18,000-lb. two-year-old dam. Send for our BOOK OF BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) - JEFFERSON, ONT

BELLEVUE STOCK FARM
Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, HAMMOND RIVER, N. B.

We are offering for sale calves of both sexes, sired by Dutchland Pieterje Count, a bull of splendid size and type, whose four nearest dams have records averaging 28.61 pounds of butter in seven days. His dam is a daughter of Colantha Johanna Lad, who has 101 A. R. O. daughters, 4 over 32 lbs., 7 over 30 lbs., three of them world's records for 365 days. If you want something choice, come and see these calves or write for further particulars.

We will also book orders for young Yorkshire pigs for next spring's delivery.

WM. S. HARDING, Prop.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

We have sold 13 head in the last few weeks but there are some dandy good ones left yet. Special offering—2 heifer calves and several bull calves, sired by Prince Colantha's Canary B. whose four nearest dams average 32.84 lbs. butter in 7 days; 105 lbs. milk in one day. These are beauties. A couple of yearlings and two-year-old heifers, bred to Prince, due in the fall. Several young cows and heifers milking, due to calve from August to December. We have a couple o bull calves fit to head the best herds in the provinces. Come and see them. We would be Pleased to meet you at Truro if notified.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

BULL'S CREEK FARM

R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lbs. butter each in seven days. These cows have in turn been bred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkable combination of breeding and will sell a heifer calf or two. Get your orders in quick, they won't be here long.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

FOR SALE !

Ayrshire bulls, eleven to fourteen months. R. O. P. ancestors and best of breeding.

A. A. H. MARGISON
EAST CENTREVILLE - - N. B.

Five Ayrshire Bulls for Sale !

From good milking strain. All fit for service.

Prescott Blanchard,
Truro - Nova Scotia

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

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BARN VENTILATION

By L. J. Smith, B. S., Professor of Agricultural Engineering, Manitoba Agricultural College, Winnipeg, Canada

In newly settled districts, the farmer must of necessity erect inexpensive and more or less temporary buildings to shelter his stock. As he becomes better settled in his new surroundings and prospers, the natural step is that of securing better buildings, not only for the sake of his stock, but for his own convenience and comfort while caring for them.

There was little need for a scientific plan of ventilation for the temporary barn. Loosely constructed and smaller in size than our modern barns, these buildings have enough air leakage to supply the stock with fresh air—often in windy weather far too much ventilation for man or beast. With the advent of the modern well-built barn, stock are warmly housed. It is found, however, that more than a warm barn is necessary for the maintenance of the health of those animals that are shut in for at least the greater portion of the winter season. Three important items must not be overlooked, namely: good lighting, a sanitary interior, and some means of providing ample ventilation under all conditions, in still and mild winter weather as well as when it is cold and windy.

Sanitary Considerations in Barn Building

Abundance of light and ventilation must be had, even at the expense of heat, in the stable. Windows should be fairly small and uniformly distributed, rather than very large and few in number. A very good practice is to have the studding on two foot centres, and to put narrow windows between the studs. They should be located high enough to let the sunlight well into the centre of the barn, Any cold air leaking in around the windows under these conditions, will have time to mix with the warmer air at the top of the stable before reaching the stock. Putting windows in high also reduces glass breakage to a minimum. There should be one square foot of glass to every twenty or twenty-five square feet of floor space. The glass should be cleaned at least twice a year, in order not to cut off sunlight. This does not mean a painstaking washing and drying of windows, such as is done by the housewife, but merely a washing to get off the dust and cobwebs. No modern barn should be without storm windows.

The interior walls should be smooth so as to be easily brushed down, and should be whitewashed both for sanitary purposes and to prevent absorption of light. In many Manitoba barns the stables are whitewashed twice a year. The stable floors should be of concrete to afford easy cleaning and cleansing, and to prevent absorption of liquids.

Why Ventilate Barns

Barn ventilation is necessary for various reasons:—to remove dust in the air, impurities from the skin, vapors and odors arising from the manures, to carry off the carbonic acid gas breathed from the lungs of the animals, and to replace it with pure outside air; to keep down the amount of moisture in the air in the barn; to keep the air in circulation; to regulate the temperature of the stable; to remove germs; and to prevent the rotting of wood, and the rapid deterioration of stable fittings and paint. If one animal in a stable has tuberculosis, the chances are strongly in favor of other animals contracting the disease unless the stable be flooded with sunlight, and kept well cleaned, and unless the air is changed frequently.

It is scarcely necessary in these enlightened days to spend time defending the principle of ventilation; but it might be of interest to discuss briefly the results of investigations along this important line.

Experiments have shown that animals can not only live, but apparently thrive, in closed spaces, affording none but accidental ventilation. These experiments, however, have not been conducted long enough to prove the point. A few month's test is not sufficient foundation for a conclusion as to what is the proper foundation for a conclusion as to what is the proper amount of ventilation for all the winter months of the life of the stock. It is possible for men and beasts to live for a time in insanitary conditions and suffer at the time no apparent ill effects; but continued insantary conditions are sure eventually to lower vitality or to induce disease.

At low temperatures it is possible with no immediate ill effects to breathe over and over the same supply of air until the proportion of the carbonic acid gas in the air is very high. Much of the ill effect experienced in badly ventilated buildings is due. not so much to the rebreathing of the air, as to lack of circulation of air and the high temperatures which make it difficult for the body to maintain its normal temperature. As an example, an electric fan, running in a warm close room, will almost at once relieve the occupants of physical discomfort.

Effects of Poor Ventilation Slow Acting

From the above it might seen that under conditions where the stock has been tested and found in good health, the same air might be breathed for a time without affecting the health of the stock, so long as the temperature of the stable was low. But it should be borne in mind that the effects of poor ventilation are notoriously slow acting. Even tuberculosis may exist without any outward sign. It is better not to take the risk.

Disease Resistance Affected

There is, however, another side to the question of restriction of ventilation. It has been found by tests that while animals might not suffer at the time in appetite and general good health, through lack of fresh air, still restricted ventilation breaks down the capacity of the animals for successfully resisting the disease germs with which they must come in contact from time to time.

In this conclusion, if the tests have been sufficiently extensive to establish the fact, we have without doubt the strongest argument in favor of thorough ventilation. The question should be, not how little ventilation is necessary, but how much fresh air can be given. It is better to have fresh dry air an da cool stable, than a warm stable with moist warm air and dripping walls and ceilings.

Tuberculosis and Ventilation

We know tuberculosis to be a house disease, and we know that those whose life is in the open are least subject to it. We also know that this disease, if taken in hand sufficiently early, can be checked by open air treatment. We know that tuberculosis among animals is a domestic disease from which the wild animals are exempt.

With this knowledge, to neglect barn ventliation is not wise. Indeed, if stock raising is to be successfully carried on in the North-West in the coming years, more attention will have to be given to the problem of ventilation. The time may soon come when the sanitary conditions of barns will be made a matter for government regulation.

Limitations of a Ventilation System

No natural system of ventilation has yet been devised or probably ever will be devised, that will work entirely automatically. Even the best systems of stable ventilation require some attention. Nor is it possible to give the animals in the average barn all the air that is considered necessary, and still keep the inside temperature above freezing durinig the coldest parts of Manitoba's winter months. Still, even during the two coldest months, the temperature rises sufficiently high so that a full amount of ventilation can be had part of the time, and a fair amount nearly all the time.

How a Natural Ventliation System Operates

All natural systems of ventliation work on the same principle. Warm air rises. Out-take flues are provided, passing up through the loft of the barn; the warm air rises through the flues and equal volumes of colder air are drawn into the barn through intake flues arranged along the sides of the stable, and by leakage around the doors and windows, and, in many cases, through the walls of the stable. The principle of ventilation is the same as the draft in the ordinary stove or furnace. In barn ventilation, the animals furnish the heat necessary to caause the circulation of the air.

Factors to be Considered in Regulating Barn Ventilation

The efficiency of the system of ventilation adopted is dependent upon several factors, namely, the position and size of in-take and out-take flues, the smoothness of the inside of the out-take flues and the number of bends in the same, the rate at which the wind is blowing, and the difference in temperature between the inside and outside of the barn. The higher the out-take flues, the greater the draft. Their size must be figured so as to ensure ventilation under most adverse natural conditions. In quiet weather, and in the mild weather at the beginning and end of winter, the air moves at its slowest rate up the outtake flues. The difference in temperature is secured by well built walls, close-fitting doors and windows, and the barn space being well filled with stock.

Flue Construction

The intake and out-take flues must have means whereby the openings may be restricted in extremely cold or windy weather. The out-take flues must be air-tight and smooth inside, and should have as few bends as possible. They should be put in independently of the walls of the barn. In order to work satisfactorily, they must be constructed of two thicknesses of good, dry inch lumber, tongued and grooved, or shiplap, with good building paper between. The tops of the flues must end at least level with the peak of the roof to prevent the wind blowing down the flue and stopping circulation.

A common type of out-take flue construction is where 2x2 inch corner posts are used with the boards nailed crosswise. If desired, a dead air space could be had by nailing one thickness of lumber inside the 2x2's in which case the construction would be a little more difficult. The outside thickness of the flue may be nailed on lengthwise, which will save both in material and time.

Another type of flue construction is where the boards are nailed lengthwise with the flue, thus giving a smoother inner surface.

Out-take flues should not be made too small nor too large. Fifteen to twenty inches square are safe limits;

(ontinued on page 837)

The Chemical Fertilizer Outlook for 1920

Goods will be Cheaper---N. B. will be Looked After by Agricultural Societies United

What will be the price of chemical fertilizers in 1920? It is a question which is being often asked these days. The answer undoubtedly is that all classes of goods will be much cheaper. Just what the price cuts will be the near future should determine. There is this to say of the situation however, that there have been no prices fixed as yet and the market is in a very unsettled condittion. The next few weeks should see definite announcement as to the prices to rule for next season. As usual, the New Brunswick Agricultural Societies United will buy for Agiruclural Societies who desire to obtain chemicals at cost. None of the difficulties which prevailed in 1919 will have to be met. Then phosphates and ammonias had to be bought at different points and this resulted in no end of confusion. In 1920, the N. B. Agriclutural Societies will be able to ship acid phosphate, nitrates, sulphate of ammonia, tankage, potash, etc. from a central point, in car lots, so that it will be very much easier and cheaper for agricultural societies to look after their requirements.

In connection with the fertilizer situation it might be well to mention that the New Brunswick department of agriculture has decided to install several lime stone crushers at central distributing points in the province. This should prove a great boon to the farmers of this province. It is known that the soil of New Brunswick is deficient in lime. Many farmers have been meeting this call by the purchase of basic slag. In future basic slag can be dispensed with where lime stone is available. It is estimated that ground lime stone will be delivered by the department for five dollars per ton or less. This means that every farmer in the province can supply his own basic slag at prices away below those now ruling for that commodity. The acid phosphate can be procured through the Agricultural Societies United in any combination desired. The lime acts as a tonic in the soil and makes available the natural supply of phosphoric acid. Where this is not sufficient, the shortage can be made up by using acid phosphates to any percentage desired. This method will result in a saving of thousands of dollars to agriculturalists in all parts of the province, and the results which will doubtless follow the use of lime stone will surprise those enterprising enough to take advantage of the new order of things.

It is not too early to begin thinking of your next year's supply of chemicals. Societies should get together and ascertain their requirements. One thing that should prove encouraging is the certainty of a big drop in prices, as compared with last year. As to the saving to be made by purchasing through the Agricultural Societies United, there is no question but that thousands and tens of thousands of dollars have been saved by the co-operative method.

For Nova Scotia, the Maritime Farmer will undertake to supply societies with unmixed chemicals or mixed goods, which will make their old fertilizer bills look big. We intend giving farmers in the sister provinces a chance to test out co-operative buying of fertilizers and will mail quotations to every agricultural society in Nova Scotia, within the next month or two. Be on the lookout for them. Ask your secretary about them and if he says they have not reached him, drop us a line and we will tell you how to buy fertilizers and save yourself many dollars. There will be no dealers commision to pay. Unite with your neighbor and get a car lot. Any of the progressive banks of the Maritime Provinces will help you finance the venture. If your banker will not do so, write us and we may have a suggestion to offer. Bankers who are not red hot after farmers business these days are DEAD ONES. Co-operation has been proved in so many directions that it is well to wake up and realize how much it means TO YOU. BEFORE YOU BUY YOUR FERTILIZERS FOR 1920, write the N. B. Agricultural Societies United, Sussex, N. B., or if you live in Nova Soctia, write THE MARITIME FARMER.

Gleanings From Nova Scotia Agricultural College

SCHOOL CHILDREN'S FAIR

Some six years ago the Local Council of Women at Truro, organized an agricultural committee for the purpose of stimulating the interest of children in the growing of flowers and vegetables. The method followed was the holding of a Flower and Vegetable show in the early autumn of each year. Small prizes were offered in a considerable variety of lines, so that almost any garden product that is useful or beautiful might find a place among the exhibits.

At first a dozen or so of children brought flowers and vegetables, the latter often dirty and of uneven size. The movement has grown wonderfully both in the quantity and quality of exhibits, and in popularity as one of the events of the year for the whole neighbourhood. The entries this year number 41 in flowers, 33 in Domestic science and 114 in vegetables. 18 schools are exhibiting, representing a considerable portion of Colchester Co., to which the show is confined.

A magnificent exhibit occupies a place of honour this year from the Maritime Home for Girls, an institution which is well known among the protestant churches of these provinces. This exhibit contains splendid samples of vegetables, flowers, needlework, canned foods and baking. No better testimony could be furnished to the breadth and efficiency of the training in that institution.

The Fair is held in the Agricultural College buildings, and its success is in no small measure due to the tireless efforts of the ladies of Bible Hill, who are more or less associated with the staff. Nothing more wholesome or useful could be done for the school children than this interesting and beautiful competition in gardening, and many of the exhibits would look very creditable in the stalls of our largest agricultural shows.

A SILO FOR 1920

It is not too early to begin making plans, gathering information, and setting one's jaws for a silo next year. The argument for such an institution is so obvious that we need not repeat it again. The two practical steps the average farmer can take to meet effectively the scarcity and high prices in mill feeds are, 1. Improve his pastures. 2. Build a silo and lay in silage. The first largely meets the summer need, the second, the necessities of wintr feeding. Our best silage crop in these parts, the O.V.P. mixture, will yield ten to twelve tons to the acre on good ground, and it makes a highly nutritious food for dairy cows.

The following is an outline of the materials needed and a general estimate of the cost of building a silo which will hold upwards of twenty tons of silage, 23'x12', built of concrete and staves.

6' concrete, 12" thick, cement 8 bbls.	16.00
Staves, 17'x6"x2"	17.00
Dressing Staves	3.00
Roof Lumber and roofing	10.00
Hoops	10.50
Spikes	1.00
Labor on concrete	7.50
Carpenter work	10.00
Other labor	13.00
8 loads gravel, 2 loads filler	10.00
Two coats tar, 10% kerosene	8.00
Total cost	$106.00

It will be remembered, of course, that prices vary in different localities, and fluctuate from time to time, but this will furnish a working basis for calculation.

In erecting a stave silo put up first stave, plumb it all ways, stay it firmly, then bore each stave through about one fooot from each end and all in the middle, with variation enough to avoid the spikes. Bore first with ¼" bit, then half way through with ½" bit. Use 6" spikes and drive home, the heads going half way through each stave. Place three staves together on the ground and spike together so as to form one piece 6"x6". Place two of these pieces so made opposite each other, taking care not to have them come where the doors are to be. Place the edges of these flush with the inside of staves, then they will show 4" standing out from the staves. These will form uprights to put the hoops through at intervals of about 4 feet, the three hoops nearest the bottom being not more than 2 feet apart, because o fthe greater pressure at the bottom. The first hoop should be ⅝ or ¾", the others ½" iron. When coming to doorways put saw cut in one stave and bottom of each doorway, then, when hoops are tightened up place a band across each end of door on outside, boltng these to door with ¼" bolts, one in each stave. Then proceed to cut out doors, bevelling them so that when they are put in from the inside they will be nearly airtight.

If the lower portion of silo is concrete the staves should stand one inch back from the inside edge of concrete. In this case eyebolts of ¾" iron round or its equivalent flat. They should be set in the concrete with lower end bent and a foot down, and with the eye about four inches above the surface, large enough to take a ½" bolt. These eyebolts should stand back three inches from inside edge of concrete so as to stand close to stave to which they are bolted. When putting in spikes care must be taken to avoid the saw cuts for doors.

RURAL PLANNING AND DEVELOPMENT

The last volume that has reached us from the Canadian Commission of Conservation is probably the most valuable yet issued, both because it was written in the midst of the war-consciousness, with a remarkable appreciation of the tendencies which have so rapidly developed since the war closed, and because its main interest is not in money but in men. A sentence or two from the introductory chapter inidicate the main lines of the author's investigation and interest. "Economic loss may be greater as a aresult of leaving some things undone than as a result of doing other thngs extravagantly. . . We share the growing consciousness, which is everywhere apparent, that national prosperity depends on the charcter stability, freedom and efficiency of the human resources of a nation, rather than on the amount of its exports or imports, or the gold it may have to its credit at a given time."

While no part of the volume smacks of the paternalism which officials are too apt to offer as the cure-all, the author insists that there is great need of supervision, not only of the placing of population on the land, but also of the rudiments of sanitation and of general health conditions. He points out that poverty, hoplesseness and degeneracy have too often succeeded the settlement of land which is naturally unfit for cultivation. So long as the speculator is the central figure in the land situation we are in for abuses that are far more reaching than the casual observer can imagine.

Altogether this is a noteworthy book, and deserves careful study. The author, Thomas Adams, is a man of wide experience both in the old country and on this side. He has gathered his data from a broad field. The style is terse and direct, and the volume very well illustrated, not in a light and haphazard fashion, but with a strong array of facts, and with the penetration of an earnest and keen mind.

UNITED FAMERS GETTING IN LINE FOR FEDERAL ELECTIONS

At a recent convention of the United Farmers of New Brunswick resident in Carleton and Victoria Counties, T. W. Caldwell, of Florenceville, was selected to carry the Farmers banner at the next Federal election for the Carleton Victoria riding.

Mr. Caldwell is the President of the United Farmers of New Brunswick, a public spirited farmer of good repute, appearance and address—the type of man any body of men should be proud to support and the kind of man the Maritime Farmer would like to see elected in every farming constituency in the Maritime Provinces.

The Maritime Farmer is not a political paper in character but we would like to see a clean, intelligent farmer nominated and elected by each and every electoral district in Canada, where farming is the main and most promiment industry. Too long have constituencies of this kind been represented by devotees of some other calling.

The farmers of Canada are coming into their own. They are fast learning to realize the magnitude and importance of their profession. Too long, it could be truthfully said, "farmers will not stick together." We trust that when a farmer candidate is in the field in future elections no matter what his political creed may be, that it will be said when the votes are counted and the results published. "the farmers stuck together and elected their man."

New Brunswick Fruit Growers' Orchard Field Day

That New Brunswick can grow certain varieties of apples that are second to none of their kind in all Canada, has been and is being repeatedly demonstrated by not a few of the live orchardists of the province. Scattered here and there along the St. John River Valley and in other favored parts of the province, are orchards that are as neatly kept and as skillfully tended as the best in any fruit growing section of Canada. The owners and keepers of these orchards have not only been working in their own best interests, but have also helped other men throughout the province who have joined with them in the organization of the New Brunswick Fruit Growers' Association, and who pay attention and strive to practice some of the modern ideas in fruit growing that are frequently propounded by the more progressive and successful members, and the speakers procured to lecture on the various problems that confront the orchardist.

A. G. Turney, the provincial horticulturist has been untiring in his efforts to place fruit growing in New Brunswick on the plane which it should rightly occupy. The respective fruit growers recognized Mr. Turney's ability to help their cause and they have from the time of his appointment reposed well merited confidence in his advice. They made him secretary of their Association and in that capacity the various members of the Association has in many ways profited by the various activities which Mr. Turney has from time to time introduced as part of the working machinery of the organization.

Hon. J. F. Tweddale, the Minister for Agriculture has also very materially assisted the Association by listing it on the schedule for annual grants of money that will help the officers of the Association to put over the top some plans for future and more rapid development.

One of the features introduced this year was an Orchard Field Day, which was observed on August 28th. In addition to the regular members of the Association, the various members of the staff of the Department of Agriculture, the Boards of Trade of Fredericton and St. John, and representatives of the press were invited to be present at the proceedings, which included an auto trip to the best orchards in York, Sunbury and Queens Counties, and a visit to the Experimental Farm, Fredericton.

About one hundred fruit growers and their interested friends enjoyed the outing and profited by what they saw in and heard in the various orchards which they visited. Various growers have various ideas as to the best methods to pursue in orchard management. One may excel along one particular line, another may excel along another line. The idea of the Field Day was to give all hands a chance to see the best ideas of the respective growers and help them to form ideals towards which they may aim in their own every day orchard practice.

The St. John Board of Trade conducts an orchard at Brown's Flats on the St. John River, which is coming along nicely, and consequently the Board is very much interested in fruit growing and sent a strong delegation to the Field Day proceedings.

At the Tamilson orchards at Nashwaaksis, York County, Mr. A. C. Parker gave a demonstration of apple packing and Inspector Potts of St. John outlined the requirements of the fruit marks act and also supplied information as to grading.

An appetizing luncheon was served at noon on the Experimental Farm, after which the young orchard was inspected unde rthe guidance of Superintendent W. W. Hubbard. The party called upon T. H. Estabrooks and spent a pleasant few minutes looking over his beautiful farm near Oromocto. They then proceeded to Burton in Sunbury county, where the holdings of the St. John Valley Fruit and Land Company were inspected. There they saw thousands of young trees in the nursery and the manager, Mr. Fillmore, explained the process of budgrafting. The trees in this orchard are well laden with fruit. R. D. W. Hubbard and others have very promising orchards at Burton, but owing to lack of time the party was unable to visit them. The next visit was pai dto the orchards of W. P. and F. L. Fox and of the Cossar Farm below Gagetown, Queens County.

The Fox orchard is in splendid shape with an excellent crop. Here Mr. Geo. E. Sanders of the Dominion Entomological Division gave an instructive talk on Orchard Spraying. Sample trees were shown on which spraying tests had been conducted. The proprietors of the Fox orchards are now busily engaged in erecting a modern packing house for handling their fruit. The final visit was to the Cossar Farm, which proved a source of great pleasure. From this point the party disbanded. The St. John delegation headed for St. John, while the Sunbury, York and other delegates who had come by train and otherwise to Fredericton, headed for home by the up-stream course.

All hands were delighted with the scenic beauty along the St. John and the magnificent possibilities in orcharding which the trip disclosed, and loud in their praise of the courteous treatment accorded them by Mr. Turney and his aids, and W. W. Hubbard of the Experimental Farm, and looking forward to a similar profitable and delightful outing next year.

The Evening Times commenting on the Orchard Field Day says:

"Members of the party who observed "field orchard day" yesterday by inspecting the orchards along the banks of the St. John river were deeply impressed by the possibilities which the province offers for fruit growing. If these gentlemen, who already were interested in this phase of the development of the country, were surprised by what they saw, what would have been the effect upon other residents of New Brunswick who have paid less attention to the subject? We are entirely too modest about our provincial resources, and whether this modesty has its origin in lack of information or lack of appreciation it is not a trait which makes for rapid progress in the development of the province.

Experts have pronounced apples grown in New Brunswick on a par with the best and superior in some respects to the product of more famous apple regions. The introduction of more modern methods of growing and cultivation and improvements in packing and shipping have enabled New Brunswick apples to secure a foothold and a growing reputation in outside markets, but only a beginning has been made. Wide stretches of land, particularly along the river banks, offer exceptional opportunities for the production of apples on a scale which would provide a generous income to many people and add much to the wealth of the province. Many, already residents of the province, might turn their attention in this direction with profit to themselves, and the opportunities offered should provide a strong attraction for a desirable class of settlers from other parts of the world.

The opening of the Valley Railway will furnish access to a country well suited for orchard development and should result in increased attention being paid to this source of wealth.

United Farmers Adopted a Definite Party Platform

Platform of the United Farmers of N. B.

No. 1. Whereas a call to the United Farmers of the different local branches for the putting up independent candidates to represent the different constituencies both in the Federal and Local houses and that the responses have been practically unanimous in its favor, therefore we, the officers and directors of the United Farmers, authorize the organizing director of each county to call a convention for the purpose of selecting candidates for both Federal and Local houses.

No. 2. Since it is absolutely necessary to have campaign funds for legitimate purposes, we would therefore authorize each county to raise and control such funds with the provision that it shall be itemized and audited and forwarded to the Secretary of the Central Association and the source from which it is derived.

No. 3. That we are entirely opposed to any form of bribery and corruption in elections.

No. 4. That wilderness and unimproved land be taxed in proportion to the tax on improved land at the same rate and on the same basis.

No. 5. That the registering of Mortgages be changed so that the amount actually due on mortgages can be ascertained at the registry office every year, such mortgage to be exempted on amount of mortgage still unpaid, and the holder of the mortgage be assessed on the amount and the taxes paid in the district wherein the land lies.

No. 6. That we propose an act to be passed by our local legislature compelling any trunk telephone to give proper connections with Local or Farmers' line for a reasonable toll.

No. 7. That before any increase in telephone rates should be made, a full investigation be made before the proper authorities open to all parties interested, showing such increase to be justifiable.

No. 8. That any man 18 years old be allowed to homestead 100 acres of land and a returned soldier 200 acres with the privilege of buying 100 acres additional in the Province of New Brunswick.

No. 9. That we will work for an Abattoir, an establishment of a cold storage plant and stock yard in the Maritime Provinces.

No. 10. That the Provincial and Federal representatives pledge themselves to resign on being presented with a petition signed by 60 p. c. of the members of the U. F. of N. B. asking them to do so.

No. 11. That we are in favor of total prohibition of the manufacture and the sale of liquor as a beverage and that plebiscite be taken at any time.

No. 12. That we are in favor of general improvement of the roads of N. B. rather than the building of a speedway for autos in the province, and that we use auto taxes for Highway purposes only.

No. 13. That we have a uniform system of breaking winter roads and they, the workers, receive pay for doing it.

No. 14. We should aim to have the government of the day to appoint a Farmer as Minister of Agriculture.

No. 15. That the Secretary of Agriculture be a Farmer, a Farmer's Son, a native of N. B. and a graduate of the college of Agriculture.

No. 16. Whereas the United Farmers represent the Farmers more than any other organization, we would ask that the United Farmers be consulted on the general policy of the Agriculture.

No. 17. That we recommend a rural delivery daily mail service be established in every country district.

No. 18. That we adopt the Platform of the Canadian Council of Agriculture with the addition of clause G. to section 4, which reads as follows:

That firms holding charters for the development of the natural resources of the province. That these charters be cancelled unless the work be carried out within a reasonable time.

And the Exception of Section 9, which reads as follows:

Public ownership and control of railway, water and aerial transportation, telephone, telegraph and express systems, all projects in the development of national power and of the coal mining industry.

N. B. LIVE STOCK SUPT. GOES TO TORONTO STOCK YARDS

Thos G. Hetherington, B.S.A., Live Stock SuperinStendent for the New Brunswick Department of Agriculture, has tendered his resignation to the minister of agriculture, to take effect this month and has accepted a position in the Toronto Stock Yards under the Dominion Live Stock Branch.

Mr. Hetherington is a conscientious hard worker. During his term of office in New Brunswick he has done a great deal of good work in upbuilding the live stock industry of the province. He has been the means of starting many young farmers along the right line in stock breeding.

The Maritime Farmer voices the sentiments of all those with whom he worked when we wish him every success in his future undertaking.

THE PASSING OF J. A. FLOYD

In the passing of Mr. J. A. Floyd, of Bloomfield Station, Kings County, after a short illness at the St. John Hospital, the province of New Brunswick lost one of its most intelligent and progressive farmers. The late Mr. Floyd took an active interest in anything and everything that tended towards the betterment of his community and calling. He was a prominent berry grower and shipper and was well and favorably known. He is survived by his wife, two odaughters and two sons. One of the sons is the popular and energetic L. T. Floyd, Provincial Apiarist for New Brunswick, while one of the daughters is Mrs. John Woods, whose husband is so well and favorably known as a valued member of the staff of the New Brunswick Department of Agriculture in charge of darinage propaganda.

The Maritime Farmer extends the sympathy of its readers to the bereaved ones.

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Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

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DATES OF ISSUE.

September (Exhibition Reports)	—30
October	14—28
November	11—25
December (Xmas)	9—23

SEPTEMBER 9, 1919

GAMBLING IN LIVE STOCK

Changing over from one line of live stock to another, seems to have been a popular practice with a large number of farmers of late. Of course it goes without saying that the farmer who makes such a move has reasons for doing so which may appear quite convincing on paper, regardless of how they work out in practice. But to boil the matter down into a nutshell there appears to be two general causes behind such action. In the first place there is the question of labor supply. Shortage of help has forced many a man out of the line of stock he has been specializing in, regardless of his own inclinations in the matter. In a case of this kind the man on the ground is the only on who knows just what sort of a proposition he is up against, and he alone can prescribe a reliable remedy. But, nevertheless, there are plenty of cases where farmers have changed from one line to another, purely in an attempt to cater to the highest market, and it is the wisdom of this kind of policy that is open to question. Perhaps the element of risk involved can best be explained by taking a purely imaginary example. Let us suppose, to begin with, that beef prices are very high; here is a farmer who has been handling dairy cattle for years and doing fairly well. But he gets figuring on the beef proposition, and convinces himself that there is more money in beef cattle than dairying. Accordingly he sells his dairy cattle on an average market and buys stockers on a high one—a transaction of questionable wisdom in any sphere of business. It requires a litle time for him to get his new business on a good working basis, and the chances are that by the time he gets into his stride, beef prices will have suffered a reaction and will be once more back at normal. This, coupled with the fact of his discovery that he has quite a lot to learn about beef cattle raising is more than likely to make him sick of his bargain and anxious to get back into his old line that he knew so thoroughly. But to do this he must sell his steers in a normal market, and if it so happens that prices of his own line of stock have meanwhile advanced—well, the experience will be complete and convincing even though rather costly.

Of course, events do not always develop into a wreck, like the case cited, but recognizing the general rule that ups and downs follow one another alternately, the man who buys on a high market stands a pretty fair chance of selling on a low one at a loss. Hence in nine cases out of ten the farmer who comes out best in the long run is the one who stays by the line of stock that he knows so well, through thick and thin, rather than plunge here and there gambling on the turn of the market.

SOME DEATH TRAPS AROUND FARM HOME

There is no denying the fact but that the country is the safest place in which to live, and yet, many accidents happen annually in rural districts from carlessness or neglect. Only a few days ago whie driving along a country road in passing by a farm house we noticed a large limb that had broken off a huge maple tree which was standing in the lawn. That limb in falling had dropped quite close to the front door of the house where the children often played. In fact as we passed by three little tots were playing around that very tree. What would have happened if they had been there when the limb came down? There is no use going any farther, but it looked like carlessness to leave that limb there until fell of its own accord. Possibly its weakness could not have been seen beforehand, but that does not often happen.

There are a great many such cases occurring every year. Some may happen without any previous warning, but the large majority of them are looked for and always come before they are expected. Why any farmer should neglect such a simple operation as sawing off a broken or weak limb before it tumbles down in his door yard seems hard to understand. Children may be warned about playing around such places which are known to be dangerous, but when a number of them get together they forget all about the danger and sooner or later may get hurt.

The policy, therefore, of every farmer who has trees growing in his yard should be to have a thorough examination of weak limbs conducted annually or oftener if found necesary. It may mean a litle effort but result in saving someone's life.

VALUABLE PAPERS OFTEN DESTROYED

Every farmer should provide himself with some kind of a fireproof box in which to put his valuable papers. No matter how small the farm may be there are always valuable papers around that require more protection than that afforded by the top drawer of the bureau. There are always deeds to property, insurance policies, wills, notes, both given and received, live stock pedigrees, etc., most of which can be replaced if lost through fire, etc., but that costs considerable in time, money and inconvenience.

What usually happens when the average farmer is asked for some valuable paper such as a pedigree, deed, etc? He calls his wife and together they search every drawer and box for it. Sometimes they find it, but only after a search of half an hour or more. That should not be the case. If papers are valuable enough to pay good money for recording them they should be worth looking after. Suppose a fire should break out in the farm home, every available hand would be kept busy either putting out the fire or removing the furnishings before the rapidly devouring flames and if these valuable papers were scattered here and there as they are in too many farm homes, they would likely be lost. This can be prevented to a large extent by the purchase of a fireproof box which every farmer should have. Such a box can be purchased for seven or eight dollars, and although not absolutely fireproof in a continuous fire, it is a big protection and seldom fails to preserve the contents. Not only does it serve as a protection in case of fire but it gives quick access to the papers at all times. They are always in the box and it is only a matter of a few minutes to find them when required. These boxes are provided with a lock and key which makes them all the more safe, and should be used by every farmer or business man who has not easy access to a fireproof safe. The few dollars spent in buying such a box would not go far in having duplicate certificates made if by any reason they should be destroyed.

THE FARMER'S LIFE

Now let the men who find fault with the farmer and the way he conducts his business, take one year's vacation from the very hard and tiresome jobs they are holding down and go to the country. We will not ask them to work, all they need to do is: Get up at five o'clock in the morning, see the sun rise for 365 days, as the farmer does, go with him to feed the stock, milk the cows, watch him take a little manual exercise—hopping clods; come in at eleven-thirty, feed the horses, slop the pigs, go to dinner at twelve, then sit out in the shade for one long hour; back to the field at one where you go through the same exercise you did before noon, and keep it up till the sun goes down. Did you ever see a more glorious sunset?

THE PART NATURE PLAYS

In breeding cattle and plants, Nature throws us off the track of certainly by her universal law of variation. We find in dealing with the soil that nowhere can we be "cock sure" that we are right. But we do find that those men are nearest right, the most successful, the closest guessers, who bring to their task the most enlightened and comprehensive minds. To such minds Nature yields the largest number of her secrets and with that they must be content. Nature has no mercy for the self-willed, the narrow-minded, and the ignorantly conceited. They have no reverence for her and so she treats them with contempt, making their punishment oftentimes "harder than they can bear."

Every dairy farmer should see that he has the necessary equipment to make the labor of himself and helpers count for as much as possible. Whenever improved barn fixtures, litter carriers, feed trucks and carriers and milking machines can be used efficiently, they should be put in. The milking machine especially is a great labor saver, as with it one can take care of about three times as many cows as he can without, and in this way it adds greatly to the efficiency of his labor and to his output of food products.

* * *

When a man buys a purebred, part of the purchase price unquestionably represents the certificate of registration. He buys the individual first, but at a price considerably above the market quotations. That extra price represents what he pays for confidence in and knowledge of the animal's ancestry. The certificate of that confidence and knowledge is the pedigree. He pays extra for it. If it is not forthcoming promptly he is cheated. Another way of saying it is "Pocketing the cash and neglecting the papers."

BARN VENTILATION

(Continued from page 833)

though they may be made as small as 12 inches square in a low barn with a low or no loft.

In barns of the narrow type, the out-take flues can generally be made in two sections with the boards running the full length of each section. In such cases, and where the flues are small enough so that the sides may be made with two widths of shiplap, the flues are often built up with the 1x2 inch cross pieces on the outside instead of between the two layers of boards. One needs to be careful in the selection of the proper width of boards. The two flues shown below are sizes commmonly used in the narrow barns, and are therefore worthy of special study. The smaller flue is made up as follows:—

Inside layer: 6 lengths of 1x8 inch shiplap, 2 lengths of 1x10 inch shiplap. Outside layer: 2 lengths of 1x8 inch shiplap, 6 lengths of 1x10 inch shiplap.

Material per length of the larger flue below:

Inside layer: 2 lengths of 1x8 inch shiplap, 6 lengths of 1x10 inch shiplap. Outside layer: 6 lengths of 1x10 inch shiplap, 2 lengths of 1x12 inch shiplap.

When figuring sizes, it should be remembered that shiplap is always under size. For example, 1x8 inch shiplap is ¾ of an inch thick and very nearly 7½ inches wide over all. If one edge is taken off, the width over all is redueed to 7 inches.

While building up the inside layer of the flue, the boards are held together by temporary cleats tacked on the inside surface, using 2 inch nails. These inch stripes are knocked off when the section is completed and after th eoutside cross pieces have been securely nailed in place. When putting on the temporary strips, do not drive the 2 inch nails in up to the head.

Construction of Wells, Etc

If any system of ventilation is to work well, the loft floor must be tight, and the underside of the floor joist ceiled, unless there is a thick layer of chaff on the loft floor. The inside of the studding of the stable should be covered with V joint, or tongue-and-grooved stuff or shiplap. For Manitoba conditions, the wall outside the studding up to the loft floor should consist of one layer of shiplap covered with at least one thickness of building paper, and finished off with barn siding.

The Two Systems of Barn Ventilation

There are only two systems of barn ventilation that have thus far proved their worth, and even these are not successful in our cold weather conditions, unless properly installed and carefully operated. One is known as the Rutherford and the other as the King system. This bulletin is calculated to give the reader, in as brief a manner as possible, an elementary knowledge of the systems already in use, with some suggestions and comparisons. It may be well to state at this point that many minor details in ventilation construction applicable to warmer states and provinces will not always be found satisfactory under colder conditions.

The Rutherford System

Size and Number of Intakes

In the Ruetherford system of ventilation the fresh air enters the intake flues just above the ground level, turns downward, passes inside the stable and then rises. The outside is commonly protected by a little slanting roof and louvres which may be hinged at the top for cleaning out. If the system is installed when the barn is built, the in-take flues may be built in the foundation wall, or if the system is installed later the flues are put in above the floor level, or even above the sill. The Rutherford intake is especially applicable where the animals face out, as the manger protects the stock from drafts, while the fresh air comes right in at the heads of the animals. On the inside a partition of concrete or wood rises above the floor level to keep the dirt from sliding into the flue, and to direct the entering air upwards. Covers should be provided for closing the intakes in windy and extremely cold weather. It is well, also, to protec them with coarse screens to prevent their becoming filled with leaves, straw, etc. The small mesh poultry screen does very well for this purpose . From 8 to 10 square inches of inlet area per head of cattle is commonly recommended by the advocates of the Rutherford system. Horses should be given 10 to 12 square inches of inlet area. If a barn contains 30 head of stock, the total area of the intake flues should not be more than 300 square inches. If four in-take flues were put in, the area of each would be 75 square inches, or an opening 5x15 inches, which would make a bad draft. If six intake flues were used, the area of each would be 50 square inches, or less, which would give an opening of about 4x12. For Western condition, where there is a great deal of wind, a large number of smallerr intakes would be preferable to a smal number of large intakes. In the above case, eight in-take flues would be better.

Number and Location of Out take Flues

In the Rutherford system the out-take flues start at the ceiling, and pass up through the loft (usually alongside the purlin posts, if there are any) to the cupola, being put in pairs in large barns. There will probably be one or two in the small barn, four in the ordinary barn, and six in the very large barn. 8he out-take flues can be carried up through the roof in various ways. In one the flue leaves the purlin post and takes a steeper slant up to the cupola, which is better than following the slant of the roof, in so far as the ventilation system is concerned, but takes more space in the loft. By following the purline post and then out through the roof affords the most direct exit for the foul air, and is, in the writer's opinion, the best one to use. It is a litle unsightly, and the out-going air cools a little more rapidly in the proportion above the roof exposed to the direct contact of the cold winter winds, but the suction is greater, and the hay track can be put in higher by not having the outlets feed into the cupolas. Also the cost of construction should be, if anything, a little less in the case of the straight out-take flue. When installing out-take flues, avoid carrying the flues along horizontally when it is necessary to get to the cupola, but rather keep the flues slanting upwards, by running them diagonally along under the rafters to the cupola.

Size and Regulation of Out-takes

The total area of the outlet flues in the Rutherford system is made twice the total area of the in-take flues. In other words, sixteen or more square inches of out-take flue area is allowed for each cow, and a little more per horse. Thus it is figured (and correctly so) that a good deal of the fresh air entering the stable comes in around the doors, wndows, etc. The outlet flues are controlled by means of dampers, where one can readily see if they are open or shut. The dampers should be pivoted slightly off centre and regulated by a cord. These dampers should fit well. It has been found best to entirely close some of the out-takes in very cold weather, rather than to partially close all. In the latter case the flues would not handle enough air to keep them warm, and they would condense the moisture in the outgoing air, and fill with frost, and would then drip badly with the next rise in temperature.

The King System

Intake Flues

In the King system of ventilation, the fresh air enters the in-take flue just above the snow line and rises between the studding, which forms two sides of the flue, entering the stable a little below the ceiling, where the cold incoming air mixes with the warmest air of the stable with the idea of avoiding drafts as much as posssible. The in-take openings should be ten or twelve inches below the ceiling. Professor King recommended a large number of intakes rather than a small number of larger ones. For cold climatic conditions it would be well to have at least three times as many in-take as there are out-take flues. The outside opening is screened with coarse mesh wire. The inside opening is regulated in various ways by means of cast iron registers, sliding dampers, or by a door, hinged at the bottom and controlled as to position by means of a stick, beinig dropped into notches on the side of the wall below the opening.

Arrangement of Out-take Flues

Theout-takes in this system are put up in pairs. They take the air at a point about a foot above the floor and pass up and along the inside of the stable wall to the loft, one flue entering the cupola from each side of the barn. In the stable proper, the flues are made about twice as wide as they are deep in order not to project too far out from the wall; ;but at the loft floor, they should be made square to reduce the outside cooling surface to a minimum. They pass up through the loft in various ways: they may pass up along a roof-bent; or they may pass out of the roof at the curb; or they may pass up along the under side of the rafters, the latter being the least preferable. When the rows of stalls run across the barn, the out-take flues are often put in beside the posts supporting the loft floor and pass up through the loft beside the purlin posts. 8he number of out-takes used is about the same as already referred to in the Rutherford System.

Control of the Outtake Flues

While in cold weather the air is made to enter the outlet flue at the floor, an opening is also provided at the ceiling in order that the warmer air of the stable can be removed, when the temperature in the stable rises too high. This opening can be controlled by a slide or a door hinged at the bottom, similar to the method shown for controlling the in-take opening.

Size of Flues

In the King System the total area of the out-take flues and of the in-take flues are generally made equal. While this is satisfactory where the winters are milder and less windy than in the prairie provinces, for our conditions it would be better to have the total area of the intake openings about two-thirds that of the out-take flues, for leakage around the windows and doors will easily provide one-third of the ventilation. From the following table it will be readily seen that the recommended amount of flue area per animal is much greater than that recommended under the Rutherford system, which means that for flues of the same height and under similar weather conditions the King System will give at least fifty per cent more ventilation than does the Rutherford System, all other conditions being equal.

Area of Out-take Flues per Animal

Height of flue	40 ft.	30 ft.	20 ft.
	Square Inches		
Horse	36	40	44
Cows	30	34	38
Pigs	12	14	16
Sheep	8	9	10

Areas per Animal for King Out-take Flues

Height of flue	40 ft.	30 ft.	20 ft.
	Square Inches		
Horse	24	26	28
Cow	20	22	24
Pig	8	9	10
Sheep	5½	6	6½

These figures provide ample area for still weather conditions and where the temperature is 15 or 20 degrees F. above zero, under which conditions we have a slower movement of air than when it is colder and more windy. Therefore the flue area must be greatly reduced in windy and very cold weather.

Frosting of In-take Openings

A slight objection to the King System of intakes for our climatic conditions is, that the air rising through the flues makes the inside walls very cold, and in the coldest weather the moisture in the stable forms a thick layer of frost on the wall at these points. The frost, if not scraped off, melts and runs down the wall at the next rise in temperature. This trouble will occur, to some extent, around any in-take openings in the coldest weather. In the case of the King inlets it can be largely overcome by making a dead air space between the intake studding.

FURTHER SUGGESTIONS

Flue Regulations

With any system of ventilation, all the intake openings should be partially closed in cold weather rather than to shut off some entirely except when the wind is blowing strongly against one side of the barn, in which case the intakes should be almost closed or entirely closed. A test of intake flues in windy weather will show nearly all, if not all, of the fresh air coming in on the windward side of the barn and none coming in on the opposite. But if the intake flue openings on the winward side are cut down, fresh air will be drawn in on the opposite side also, thus giving a more uniform ventilation throughout the stable, and overcoming the tendency to drafts on the windward side of the barn. In very cold weather all intakes are closed and half the out-takes entirely shut off; and even all outlets should be closed but one, when the temperature is extremely low.

Methods of Protecting Inlet Flues from Heavy Winds

One of the main points to be watched in the operation of a ventilation system is the regulation of the intakes. If the intake flues are set for still weather conditions and a strong wind sets in before morning, the animals in the windward side of the barn get too much cold air. This is probably more true of the King inlet than the type of Rutheford inlet discussed, though the King inlet gives the incoming air a better chance to spread before reaching the animals. Here is an arrangement tested out by the writer for protectinig the outside openjng of the King inlet flue from the direct force of the wind. There are no louvres on the front, but openings at each end directly under the little slanting roof. The roof should overhang the opening about three inches. With this arrangement, if the wind is blowing squarely against the side of the barn, the ingoing air has to make two right angle turns before it can enter the intake flue proper, which would considerably cut down the evlocity of the entering air. If the size of the two openings be made about two-thirds of the area of the intake proper, this will help to reduce the velocity of the air entering the stable. From the tests made, it was found that this form of protection was of material advantage when the wind was blowing squarely against the side of the barn; but when the inlet opening is so located that the wind strikes it at an angle, the protection is of little value.

(Contnued from page 837)

HORTICULTURE.

A FEW NOTES ON ANT HISTORY AND HABITS

(By Rev. H. J. Fraser)

There is a very wonderful world lying about our doors, a world full of little beings with their loves and hates, their ecstasies and tragedies, their wonderful skill in work, and their approaches, to say the least, to human intelligence and imagination. Among these, the subject of this little paper, the ant, ranks very high, so high, that for my part I must confess that she commands my most sincere and rapturous admiration, although she is not always my friend. In some respects I admit at once she is my superior, and it does me good to know that great and might as I am, there are others, and some of them are most humiliatingly small.

The ant family outnumbers by far all other terrestial animals, exists in a great range of variety, and inhabits all sorts of geographical regions, from Arctic to Tropic, from dampest forest to driest desert, and from the top timberline of the highest mountains to the sand dune on the lip of the ocean. Their colonies, when favorably located, are remarkably stable, often outlasting a human generation, while the individual has been known to attain the age of fourteen years, a veritable Methuselah in the insect world.

Some striking, if apparently fanciful analogies to the human race, have long been noted. As human civilzation is marked off in stages, the hunting, pastoral, and agricultural, preceding in order of time the present industrial and commercial period, so among the ants the first three of these are observed, not, of course, in any time sequence, but marking different varieties.

In the hunting familes the communities are small; they fight singly and each individual finds its own food. The pastoral varieties live in better houses, act in concert, fight in armies, conduct organized food forays, and enslave the young of conquered foes. A most interesting habit of the pastoral ant is its adoption of the honey secreting aphis. A colony of ants often house and attend these little creatures in return for the honey they collect, using them precisely as the human family uses the cow. When we examine the habits of the agricultural types, there is a variety of opinions as to their planting and growing grain for food. Some observers claim that they actually and intentionally plant the seed of their favorite ant rice. But the consensus of opinion among careful writers is that the ring of these plants so often seen about the colony is due to the fact that seeds are often dropped or pushed out among rubbish and become sufficiently covered over to take root and grow. It is well known that germinated seeds found among the winter stores are immediately expelled.

Perhaps the most interesting habits to be noted in the agricutural stages are those of the fungus growing ants. These collect organic matter of such quality and preserve its moisture at such a degree as to grow a fungus which constitutes their favorite food. This is stored in chambers constructed specially for its reception, and when a female goes off to start a new colony, she takes with her as a sort of marriage dowry, a piece of fungus to form the nucleus of the food supply for a new generation.

If in all this there are striking analogies to human beings and their ways, the ant world has as striking differences. Possibly they have only preceded ourselves in that particular, and we are soon to follow in their footsteps. At any rate the male among ants has a very limited sphere, and as a member of the community is quite negligible. Then, the ant is born to a calling. There is never a change by superior training or prowess from one grade to another. Karma ordains her station and there she remains. In government the ant colony is an anarchistic socialism, but as far as can be imagine dfrom the insane and inane Bolshevikism. It has no ruler or general in ordinary times because it needs none. Each individual knows her work and does it, and there is seldom any evidence of confusion or conflicting counsel. In war there seems to be a supreme command, or else so perfect and universal a knowledge of strategy that action is concerted and purpose unified and definite.

There is one particular in which the ant so far excels us that we can never hope to emulate her. The writer remembers reading Bill Nye's History of England, wherein is described the fate that befell Charles I. After commenting on the quarrel with his Parliament the author states that it had the King amputated at the first joint: laconically adding: "He died soon afterwards." An ant has been known to live 41 days after its head had been severed from its body, during 40 of which it walked about with apparently little sense of loss.

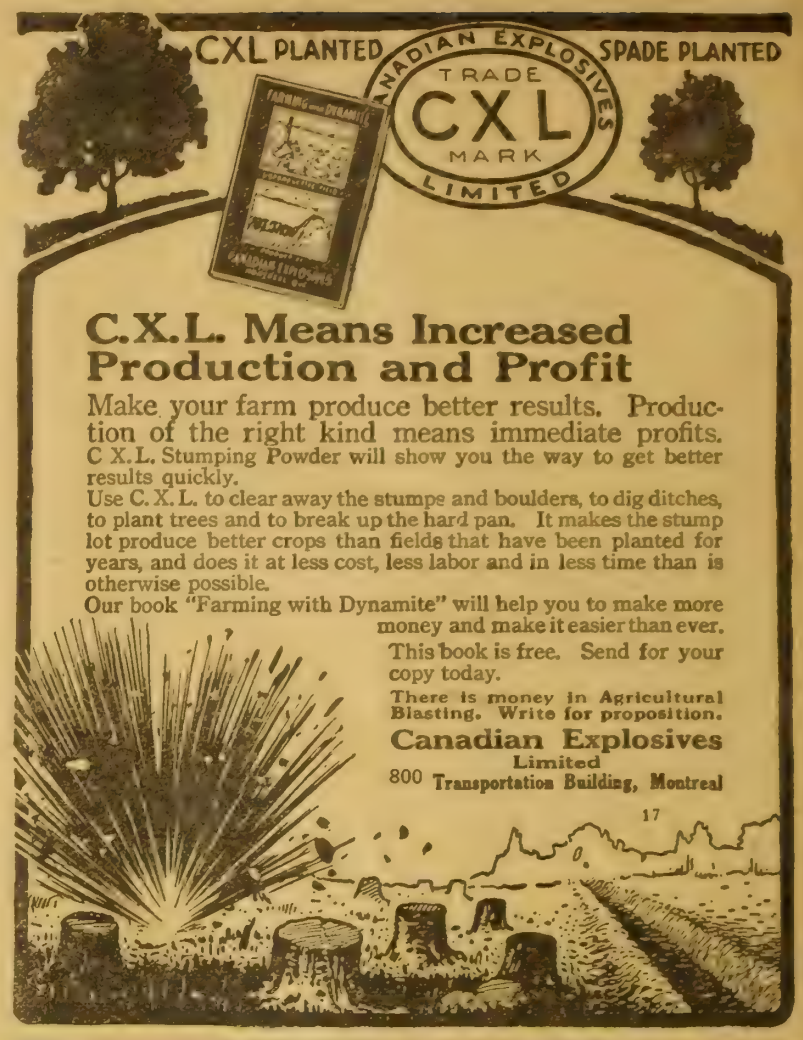
I should like to add two or three authentic stories which indicate either the ability to reason upon a given situation, or the ablity to seize upon accidental circumstances and turn them to the best possible account.

The first I shall relate to do with a species of ant which makes its nest of large leaves, bending them into a kind of tent. A colony of these was observed fastening down the edge of a particularly large and stubborn leaf. At some points the edge was too far away for a single body to span the gap, whereupon one worker seized another about the waist with its jaws, this one a third, and so, by a living cable drew down the leaf. Next came the duty of fastening it in place. A number of workers bore pupae, which secrete a viscid fluid, in their jaws, rubbing these along the edges to be fastened together. They were clamped into position by the jaws of a number of workers and there held until the glue had sufficently toughened to hold them secure.

An experimenter suspended a sugar bowl by a string from the middle of a window top in a buiding infested with ants. At first, after discovery, they travelled up and down the string carrying off particles of the coveted delicacy. After a time, however, a number of ants were observed at work in the sugar bowl carrying the little crystals to the eedge and dropping them over, whereupon these were seized by their comrades below and carried off.

The last I shall mention, illustrates a curious limitation of this wonderful litle creature. A colony home had become untenable, and workers had gone forth in different directions to locate a suitable spot for a new city. One worker at length found a satisfactory place, and, returning by the roundabout route she had come, seized another in her jaws and bore it to the spot. The two then returned and seized two more and so the process continued unti lthe whole colony had been transplanted.

At times while refreshing my information for this litle sketch, the hour has grown late, and my head has begun to droop in spasmodic nods. Then suddenly, into my fast-benumbing consciousness has come a mighty voice form a far away land and time: "Go to the ant, thou sluggard! Consider her ways and be wise, which having no guide, overseer or ruler, provideth her meat in the summer and gathereth her food in the harvest," and I have realized that somebody in Solomon's day, possibly the great and wise king himself, had lain beside an ant hill and watched and wondered, an that the ant he saw then, three thousand years ago, was just the same busy, provident little creature that we have tried to watch ourselves, in our so different day.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36A

BEEKEEPING ON FARM PROFITABLE

It is undoubtedly a fact that the desire for and the use of sweets is as universal in every family as that of the bread, the meat and various other foods that find a conspicuous place on the tables of the multitudes who find homes in this country. In fact, the make-up of the physical man demands sweets, or sugar as it is usually denominated.

As all well know, the sweets now demanded and required, are derived from several sources. Most all are included when sugar and syrup from the tropical cane, sugar beets, the product of sorghum, maple groves and honey stored by bees are named. Of all these, that delightful, healthful and universally liked product of the

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honey bee, is the one now to be briefly considered.

In a sense, the world where climatic conditions are at all favorable, is a vast flower garden. And in all this variety and abundance of blossoms ranging from the tiny snowdrop that gladdens the chill spring of the far north, to the gorgeous magnolia of the tropics, nectar is extracted and stored by honey bees in just such quantities as bees are available to gather it.

This brings us to the point of saying that the honey resources of this country are scarcely touched after a strenuous season of industry by the bees has been completed and they have retired to their winter quarters for a brief season of rest. Great as the honey resources are in the general and natural way, I want to call to the attention of present and prospective beekeepers, how they easily can provide on their farms and near the apiary, whole fields of continuously and abundantly blooming crops for their bees to store honey from, that but a very few beekeepers give any particular attention.

The special crops that farmers can and should grow on large areas of their land, if they desire large and continuous flows of nectar for a large number of stands of bees, are alsike clover, buckwheat and white clover. Besides these special sown crops, their bees get all the advantages of the honey flow from that which is common, namely, that of fruit and forest trees, and wild and cultivated flowers, giving forth an abundance of blossoms at stated seasons.

Now, in conclusion, if all the available nectar from the multitude of blooming trees, shrubs, and all other sources, could be stored by bees as a honey product, the quantity would far exceed all the sugar and syrup now derived from cane and sugar beets.

W. A. G.

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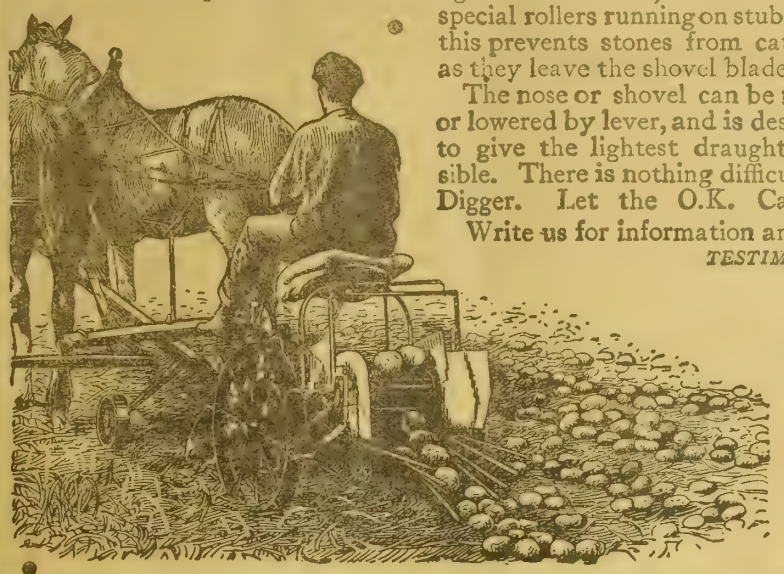

TESTIMONIAL

Quyon, Que. Dec. 6th, 1918.

Dear Sirs,—

I bought a Digger No. 1 five years ago, and must say I have been more than satisfied with it. It is an O.K. machine. I have tried it with other machines and find none better for all quality of ground. Yours very truly,

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7

HOW TO PREVENT BEES SWARMING

The time when success in bee-keeping was measured by the number of hives or swarms hived has passed, and nowadays the progressive bee-keeper endeavors to prevent swarming as much as possible. The reason for the change is that bees are more easily handled, there are no lost swarms, and generally speaking one large hive properly handled produces more honey than if swarming is allowed, and the bees distributed in several small hives. In fact, instances are not rare in which unrestricted swarming has entirely prevented the production of surplus honey in a hive. But on the other hand it is not too much to say that the successful control of swarming is one of the most difficult problems the bee-keepers of Canada have to deal with, and a most careful study of the bees' behaviour is needed to cope with it. Fortunately for the bee-keeper, several days' notice or warning of the probability of the issuing of a swarm is given by the appearance of eggs in the queen cells.

Colonies very much in their propensity to swarm, even under the same conditions, but by replacing the queens of colonies that swarm, with queens that are the progeny of queens whose colonies have not swarmed, the bee-keeper may hope to reduce the percentage of colonies that swarm. Another point worthy of note is that colonies containing queens under a year old are less inclined to swarm than those in which the queen is older. However, at the present time the most successful methods of swarm control are two: First, by giving abundance of ventilation and room at the mouth of the hive in warm weather, and secondly by preventing overcrowding and giving ample room to store the honey by adding a super, preferably one containing empty extracting combs directly above the brood chamber as soon as the brood chamber is almost full of bees and honey is coming in. As soon as this super is filled with honey another one should be placed between it and the brood chamber. A good way to provide ventilation at the mouth of the hive is to place a thin wedge under the edge of the bottom box, thereby raising the box from the floor of the hive.

If these manipulations do not prevent swarming it may be necessary to add to them the more effective one of enlarging the brood nest so that it will become less crowded with young bees, and the queen will have more room to lay. A frequently successful practice is to put no queen-excluder between the brood chamber and the first super, thus allowing the hive to expand into the first super, but when the honey flow has started the queen should again be confined to the brood chamber by means of the queen excluder. Seven or eight days later any queen cell that may have been built in the super should be cut out. However, in many places it is often impossible to be sure of preventing swarming by this manipulation, and it is necessary from the time that the brood chamber becomes full of bees until all ikelihood of swarming has ceased, to open the hive every seven days and examine the brood combs to see if queen cells containing eggs or larvae are present. If any are found the combs should be carefully gone over and all of them should be cut out. At the same time, whether queen cells containing eggs or larvae are found or not one or two combs containing honey should be lifted out of the brood chamber and placed above the queen excluder. This practice will usually prevent or stop preparations for swarming.

PREPARING BEES FOR WINTER

(Experimental Farms Note)

The preparation of bees for winter should begin in July.

Every colony should have a young laying queen before the end of this month. Year old queens should only be retained if they are in full vigor. This means the raising of a large number of bees in August and September, and thus the first essential of good wintering—abundance of young bees in each hive—is fulfilled. A colony containing a young queen will also breed more bees and produce more honey in the following season than one containing an old queen.

If the bees are to be wintered out-of-doors, July is none too early to see about getting winter packing cases made, because the colonies should be placed in them in September. At the Central Experimental Farm, Ottawa, a case to hold four colonies in a block with space for three inches of planer shavings at the sides and beneath and eight inches on top, with outside entrances three-eighths of an inch wide by one inch high, has produced very good results in a place surrounded with a high board fence to protect the bees from the wind.

The third and last important factor in preparing bees for winter is an abundance of wholesome stores put away before cold weather. Clover honey, buckwheat honey and syrup made from renefid sugar have been found wholesome for wintering, but dandelion honey and some kinds of honey gathered in the fall have proved unwholesome. Colonies that have less than thirty or forty pounds of wholesome honey should have the deficiency made up with syrup consisting of of two parts of sugar to one of water. This feed should be given rapidly, not later than the middle or end of September, for the greater part of Canada. A 10-pound honey pail with a number of small holes punched in the lid makes a simple and efficient feeder for this purpose. It is placed upside dow nover the cimbs and covered with a super. Happily there are no restriction controlling the sale of sugar this year, but it would be advisable to secure a sufficient supply in good time.—F. W. L. Sladen, Apiarist, Dominion Experimental Farms.

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Gents,—A customer of our cured a very bad case of distemper in a valuable horse by the use of MINARD'S LINIMENT.

Yours truly,
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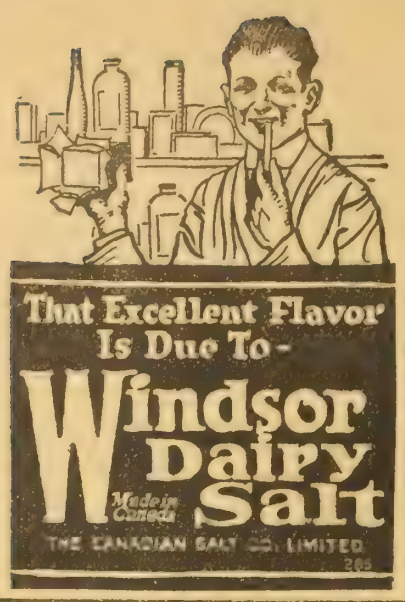

IN BUYING DAIRY COWS BETER GET KIND THAT WILL LEAVE PROFIT IN BUSINESS

It is quite safe to say that the universal idea of goodness regarding a dairy cow is her ability to produce large amounts of milk and butter fat economically. The man who goes out to buy dairy individuals pays in a large measure according to ability to do. For this reason cow testing associations are operated and different cattle clubs carry on systems of official and semi-official tests, that we may nkow to a certainty as to their ability.

The long period test is practically the only reliable test, as has been proven time and again. In a case in my own vicinity in cow testing work, one cow started in making 70 pounds fat in a month, and was bragged about as the best cow in the association, but gradually dropped to about 10 pounds fat a month. Another cow making only about 50 pounds fat in her best month, kept close around this mark for the entire years, beating the former cow in yearly results by a large margin.

Education, or the early forming of habit, has much to do with persisting, and one should be especially careful the first milking year to feed liberally and treat them kindly, to milk carefully and thoroughly, and not discourage the milk giving functions. If a heifer hates the sight of you, hates to be milked, the chances are that all the feed in the world would not make a profitable cow out of her.

When we consider the cow as a manufacturing institution, taking the raw materials of the farm, and converting them into the finished product of milk and butter fat, then we should consider those points that make for a profitable, durable machine. These points are constitution, conformation, temperament, disposition and peristency, and beleive the order named is the order of their importance.

Although it really takes the five points mentioned to make a whole cow, if you leave out any one, you have an imperfect cow and an unprofitable cow. Some seem to enjoy having an unprofitable cow around, saying they have the feed and the boys to do the work and they san keep them as well as not. Very little progress, however will be made in herds where this condition exists.

The business of the dairy cow is to produce and reproduce, and the manner in which she accomplishes these things stamps he in the profitable or the unprofitable class. To produce large amounts of milk and butter fat requires an abundance of constitution, vitality and strength to carry her through, for often her work is done under adverse conditions.

She must also have some reserve constitutional force, for she must be able to resist or throw off disease germs which are so prevalent in many of the stables where sunlight and good ventilation are things unheard of. Constitutuion, in a large measure, depends upon the room in which the heart and lungs are placed. This part of the cow should be roomy, giving perfect freedom for these organs to perform their functions, as the milk is made by the blood and the blood is purified by the amount of oxygen the lungs may pump from the air. An abundance os nourishing easily digested food is also an important factor in building up and controlling vigor. If the human body gets weakened, physicians prescribea diet of easily digested, easily assimilated food so it is the business of the feeder to watch his indivduals and keep them in a healthful condition.

The conformation also means much toward the production of milk, in fact her whole make-up contributes something to the perfect dairy type. A celebrated breeder once said if he could see an animal's head he would not need to see more, as the head would determine the rest of the body. This is true in a measure although I would rather see the whole animal. The medium sized, angular head would indicate an angular, medium sized body, and the short, compact head a correspondingly compact body, with a tendency toward beefiness, while a longer angular head would denote a large open jointed body with little surplus flesh.

A broad mouth is always indicative of good feeding qualities and as this is the business of the cow, this characteristic should be sought for and bred for, which together with a bright open eye and distance between the eyes and a strong muscular jaw would constitute an almost ideal head for a good dairy cow, and should be connected to the body wth a long, thin neck, free from meatiness.

The idea of extreme angularity of the body is not as prevalent as formerly, for sows of this make-up often lack conctitutional vigor, and when put to the test of large production, lack sufficient stamina to carry them through.

A large barrel to a cow is compared to a large storehouse for manufacturing institution, a place where material is stored for manufacturing purposes. A cow should have a good capacity of body, for it takes a lot of food to make a lot of milk. k

The udder should be capacious and well attached to the body, extending well back and well forward, occupying a large space on the body. It should be free from meatiness and covered with a soft, pliable skin. Udders of this character are more easy to empty out and are associated very closely with persistency. The teats should be of good size and well placed, which make the work of milking desirable and more pleasurable.

The milk veins should be prominent and elastic to the touch, with the milk wells large and numerous. These are an indication that the blood flow is going in the right direction, and are always in evidence on every good cow.

The temperament of the cow is an essential feature, and the term "nervous temperament" is often confused with nervousness and excitability. It is simply what we might term "dairy organization" or an ability or disposition to eat, digest and convert food into milk, except what is absolutely needed for the body maintenance. It also gives to her that stick-to-it-iveness which all dairymen like.

The good judge takes this in at a glance, he sees her bright, active eye, the expression of activity and intelligence in her face, the freedom of surplus flesh over the entire body, the open jointedness and the spacing between the ribs and the vertebrae, all of which are indications of a dairy temperament, and go to prove that she is a worker.

Disposition might be classed with temperament, but disposition is often caused by the bad disposition of her keeper. There are families that seem to be full of pure cussedness, and a cow of this charcater is always a source of annoyance to her owner and not make a good foundation animal. As this characteristic is usually transmitted, such a cow is usually lacking in genuine nervous temperament and has not sufficient nerve to be decent.

These points mentioned when blended together in harmony and symmetry, gives the cow an appearance of beauty which makes her attractive to her owner and consequently creates a deepe rinterest, which goes a long way toward making a good cow.—F.H. Scribner.

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ROOM FOR EXPANSION

The official Year Book of the province of New Brunswick shows that last year fifteen creameries produced 660,884 pounds of butter, valued at $297,397.14. The average price was around 45 cents. These creameries had 1,352 patrons. Twenty-five cheese factorie produced 1,174,362 pounds of heese, valued at $263,304.05. There were only 657 patrons of these fator-

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ies. With regard to butter the output of creameries declined from 1,090,501 pounds in 1914 to 500,050 pounds in 1917, so that last year's output indicate sonce more a rising scale. It is explained that the introduction of the hand separator encouraged home butter making and that since 1903 the factories have been much less active. Another difficulty was that of getting suitable labor for seven days in the week. With regard to cheese, the output in 1912 was 1,022,246 pounds, or with 152,000 pounds of what it was last year. The policy of the N. B. department of agriculture is to encourage co-operative butter and cheese factories, and the Year Book says: "It is noteowrthy that where farmers have taken hold of the dairy business with vigor and energy they have made it successful, as the character of the soil and the pasture lands of the province are eminently adapted to this branch of agriculture." It is pointed out that there will be an enormous demand from Europe for high grade dairy products for some years to come and that no farmers are more favorably situated to take advantage of it than those o fthe Maritime provinces. It is interesting to note that no less than sixteen of the cheese factories are located in one County (Kings) and they are found in only four other counties. Butter factories are fonud in eight counties, but there are only fifteen in all. Hence there is a very iarge field for the development of the industry. That progress is the watchword this year is evident from the formation of a New Brunswick Cheese and Butter Board, hich recently held its second meeting in the town of Sussex. Buyers from Halifax, St. John and Moncton, as well as representatives of packing companies were present. There were 1479 cheese boarded and the price received was 30 cents f.o.b. at the station nearest the factory. The average weight of the cheese sold was 70 pounds so that the sale represented $31,059 for the Kings County factories. The Board will hold regular meetings, and its establishment will no doubt stimulate the industry. The department is doing all in its power to encourage the manufacture not only of more but of better quality of cheese. A vigorous development of its dairying industry would undoubtedly be of great benefit to New Brunswick, and that appears to be the present outlook. —Maritime Merchant.

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TWO KINDS OF A COW

There are two kinds of cows on our farms today,
Just two kinds of cows and no more, I say,
Not Jersey, or Guernsey, Ayrshire or Holstein,
For it isn't the breed of cows that I mean.

Not the fat, or the lean, or the large or the small,
Nor the ones that stand in the up-to-date stall.
No, the two kinds of cows on our farms that I mean
Are the cows that lift and the cows that lean.

The lifter is one that brings large returnes,
The leaner costs more for her keep than she earns.
Wherever you go you will find the breeds' masses
Are always divided in just these two classes.

And, strangely enough, you will find, as I've seen,
There are about 10 lifters to 30 that lean.
And the dairyman finds by testing and weighing
That these noble lifters do all of the paying.

—Frank E. Rounds.

Good butter is the result of handling at the various creameries nothing but milk and cream produced under sanitary conditions and manufactured in well equipped creameries and in charge of trained men. The making of butter, the kind that always satisfies the consumer is not an accident but the result of care and skill from the cow to the consumer.

Every owner of dairy cows should establish a definite standard, and all cows that do not measure up to the requirements should be disposed of for beef. Whether a dairy cow should be rejected or retained should depend ordinarily on production, as shown by the milk sales and the Babcock test.

THE LAST MILK THE RICHEST

The milk drawn last is always richer in butter fat than that milked first, and if the cow is not thoroughly milked she will lessen her milk flow. So to keep up the quality and quantity of the milk, milk the cows thoroughly.—Extension Division N.D. Agri. College.

"Tomorrow I will go into pure-breds."
And he gazed with dreamy eyes
Toward the misty clouds that were tinged with pink
From the glow of the western skies.
"And I'll show the big, indifferent world
How a good herd wins its way!"
But the prize he sought was won by the man
Who started his herd today.

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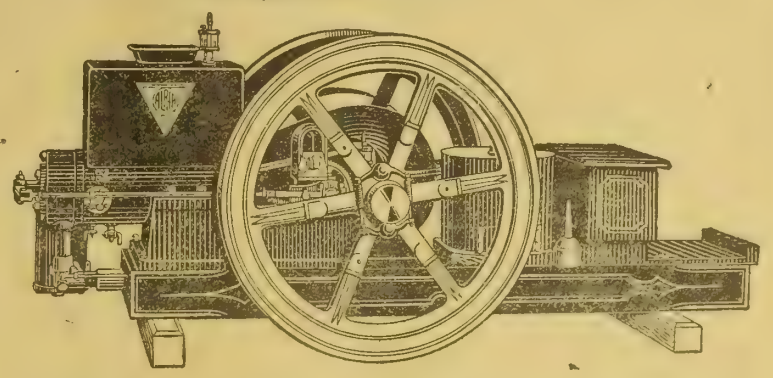

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LIVE STOCK.

"BREACHY" COWS ON THE FARM

"I had to sell one of my best young cows the other day," said a farmer, and proceeding to explain the reason this afrmer told how he had neglected his fences the last couple years, simply because his cows were not fence breakers and did not give him much trouble, and also the change that came in a few days. This one four-year-old cow developed the "breachy" habit and trouble came rapidly. She would break down the fences, the balance of the herd would follow ,and he had no end o trouble. His fences were not very good and the cows could go almost anwyhere they liked, consequently he was continualy fixing fences and often had to neglect his field work for half a day at a time. The result of the whole thing was that he had to sell this young cow that was always the leader, for a price which was far below her value, because she was a very promising young animal. Furthermore, he had already kept her too long, because she had started the rest of the herd and now they were always on the watch for a chance to break out of the pasture, a thing which was almost unknown before.

That is not a new story. It has occurred many times before, and it is safe to say that many readers of this paper have had similar experiences. Yet there is another side to such a situation. Why allow the fences to become so poor that a wholesale stampede results? In the case of the farmer referred to it was simply a case of over trust in the good behavior of his herd and it was carried just a little too far. True, he was more or less provoked ofr losing so much time repairing his fences and chasing the cows out of mischief, but yet he blamed no one but himself. He had neglected his fences and was reaping the results.

The above may be an extreme case, but many similar ones happen throughout Canada every year. The writer recalls that many years ago, when on his father's farm a herd of twenty cows broke out of their pasture and spent a night in a beautiful field of oats that was stacked up ready to be drawn into the barn. That particular crop happened to be one of the best ever grown upon the old home farm, it was the pride of its owner and the talk of the neighborhood, but that did not save it. In the morning only some twenty stooks in one corner of the ten acre field remained untouched; the remainder had been thrown helter skelter and badly damaged. The loss was a heavy one, not because of the oats that had been eaten but som cuh had been shelled, tramped and scatered about the field The other part of the story is not hard to tell. The fences were poor and a couple of "breachy" cows did the rest. The few hundred bushels of oats lost that night would have put new fences on a large part of that farm. It was an expensive lesson, but it had its effect, consequently the next spring a fencing drive began and the whole farm was gone over and made safe from the possibility of another loss as had occurred the year before. However, it did not end there, and an annual event afterwards was to spend a week or more if necessary fixing the fences, building new ones and gradually removing cross-fences so as to enlarge the fields. That had a twofold advantage; there were fewer fences to keep in repair, more material was available to fix the other fences, and the fields were larger. After all perhaps it could hardly be called a loss although it was hard to believe anything else at the time but it had the effect of leading to better fences and preventing a recurrence of the damage suffered.

The foregoing are not isolated cases, neither is the good that came out of them. It is simply a case of all prevention, not cure, and the only way to play safe is to keep the fences in the best possible shape at all times. If that is done it will only be a short time until many unnecessary fences will have been removed and the farm work made easier. The "breachy" cow is unknown upon the well-fenced farm and such a thing as having to sell a cow because she is continually leading the others and causing trouble is never thought of. It's simply proving the fact that good fences are a paying institution on any farm where live stock is kept, and that the fences should always be in reasonably good shape as there is no way of obtaining compensation after the damage has been done.

COWS GOING LAME

During the last few days a number of letters have been received from farmers complaining of cattle going lame. The description given of the affected animals has ben practically the same in all cases. The first symptoms seem to be soreness of the feet, a swelling above the hoof, in some cases the skin breaking and becoming raw and sore, and in all instances the animals go very lame. In some cases the swollen part, very red and inflamed, extends almost to the hock; the animals do not sem to be sick, and no deaths have been reported.

The cause of this trouble can be traced to the extreme wet weather. Animals put on pasture were frequently in wet low-lying places, and often in mud several inches deep. In other cases the pastures were reasonably dry, but the cows were forced through sometimes a foot of mud in the lane or barnyard and in the case of the latter the worst kind of filth, which in itself was enough to injure any animal. This filth was carried upon the heels of the animals practically day and night, and after a time it caused the skin to crack and the infection got into their feet. From that on things rapidly became worse and, of course, they got lame.

The cure for such cases is simply to remove the cause by putting the animals on dry pasture and avoid driving them through mud. This should not be a very difficult matter and when the main cause of the trouble has been removed the disease will rapidly diminish. If it does not, however, some effort should be made to [illegible] lar trouble will not occur again. Animals that are suffering with the disease should have the sores dressed with a solution of carbolic acid and water, 1 drachm of acid to 6 ozs. water, and the leg covered with a coal tar solution. Keeping the animals in a dry, clean field or stable and dressing the wounds as above will soon remove the infection and effect a cure.

DISINFECTANTS FOR ABORTION

Animals that have aborted should have their after-births removed as soon as possible and burnt up. But the removal of a retained after-birth is not ta work to be reshly undertaken by the inexperienced. If abortion occurs during an early stage of pregnancy, the after-birth is usually passed out with the young. At a later

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Shorthorns

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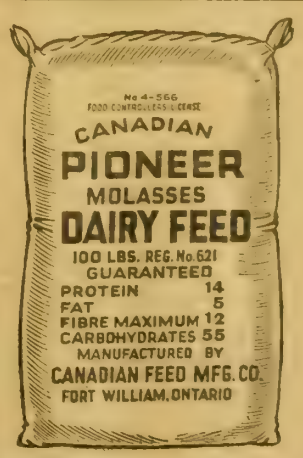

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stage it is almost invariably retained, and in those herds in which contagious abortion is present, but in which the calves are carried full term, retention of the afterbirth is frequently the only symptom of abortion. When this failure to promptly pass the afterbirth is observed in several members of a herd, it is almost conclusive evidence that the disease, commonly spoken of as contagious abortion, is present.

Removal of After-birth

It is almost a physical impossiblity to completely and thoroughly remove the retained after-birth of contagious abortion, and many good animals have been ruined by attempts to do so. In the present state of knowledge the best that can be done with a retained after-birth is to keep the outside gentials as clean as possible with antiseptic washes, to wash out the vagina daily with an antiseptic wash so as to remove accumulated decomposing material. For an antiseptic to wash the outside gentials and tail as well as the limbs down to the hoofs, use a two per cent. solution of creolin or a half per cent. solution of lysol, until all discharge from the vagina has disappeared. Cows that have aborted should not again be bred until two or three months have elapsed, so as to prevent extension of the infection, and afford a better chance of becoming pregnant after. Even cows and heifers on infected farms, though apparently healthy, should be kept clean with the disinfectants around the after parts, about the tail and external gentials.

Regarding the after-birth itself, Geo. M. Potter, of the Kansas State College of Agriculture, says: "It should be pulled on gently by grasping it with the hand in the vagina and as close to the neck of the uterus as possible, and it is to be removed only when it comes away easily. It may be necessary to repeat these manipulations daily for several days; patience and perseverance, combined with the skill of experience, will bring the best results. Under no circumstances should force be used, nor should a portion of the after-birth be removed, because as stated heretofore, as soon as the after-birth no longer hangs through the neck of the uterus the latter will close and imprison the remaining portion so that it cannot be removed, but be slowly absorbed, leaving the animal's health permanently ruined and her breeding power destroyed.

"It is not the idea to convey the impression that ideal results will be obtained from the foregoing treatment. If properly carried out, though it requires severe and exacting labor, it will give better results than any other line of treatment practised at the present time."

To Guard Against Infection in Male and Female

It is recognized as impossible to absolutely disinfect the gential organs, but by applying disinfectants it is impossible to reduce the vitality of all germs, and especially those causing ordinary infection, so that nature will have an opportunity to effect a cure. Strong disinfectant injections should never be used, as they do more harm than good owing to their corroding effect.

Immediately after abortion occurs the cow should be washed out with from a few pints to a few gallons of lukewarm disinfectant solution. The amount will vary, as a rule, much less being required when abortion has taken place early in pregnancy. The general rule is that the washing out should be continued until the solution comes away clear.

With the male the long hairs at the opening of the sheath should be kept clipped as short as possible, and the area around the opening should also be well washed with soap and water. The interior of the sheath may be disinfected with the same class of agents as previously recommended for the cow. The number of washings also vary greatly. If the infection is slight, as indicated by little or no discharge, one washing may be sufficient; if there is much discharge, as is generally the case with the cow, the washing should be repeated daily.

In all this work it is of prime importance that the strictest cleanliness be observed, and the operator's hands must be thoroughly clean before commencing the work of disinfection.

The following disinfectants may be used for internal washings: (1) A one-half of one per cent. water solution of carbolic acid, which for practical purposes may be made by adding a teaspoonful of carbolic acid to one quart of water. (2) A one-fourth of one per cent. water solution of compound solution of cresol, being one teaspoonful to one-half gallon of water. In some instances, especially immediately after calving or abortion, even such weak solutions cause the animal to strain violently. In that case it is probably better to use (for a few days) a salt water solution made by adding salt to tepid water in the proportion of a smooth teaspoonful of salt to a pint of water.

FEEDING FOR BETTER WOOL

There are few details of the sheep business more worthy of the interest and study of the farmer than the subject of increased and better wool productino and just in proportion as he brings his mental and physical energies to bear along these lines will he reap his infiiancial reward. It is only within recent years that practical sheep breeders and scientists have realized the relationship that exists between feed consumed and wool production. It is now known that a well fed sheep produces both a heavier and a better fiecee than an under-fed one and experiments have proved that the extra weight and quality of wool pays for the extra feed, besides giving a heavier and more thrifty sheep. When a sheep is well nourished and thrifty, the wool fibre pushes out strong and full, and there is sufficient flow of oil from the root to keep it bright and smooth, but when poorly nourished, the wool fibre is poorly nourished also, and it is thin, weak and dull. The man therefore who wants to produce either much woo or good wool must keep his sheep well fed. Though care is necessary at shearing time to produce a clean marketable article, the crop of wool must get its proper attention throughout the year before the highest profits can be derived from the industry.

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41

SEASONABLE VERSE

Mary had a little lamb
In days of long ago;
It followed her most everywhere—
At least, the rhyme says so.

It even went with her to school
And used to romp and play,
But things would be quite different
Were be alive today.

I've never heard that little Mary
Packed along a gun,
Nor have I heard that she
Invoked the law on anyone;

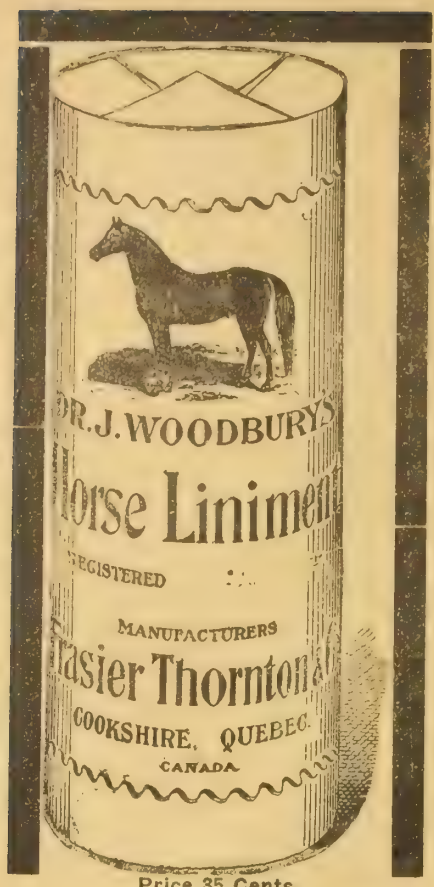
And so I'll say that Mary
Must have been a clever kid
To guard her lammie from the naughty
Dogs the way she did.

How fortunate that Mary
Didn't live in Chelsea, Maine,
Where all her careful watchfulness
Would surely be in vain.

Poor little lammie couldn't shake
His tail three times I bet,
Before those nasty poodle dogs
Would have him killed and et.

L. F. Dyer.

Augusta, Me.



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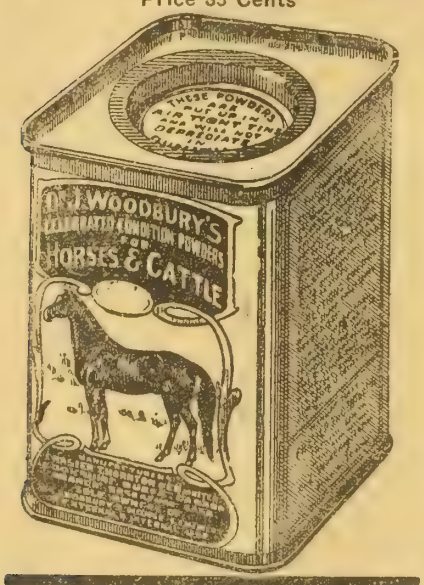

THE HORSE

HOW TO GROOM AND CLEAN FARM WORK HORSES TO FIT THEM FOR THEIR DAILY TOIL

There is quite a lot of ink used in bulletins and in the agricultural press generally, in describing how a horse should be fed, while very little is ever used in setting forth how he should be groomed. Though this detail in the management of horses does not apparently hold the same important place in horse management literature, it is, notwithstanding, one of the most essential duties of the horseman.

There is more economy in horse power, due to the regular and proper methods of grooming than the average horse owner knows, if his usual neglect of that operation is any evidenc eof his knowledge. Spasmodic fits of grooming, a day or so after the horse has been sweating heavily, and looking so wretched that something has to be done to improve his appearance, does not count for much in horse management. Many men are under the impression that an idle horse does not require grooming; they do not realize that if the horse is properly cleaned every day during the winter months, the spring moths' duties are lightened for the horse and his caretaker alike.

More work will be accomplished on the same feed ration, and the horse will keep in better health if regularly groomed throughout the year.

The Value of Grooming

There are only a very few of the men owning horses who really understand the art of grooming. A really good groom has more influence on the value anad popularity of horses than even a breeder of horses who prides himself solely on the blood lines of his animals. It is one thing to breed horses, but it is another thing to have them feeling good and fit, which constant grooming and cleaning will do.

A horse is never in the highest state of health unless the pores of his skin are kept free from the accumulation of scruf which forms whenever he sweats. The object of grooming is to remove this obstruction, as well as to brace the nerves of the surface by the friction of the brush. This grooming should be done daily, even if the horse has not sweated, and it should be repeated whenever he comes in from work. This will necessitate the removing of the harness at noon, a proceeding that is not common in Canada. In Scotland the custom is different ,no farmer ever allows the work horse to stanad at noon with the harness on. The horse gets two hours at mid-day, from 11 a. m. to 1 p.m., and one of the hours is spent by the horsemen in grooming.

The cleaning of a horse that comes in from work will vary according to the condition of the animal when brought in. It will depend on whether he has been sweated anad has become cool again, or if he is still wet or has enough exercise to keep him warm, or has been driven over muddy roads. A horse coming in wet and dirty after work should never be left in that condition until next day. There should be a deep steady pressure of the brush into the roots of the hair, so as to remove all the scruff that collects around them and clogs the pores through which the sweat ought to be allowed to exude freely. A good brush used daily not only gives a polish to the coat, but it brings a secretion of a fine oil, and that latter has a tendency to throw off water, and thus save the horse exposed to rain, from catching cold.

How Grooming Should Be Done

The horse should first be thoroughly gone over with the curry comb. Then taking the brush in the hand nearest the head, which ever side he begins on, the groom should work away at the head and face until he has thoroughly cleaned these parts, carefully clearing out the dust and dirt from the roots of the ears, where it is very apt to lodge, and continually cleaning his brush with the currycomb in the other hand. Next, he should take the neck, turning the mane over to the other side, and then the shoulder and legs, finishing off with a wisp of hay. The hind quarters and flanks should be treated in the same way. In the spring when the coat is being shed, the brush should never be used and the wisp alone should be employed. The brush will spoil the looks of the new coat, so will the currycomb. The currycomb should, in fact, never be allowed to touch the skin of a horse, when the coat is being shed anad is cruel as well as injurious to the apearance.

The mane and tail should be brushed and combed beginning at the lower end, if it is a full one, not touching the top unti lthe bottom is smoothly arranged. A clean sponge should be squeezed out and the nostrils, eyes and anus sponged clear. If necessary the mane may be dampened so that it can be smoothly brushed and combed down on its right side.

Last the legs and feet must be attended to, the legs being washed with a wet brush kept for the purpose and dried with a cloth. Horses' legs should be wiped and dried every night if wet, and when doing this, a lookout kept for any cuts or burises.

It sometimes happen sthat a horse covered with mud is allowed to dry it all on. If the paritcles of mud are few and far between and are already dry or nearly so, they can be removed by friction alone, but if still wet, and in large masses, water must be used to get rid of them and the legs, flanks and body will require a good slushing with brush and water before it can be gotten rid of.

A piece of hoop iron makes a useful scraper and this is the best way to squeeze the water out. The tail, if a long one may be best cleaned by being put in a bucket of water, and washed with the hands. To clean a white or light gray horse whose coat has gotten discolored through lying on dung during the night, a cloth, warm water and soap is the quickest way. If a slight tinge of brown remains this may be gotten rid of by using washing blue, a small bag of which may be dipped into clean water and the skin washed with it, after the soap has been gotten rid of. The quantity required is easily measured after one or two trials.

There are many drugs that will give a gloss to the coat, but their ultimate effect is to diminish the resist ing power of the skin to bear exposure. When grooming is neglected, the horse soon loses flesh and condition and generally deteriorates in health.

COMMON AILMENTS OF FARM HORSES

"Most common ailments of horses can be prevented by a little care and attention on the part of the owner or groom," said Dr. Baker, of Toronto, in addressing a short course of farming held in Eastern Ontario recently. "In my experience," continued Dr. Baker, "there are more ailments brought on in horses by careless feeding than all other causes combined. The feeding of too much hay is one of the greatest causes of these ailments, and the practice is costing the farmers of Canada a large amount of money every year, both in hay wasted and time lost by sick horses, besides veterinary bills and medicine. Until the farmers of Canada reduce by almost one half the amount of hay they feed at present, they are going to have sick and unthrifty horses. Of course that may seem a strong statement, but when one considers the size of the stomach of the horse and then compares it to the bulk of hay generally fed, it is easy to understand. What actually happens to the horse whose manger is filled with hay at night? Well a horse is a peculiar animal. He

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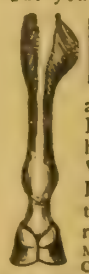

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will not lie down for any length of time if there is anything for him to eat; he will rise through the night three or four times and eat hay. In the morning his stomach is full of hay. Then he is given a feed of grain, but there is no room for it, and when watered the grain is washed out and goes into the manure. It may be ground up and not noticed, but it is there nevertheless, and is largely wasted.

"If given a limited amount of hay at night, the horse will clean it up in a short time and then lie down and rest. There will be no hay in his manger to entice him to rise, consequently he will remain down most of the night. In the morning his stomach will be empty and he will get the benefit of his morning's feed.

"Take for instance horses belonging to fire departments," continued Dr. Baker, "they are fed properly and they are always in high condition and the best of spirits. They work hard and are never sick, the chief reason being that they do not receive large quantities of hay and water. Water is another thing that most horses receive too much of it. Never allow a horse to gorge himseld with water for the more he takes the more he wants and he will keep it up, one pail of water at a time is plenty for the heaviest horse in Canada. It is good practice to give a horse a few swallows of water frequently if driving on the road or working, but do not allow him to fill up with it. Horses should be taught as colts not to drink too much water. They are easily learned and they will not look for it as they grow older.

"Another thing that causes a heavy loss among horses is feeding the same quantity of feed a day when horses are idle, as when working. That is what causes most cases of colic, stiffness or paralysis, scratches, lymphaugitis, and swollen legs. Every horse owner knows how hard some of these ailments are to cure, but they can be prevented by a little care in feeding. Reduce the feed on idle days, Sundays, etc., and feed a bran mash instead of the heavy grain."

HORSE AND TRACTOR

The breeder of good horses has scant reason to lie awake nights worrying about the future. The only man who has reason to fear the onward march of the farm is the one who is wasting his time growing plug horses. Thousands of farms are horse poor with those mediocre animals that a market buyer won't look at. This is the class of horse the tractor is going to eliminate. It is the only part of the horse-breeding industry that the tractor is going to injure.

In the future the horse and the tractor will pull together. They will make a willing team for agriculture. The tractor will supplement and conserve horse power and vice versa and the combination of horse and mechanical co-operation will mean better farming methods and more economical operation of land. The properly equipped farm of tomorrow will employ both horse and tractor power. The land operator will use the one or the other consistent with his needs and the seasons.

The man who is still frittering away his time and energy growing cheap horses might as well face the music. The farm tractor will elbow him and his scrubs out of the way. He should study carefully the "hand writing upon the wall;" it will assure him of the profitable days to come when the scrub only exists in memory.

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THE LAWRENCE-WILLIAMS COMPANY, Toronto, Ont.

CURE FOR THRUSH AND WORMS

I have a horse that is suffering from hoof disease. The hoof around the cleft of thefrog is filled with matter that has a disagreable odor. What is the best cure for worms in horses?

The hoof of your horse is affected with thrush. It is caused by standing in water and filth, such as wet straw and stable refuse; frose bite or neglect of systematic cleaning of the hoof of all mud or baked dirt. Place the horse in a clean stable with a dry floor, well littered. The seat of the disease foot should be cleaned, the excessive growth removed, and calomel applied as follows: Calomel, half an ounce; sweet oil two ounces; mix and spread on a piece of lint or oakum and insert in the cleft of the frog, and over the other diseased parts.

For intestinal wounds use a vermifuge made as follows: Oil of turpentine, two ounces; oil of male fern, one drachm; linseed oil, half a pint. Give after a purge and on an empty stomach. Repeat the dose after a week, followed with a drachm of powdered sulphate of iron in the feed.

For thread worms the treatment should be by injections up the rectum, made of oil of turpentine, two drachms; linseed oil, one pint. Use every morning for a week.

CARE OF BROOD MARE

Let the brood mare live as near a normal life as possible. Given a sufficient amount of mixed, wholesome food, such as oats, bran, corn, alfalfa, prairie hay, oat straw, corn fodder, carrots, rutabagas, she will balance the ration. Allow no valuable mare to be pampered, for those that have the freedom of all out-of-doors and live on nature's pastures go through the ordeal of pregnancy and parturition with the least inconvenience and danger. Regular exercise is absolutely necessary, an energetic high-life animal will take enough exercise if turned out for several hours each day. For those not so ambitious forced exercise is necessary, place in harness every day for several hours. Avoid all severe exertion and injuries, as far as possible. Each pregnant mare deserves a stall to herself. As the period of parturition approaches watch conditions of bowels closely and reduce the diet, remove the mare from the work-horse stable (which is a hot bed of disease microbes); if possible place her in a clean, disinfected maternity stable, with an abundance of sunshine, fresh air and clean straw. Keep the mare and stable scrupulously clean at this time, have her well groomed each day, no dirt on belly, banks or legs and wash with good disinfectant, especialy the udder, before allowing the young to nurse.—N.D.A.C.

If you can't get things to coming your way try some other way.

Julicious feeding does not mean excessive feeding ,but feeding to get the largest net returns.

John Lumsden, of Ottawa, writes about his Cletrac Tank-Type Tractor:
"Besides pulling a three-bottom 12-inch Cockshutt Plow in old sod full of Scotch grass, I have run my 30-inch Threshing Machine with Blower, and also filled my silos, using a No. 3 Blizzard Corn Cutter."

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That's when the farmer makes big money—when his farm is in good shape—when every acre is under crop and the yield is big, because the land is well worked.

With a Cletrac Tank-Type Tractor a farmer can get his place in the best possible shape.

Wet weather or hot weather does not hold field work back. Every acre he wants to put under crop is ploughed in quick time. Discing and harrowing are done—and done thoroughly—at the right time.

The Cletrac is the tractor that carries its own tracks like a "Tank." It does not pack the soil. It travels 3½ miles an hour on ploughed or wet land *without slipping.*

It has 12 h.p. at the draw-bar—for hauling in crops, as well as for field work.

At the belt pulley—20 h.p. Ample for any job on the farm, from silo-filling to operating a junior thresher.

Low set—will work under trees. Handles easily. Swings in small radius.

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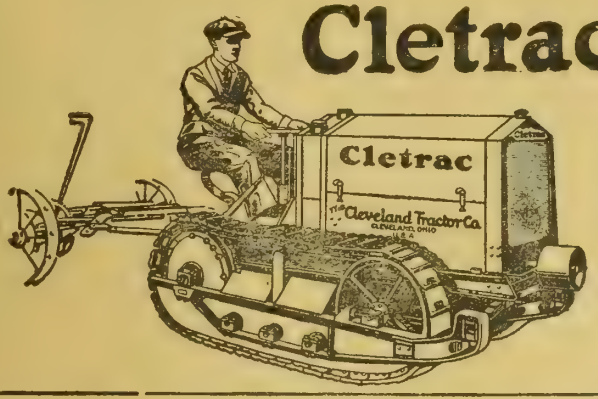

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Butter Parchment at Farmer Office

POULTRY.

AN UNOFFICIAL "RECORD OF PERFORMANCE FOR POULTRY

A review of the present and prospective egg and poultry situation points strongly to the fact that the economical production is going to be an increasingly important factor in meeting the competition of the world on the export market.

While the cost of unit production in the poultry busines is affected by many conditions, it has been clearly evident for some time that no factor has a more potent bearing on cost than the productiveness of the individual bird. It requires a certain number of eggs to pay for the feed fed and labor expended. The number required varie acording to the cost. Profitable production can only be obtained by having a safe margin of eggs over the equivalent of cost, the more eggs per bird the greater the remuneeration.

Increased production both in the individua land in the flock has been shown to be largely a matter of breeding. The Record of Performance for poultry is a policy planned to give point, direection and encouragement to the breeding of poultry along lines of greatly increased individual and flock production.

The minimum record to permit a bird to qualify in the Record of Performance has been set at one hundred and fifty eggs in fifty-two consecutive weeks and for qualifications in the Advanced Record of Performance a minimum of two hundred and twenty-five eggs in fifty-two consecutive weeks. The weight and quality of the egs during the month of April shall not be lower than that of the grade "Specials" in the Canadian Standards.

Certificates will be issued for all birds qualifying in the Record of Performance. The birds that qualify shall also be identified by a sealed band and the number registered.

The Record of Performance for poultry is to be divided into two parts, "A" and "AA".

Record of Performancee "A"

This is to consist of the inspection of trap-nested flocks on individual poultry plants and shall be similar in form to the Record of Performance for dairy cattle. It will be open to any breeder that wishes to enter his flock and will be under the supervision and inspection of officers of the Poultry Division of the Live Stock Branch.

Record of Performance "AA"

This will consist of the conducting of tests under Government supervision and on Government or neutral ground, for the purpose of obtaining an official record by actual trap-nest results.

This official tesst may be conducted by either Federal or Provincial Government or Colleges and may be secured by:

1. "Laying Tests."
2. "Laying Contests."

Record of Performance "AA" will be under the supervision and direction of officers of the Poultry Division of the Experimental Farms Branch.

Official Requirements of Entrants in Record of Performance "A"

All entries shall be made upon forms supplied by the Department and subject to Departmental rules and regulations.

Applications for entry must be dated and mailed one month in advance of the date it is desired the record shall commence. For purposes of organizations during the present year 1919, aplications will be received for individual birds to commence their records on the 1st of September, the 1st of October, the 1st of November and the 1st of Devember. There shall be an entry fee of one dollar (1) for the first ten birds entered and five cents (5c.) for each additional bird.

Defies the Breeze and Bluster

Whether in cutter or auto, drivers and carters speed undaunted through winter's roughest weather in Atlantic Underwear.

Postmen, policemen, truck drivers, farmers—all men who work in the great out-doors, find Atlantic underwear the best for winter wear.

A heavy, comfortable stout wearing garment that the cold cannot penetrate, Atlantic underwear means health and comfort to thousands of red-blooded, out-door workers.

Sold in five different weights and qualities. Our lower-priced lines are not equal to the more expensive ones, but each is guaranteed to be the best value of its class. Compare them with others of like price and see for yourself.

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UNSHRINKABLE
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Only pure bred stock of standard varieties and free from standard disqualifications may be entered.

The minimum entry shall not be less than ten birds from any one flock.

All stock entered shall be trap-nested during the period of the official test, which in no case will exceed fifty-two weeeks.

All equipment on inspected plants shall be kept in a clean and sanitary condition.

Records shall be kept posted up to date at all times for the information of visiting inspectors.

Only eggs actually found in trap-nests shall be counted.

Entrants shall use prescribed record forms. These shall consist of weekly house records and monthly or yearly book records. The weekly records shall be mailed regularly by the breeeder to the Department.

The fullest information shall be given to official inspectors and any entrant who offers opposition renders his entry liable to cancellation.

Methods of Inspection

All flocks will be placed under systematic, periodic, unannounced inspection. Official visits will be at irregular intervals; they may average once a month or more frequently as occasion demanded.

The general health, condition of the stock, current productiveness and the ordinary physical and visual tests of egg laying will be used by inspectors in checking the accuracy of the records.

Inspectors required for the Record of Performance will be chosen by Special Civil Service Examination.

In case of an inspector's decision being questioned by the owner of the flock, another eexamination by the inspector may be given or, at the option of the Department, another inspector may be sent. In either case a second inspection by the same or another inspector will be considered final.

For particulars in reference to Record of Performance "A" inquire of the Poultry Division of the Dominion Live Stock Branch. Ottawa.

Record of Performance "AA".—General Information

Laying Tests and Laying Contests both will be used as mediums to obtain the qualifications for entrance to the Record of Performance. The major portion of tests and contests will be conducted by the Experimental Farm upon its Central and Branch Farms but Provincial Departments of Agriculture and Colleges also may conduct these.

Laying ests are distinguished from contests in that they are not competitive, but merely for the purpose of ob-

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I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

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I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
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Windsor, Ont.

taining an official record of production. At present complete arrangements are made by the Dominion Experimental Farm to hold these tests at all of its Farms throughout the Dominion.

The laying contests will be conducted this year as follows: World's Contest at Central Experimental Farm, Ottawa, on the Branch Farms at: Charlottetown, P.E.I., Nappan, N. S., Cape Ruoge, Que., Brandon, Man., and Indian Head. Sask. All contests have ten birds to pen and start November 1st, continuing ofr fifty-two weeks.

Aplications for both tests and contests on the Experimental Farms must be made before September first, but as the number which can be accommodated is limited, it is advisable to make application early. Entry blanks, Rules and Regulations, may be secured from the Poultry Division, Experimental Farm, Ottawa.

All birds in tests or contests that qualify for Record of Performance or Advanced Record of Performance will receive the certificate of registration.

WHAT AND WHEN TO MARKET

Need of Seasonable Marketing

Poultry produce should be marketed as soon as it is ready. The sale of eggs conforms to this rule better than does the sale of meat, for the bulk of poultry meat is sold within a few weeks in the fall. One of the reasons for the regular slump in prices in the fall is because so many hold all the poultry they have for sale until that season, whereas it would be better if sold when ready any time during the year.

What To Market During the Summer Months

Though the summer months may not be the months in which there is the greatest proportion of poultry meat for sale, there is considerable whch can be disposed of between July and October. Among these may be enumerated the following, coming largely in order of readiness—cock birds, hens, broilers, green ducks and roasters.

Cock Birds

As soon as the breeding season is over, all males should be disposed of. Infertile gegs keep better than fertile eggs. There is no use in feeding the extra males when they might be turned into money and the feed saved, and it does not pay to feed them for another breding season.

Hens

When the hatching season is over, a number of the breding females may be selected and marketed. Those that have stopped laying had better be culed out, and those over-fat and old. At this time of the year hens bring a higher price than they do in the fall.

Again, later, another selection may be made. Hens that are beginning to moult, say during July and early August, might just as well be sold. The good hens, the hens you want as next years breders, are not the ones that moult early, but the ones that moult late in the fall.

Broilers

As a rule, where one is situated near a good market, be that a city or summer tourist trade, broilers will bring a better price than the same birds might bring in the fall as roasters, and the feed, room and trouble are saved during the summer months. The only time to sell Leghorn cockerels is when they reach about two pounds each in weight.

Green Ducks

The only time to sell ducks profitably is when they are from ten to twelve weeks old. That covers the period of cheapest production. Usually a green duck will bring as much per duck in the fall and the expense is very small in proportion.

Roasters

The bulk of young cockerels will no doubt still be kept until fall and sold as roasters, and it tis not supposed that every person is in a position to dispose of them as broilers.

Crate-feeding Anything

Make the rue that none goes off your place without special crate feeding. The finishing touches pay best and the farmer who markets poor cockerels is deliberately throwing away a large percentage of his profits. Crate feed for three or four weeks before killing, and in the killing and marketing follow directions given in Bulletin No. 88, Experimental Farm series, which may be had on application.

Culling

The time for culling is always now. Whenever you see a bird that is not doing well, pick it up and put it into a crate. Make sure that it is fleshed, and then kill it for your own use or for sale. Start culing as soon as the chicks are out and cul every day, or whenever you se anything that needs culling. Keep the buds growing throughout the summer. Give them plenty of feed, shade and water and lots of milk.

Keep the chicks growing throughout the summer. A stunted chick is unprofitable. Sow green crops for shade. The hot sun on growing chicks stunts them. Look for lice and mites. Spray them often with a good disinfectant. Give the henhouse its annual house c leaning and white washing.—F. C. Elford.

Shorten the Molt
HENS can't lay when molting, they are too busy making feathers. And at this critical time they are in danger of contracting disease because of weather changes, lack of plumage and weakened condition.
Hurry your hens through the molt and get them back on the job.
Pratts POULTRY REGULATOR
puts new vigor into weakened molting hens, gives them strength to resist disease, carries them quickly and safely through the molt, and starts them laying with no serious loss of profits.
Speeds up the pullets, too, and gives you more eggs when prices are high.
"Pratts" supplies those necessary tonics, appetizers, digestives and laxatives which are lacking in the usual poultry ration.
For nearly 50 years the favorite of successful poultrymen everywhere.
Try it at our risk.
MONEY BACK IF NOT SATISFIED
Mr. W. A. MacKinnon, 727 Tenth Ave., Calgary, writes: "I have been using your Poultry Regulator this winter on the recommendation of a friend, and have been agreeably surprised at the increase of eggs from my flock."
Order to-day from your dealer. Popular priced packages, also money-saving 25-lb pails and 100-lb. bags.
Write for FREE book on the care of Poultry.
Also use PRATTS ANIMAL REGULATOR
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YELLOW SHANKED HENS

Where facilities have been provided, enabling the poultryman to become familiar with the laying records of each individual hen, it has been found that in the yellow shanked breeds the hens that are consistent layers lose their shank color. This shank color comes originally from pigments in various foods such as yellow corn and is carried by the blood and deposited in the shanks and beaks, and even in the plumage, if there is a surplus of pigment. When a hen lays heavily, the yolk of the eggs require all the pigment and the deposition in the shank ceases. The pigment that is already in the shanks wears away with the epidermis, or else is taken up by the blood and carried to the yolk, where it is deposited. This causes the shanks to fade, and the greater the egg production the less color will be found in the shanks. When the hen ceases to lay, the color will return. When selecting the layers in the flock, this is an excellent criterion to use in eliminating the unprofitable hens.

The hen's greatest profit-producing period is during the first and second years, and unless a hen is an exceptionally good breeder she should be disposed of at the end of her second laying season, before beginning to molt. Few eggs can be expected until the pullets are matured.

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

Whene'er a noble deed is wrought,
Whene'er is spoken noble thought,
Our hearts in glad surprise,
To higher levels rise.

Honor to those words or deeds
That help us in our daily needs,
And by their overflow,
Raisè us from what is low.
—Longfellow.

A SUCCESSFUL EXPERIMENT

(By Gordon Carruth)

He put his paper aside abruptly, rose and walked down the leaf-strewn path to the other bench, where the girl was sitting.

"Would you like to try an experiment?" he asked quietly, standing with hat in hand before her.

She looked at him for a moment unsmiling, her expression neither inviting nor repelling.

"Perhaps," she said at length.

He sank into the seat beside her. "It is something I have often wanted to try," he said slowly. "Here are we two, perfect strangers in a city of five millions, and never likely to see each again after we leave this chance meetinv place. We have sat here half-anhour, each pretending to read, or to watch the squirrels, or the falling leaves, or the misty golden sunshine out there on the field, but each examining and appraising the other when the other wasn't looking.

"Now, this is the experiment: We have each gained a strong first impression of the other. Let us with absolute frankness, tell each other what those impressions are. Let us do what friends cannot do—speak without reservations, made for fear of hurting each others feelings."

She sat without speaking for a moment after he had finished, gazing thoughtfully out at the warm expanse of autumn-tinted park.

"But why?" she asked at last. "I am not sure that Burns was right. Perhaps it is just os well that we can't see ourselves as others see us."

"That" he said, "makes it an experiment. It will be a new experience. I want to know exactly how I look in the eyes of a stranger, however much the knowledge may hurt. Have you ever felt that way?"

"Yes," she said. "I have. Eeeryone does, I think."

We"ll, I'll tell you, if you will do as much for me."

Again she hesitated and sat silently watching a gray squirrel that, untroubled by self-consciousness, was busy burying a nut.

'Well,' she said finally, "you first."

"The fact that I came over here and proposed this experiment to you at all shows that I thought you a sensible girl," he began slowly. "You impressed me as befng neither a prude nor a flirt. You are pretty—I dont' need to tell you that—but it has not spoiled you. You are rather thoughtful and studious, and you have a genuine feeling for the beauties of nature—something which too many girls just pretend to have. You are not above, I believe, taking interest in babies and embroidery, although you know what is going on about you in the world and read something besides the woman's page in the newspapers. You don't work for your living, and your home is one of the comfortable houses in the seventies. You see a good deal of the healthy side of life, but you keep healthfully busy at serious things. You are probably a suffragist in a quiet way, and you are also interested in some form of social or philanthropic work, which you do not treat as an heroically assumed duty, And—

He was interrupted by the girl's low laughter. "Why not say that I have all the good qualities, and be done with it?" she asked. "Your impression is certainly not very accurate. Let's see if I can do better.

"You it seems to me, have many of the excellent qualities that you are attributing to me. You are nothing of a sport, but are a rather serious-minded young man, somewhat too much given to introspection. You are not bad looking, and you impress me as having a good deal of common sense. You are about twenty-five, and you are one of our rising young professional men—an architect, perhaps, or an engineer of some sort. You read a good deal, and, when it comes to newspapers, something besides the sporting pages. You also live in one of the better homes in the Seventies or the Eighties, and you are a confirmed New Yorker. There, how is that for a snapshot portrait?"

He did not answer at once, and they both sat silently for a few minutes. Presently he said gloomily:

"My experiment has failed, I'm afraid."

"Of course," she assented gently. "It was bound to. It shows of how little worth a first impression is anyway. You wondered if the defects that you see in yourself were apparent to others, and you are half disappointed that they are not, for you do not like the idea of wearing a mask. Isn't that it?"

"Yes."

"And yet you must have known, except in moments of self-depreciation, that you make a favorable first impression; and I know that I do, conceited as that may sound.

"All right," he straightened up abruptly. "Then we come to the second part of the experiment. We will now tell just how badly each of us is mistaken."

"Well—" she hesitated. "We can try it but that also is a pretty hard thing to do."

"Listen to me first," he answered, "while I tell you what a poor judge of character you are at first glance. I may have a sense of humor, but it doesnt work very well. I am gloomy, pessimistic and am rapidly developing into a chronic grouch. I am not one of our rising young professional men; I am a clerk in a large mercantile house, and there hasn't been anything startling in my rise yet. I may have common sense, but it doesnt keep me from making a fool of myself about half the time. I lack purpose and determination. I may be domestic by nature, but that's all the good it does me. So far from living in a brownstone house in the Eighties am I that I live in a single room down in the Twenties. I come from Michigan and am a comparative stranger in New York. I read a good deal, it is true, and you are right about the sporting page, but I don't believe that I ever had an original idea in my life. And—well, I might go on at considerable length, but how do you like the retouched portrait so far?"

The girl was laughing at him again. "I think the portarit none the worse," said she; "especially since you are clearly in a mood for self-disparagement. Let me alter your portrait of me a little. I hope that I am sensible, Im not a flirt, but I'm not so sure that I am not conceited. I like babies and embroidery, but Im not interested in charitable work and I do read the woman's pages in the newspapers. I don't live in a brownstone house in the Eighties either, but have a room up in the One Hundred and Eighties. I earn my living by teaching a class of little Greek, Italian and Russian children down in an East Side school, and I dont move in any other society. I have a bad temper; I'm afraid my pupils suffer a good deal at times. No doubt, I am more studious than most girls but I like the movies and candy and all sorts of frivolous things very much. Now how do you like the retouching?"

"Well," he admitted gravely, "I rather think it improves the portrait; it makes it so much more human."

They fell silent again watching the sunshine on the colored trees.

"You are quite right about one thing," said the girl presently. "I love the trees and fields and the sky. I was brought up in the country, and I don't believe I could stand it here in these endless miles of brick and stone is it were not for the park."

"I come here often myself," the man said. "Do you?"

"Every Sunday afternoon. I like this spot best of all; the view is so beautiful."

"So do I."

The sun had left the trees and they could see the lights of the city twinkling like brilliant stars."

"Do you know," said the man, rising. " think my experiment is not going to be a failure, after all, though it has not resulted as I expected."

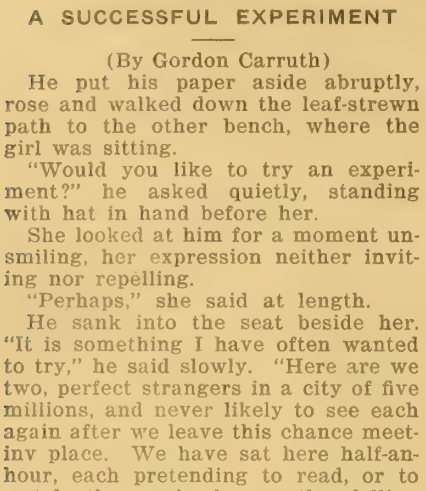
"Perhaps it won't," answered the girl quietly.

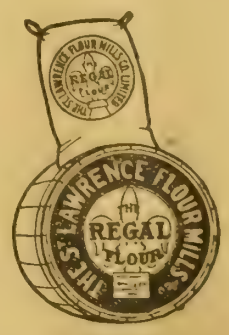
There was a moments' pause. Then —" will say only—goid night," he said.

He turned and walked along the darkening path. As he reached the bend he broke into a cheerful whistle. The girl smiling walked briskly away. She was wondering what she would wear next Sunday afternoon ahi he wa strying to decide if it would be wise to take a box of candy with him.

Orange Nectar

1 quart tea infusion.
Juice 2 lemons.
Juice 2 oranges
1 pint ginger ale.
Very litle syrup (to taste.)





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Far more effective than Sticky Fly Catchers. Clean to handle. Sold by Druggists and Grocers everywhere.

PICKLES SWEET AND SOUR

Small Cucumber Pickles

Select cucumbers or gherkins not over a finger in length. Wash them carefully, place them in stone or glass jars and cover with the following liquid:

1 cupful of mustard.
1 cupful of salt.
1 cupful of sugar.
1 gallon of vinegar.

Lay as mall plate or round board upon the pickles and weight down with a clean stone. f you raise your own cucumbers pick them every day, wash and dry, and add to those in the jar.

Dresden Pickles

12 cucumbers.
6 onions.
6 green peppers.
6 red peppers.
5 bunches of celery.

Put the ingredients through the coarse cutter of a meat grinder and let them stand in salt and water over night. In the morning rinse and drain well and remove the seeds from the peppers. Add the following liquid to the mixture:

3 pints vinegar.
2 tablespoons of white mustard seed.
1½ pints of sugar.
2 tablespoonful of celery seed.

Cold Relish

1 peck of ripe tomatoes that have stood over night.
4 green peppers seeded and chopped.
2 cupfuls of chopped celery.
5 ounces of white mustard seed.
5 chopped onions.
1 cupful of salt.
4 cupfuls brown sugar.
5 cupfuls of vinegar.

Stir the ingredients together thoroughly and put up cold in cans.

French Pickels

1 peck of green tomatoes sliced.
6 large onions.
½ cupful of salt, sprinkled on mixture.

Let this stand over night, drain thoroughly in a colander, boil fifteen minutes in two quarts of water and one pint of vinegar. Take out and drain. Boil until tender in four quarts of vinegar ,two pounds of sugar and half a pound of white mustard seed. Tie one tablespoon each of all kinds of spice in a muslin bag and cook in the mixture. Put the pickles in a stone jar.

Tomato Ketchup

2 quarts of tomatoes sliced, 2 onions sliced. Cook together and rub through a sieve. Add the following ingredients:

2 cupfuls of vinegar.
2 cupfuls of sugar.
1 tablespoon mustard.
1 tablespoon cloves.
1 tablespoon of cinnamon.
1 tablespoon salt.
1 tablespoon pepper.

Bottle after cooking an hour.

Sweet Pickled Pears or Peaches

5 pounds of fruit.
3 pounds of brown sugar.
3 pints of vinegar.
1 ounce stick cinnamon.
½ cupful whole cloves.

Boil the sugar, vinegar, cloves and cinnamon twenty minutes. Dip the peaches quickly into hot water and rub off the down with a clean coarse cloth: Put half of the fruit into the sirup and cook until soft, remove to glass jars with a perforated skimmer, and cook the remaining fruit in the same sirup. Boil down the sirup when the fruit has been cooked and pour it, scalding hot, over the fruit. Seal.

Pickled Onions

Peel small white onions and let them stand in strong brine for four days, changing the liquid during that time twice. Heat more brine to the boiling point, add the onions and boil three minutes. Remove the onions, throw them into cold water and leave four hours. Pack them into jars with whole mace and white pepper-corns and cloves. Cover with scalding vinegar containing one cupful of sugar for every gallon. Bottle while hot. These may be used in a month, but are better after the third month.

Tomato Pickle

1 peck of green tomatoes.
2 heads of cabbage.
1 dozen onions.
1 dozen green peppers.
1 dozen red peppers.

Cut and salt overnight, then drain in the morning. Add:

1 ounce celery seed.
3 pounds of brown sugar.
4 ounces of mustard seed (yellow.)

Cover with vinegar and cook.

Pickled Beets

Select firm beets, wash well and put on to cook until tender. When thoroughly done remove the skins and slice about a quarter of an inch thick and pack in jars. To one gallon of vinegar add two cupfuls of sugar, let come to a boil, pour the beets and seal. These are delicious for winter days.

APLLES

The steaming method is usually the the best for canning apples. After the apples are washed and peeled, quarter or halve them and pack them in glass jars in a wash boiler on a false bottom of shingles or wire screen, surround them with a few inches of warm water and steam them until the apples are tender. This usually takes about an hour for quart jars and twice as long for two quart jars.

Remove one jar at a time, put a new rubber in place and fill the jar to overflowing with a hot sirup made by boiling together for fifteen minutes sugar and water in the proportions of a quart of sugar to a quart of water. Seal it at once. Sliced lemon or some other flavoring matter may be added if desired.

If the apples are very hard they should be canned by the boiling method. Cook the quartered apples in clear water until they become tender, then drop them into a thin sirup and boil them gently a few minutes longer. Put a new rubber in place on a sterilized jar, fill the jar to overflowing with the fruit and boiling sirup and seal it at once, using a sterilized cover.

Because most apples contain a large quantity of pectin, they have long been the housewife's favorite fruit for making jelly. Pectin is a substance that makes swetened fruit juice harden into jelly when it is boiled. Late fall and winter apples in particular produce jelly of fine flavor and rich color. In making apple jelly, wash the apples thoroughly, remove any parts that may be decayed or soft and also the blossom ends and stems. Do not peel or core the apples, but cut them into small pieces and place them in a preserving kettle. Barely cover them with cold water. Stew them slowly until they are well done. Turn them into a jelly bag and drain them overnight without pressure.

In the morning measure the juice, which should have a rich color and be free from pulp, place it on the fire and boil hard for several minutes

PAIN ACROSS KIDNEYS

Was So Bad

Had To Go To Bed.

Women are the greatest sufferers from weak, sore, lame and aching backs, owing to the continual stooping, bending and lifting so necessary to perform their household duties.

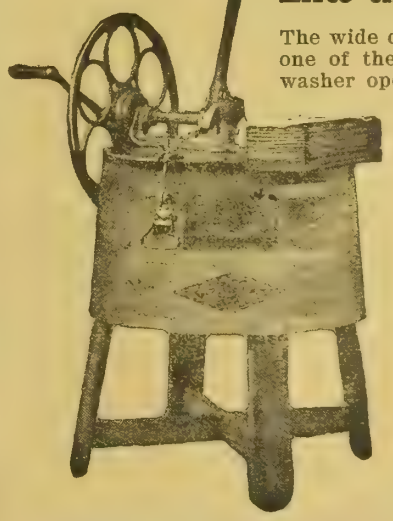
On the first sign of any weakness of the back Doan's Kidney Pills should be taken, and thus prevent serious kidney troubles which are sure to follow if the bad back is neglected.

Miss Gladys M. Buckler, Tatamagouche, N.S., writes:—"I feel it my duty to let you know what Doan's Kidney Pills have done for me. I suffered for years with a sore back. I was so bad I had to take to my bed sometimes with the pain across my kidneys. I went to two different doctors; they treated me, but I got very little relief. I saw Doan's Kidney Pills advertised for sore back, so sent for two boxes, and before I had the first one taken I felt a change. I cannot recommend your medicine enough."

Doan's Kidney Pills are 50 cents a box at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited. Toronto. Ont.

KING COLE
TEA
KING COLE
ORANGE PEKOE
TEA
KING COLE PURE INDO-CEYLON TEA
Held High in Public Esteem
WHETHER you are a user of KING COLE Orange Pekoe or KING COLE Indo-Ceylon Blend, you know that the quality has been consistently maintained. That alone explains the steadily increasing sales.
They are dependable teas.
Perfectly packed in bright lead foil and price marked on every package.

Lifts the Burden Off Washday



The wide opening top of the "Maxwell" is only one of the many special features — no other washer opens right up in this way.

Maxwell

"High-Speed Champion" Washer

Gives heaps of room for work. Has a crank handle at side, and a top lever. You can use either. Runs almost by itself—and its so easy to work a child can wash with it. No rubbing—no bending over hot, steamy tubs. Get a Maxwell High Speed Champion and have your washing done in half the time!

MAXWELLS LIMITED

Dept. X. ST. MARY'S, Ont.

Suffered from Constipation

FOR TWO YEARS.

If the truth were only known you would find that over one-half of the ills of life are caused by allowing the bowels to get into a constipated condition. When the bowels become constipated the stomach gets out of order, the liver does not work properly and then follows the violent sick headaches, the sourness of the stomach, belching of wind, heartburn, water brash, biliousness, etc.

Keep your bowels regular by using Milburn's Laxa-Liver Pills.

Mr. A. Roder, Hastings St. E., Vancouver, B.C., writes:—"I desire to express my thanks for what Milburn's Laxa-Liver Pills have done for me. I had been suffering from constipation for two years, also had a bad cough and headaches. I tried all sorts of cures and remedies, but got no relief until I was advised to try your pills. I got great relief after the first few doses."

Price 25c. a vial at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont

to evaporate part of the water. Heat as much granulated sugar as there was of measured juice, and while it is still hot add it to the boiling juice. Continue the boiling until it jellies when cold; this should be only a few minutes after the sugar is added. Pour the jelly into glasses. When it is entirely cool cover it with melted paraffin, label the glasses and store them in a cool, dry place.

A Fine Foundation Jelly

By combining apples with small amounts of the more expensive fruits, such as pineapple, to produce different pleasing flavors, several varieties of jelly may be obtained. Different flavors may also be secured by dividing the jelly into different parts when it is taken from the preserving kettle, and adding to one portion a few drops of vanilla, to a third a pinch of ground cloves, and so on.

Experiments may be made in the following manner with different extracts to see whether they produce desirable flavors: Take out a teaspoonful of the jelly, add to it a drop of the flavoring material, stir the spoonful well, allow it to cool and taste it. If the flavor is pleasing the entire quantity may then be flavored.

Sweet apples make the most delicious preserves, though other varieties may be used with a lesser degree of success. Wash, peel, core and quarter the aples. . Make a heavy sirup by boiling together for fifteen minutes sugar and water in the proportion of a quart of sugar to a quart of water. The denser the sirup, the better the apples will keep their shape. More water must be added whenever the sirup shows a tendency to jelly.

Drop a few apples into the heavy boiling sirup—the preserves are better if the apples are entirely surrounded by the sirup while they cook—and boil them until they turn a rich color and become somewhat transparent. Transfer the apples, but not the sirup, to a sterilized jar; then add more water if the sirup is beginning to jelly and cook more apples. Continue the process unti lthe apples are all cooked. Then pour the remaining sirup over the preserves and seal the jars.

Sweet apples and quinces may be combined to make excellent preserves. Peel, quarter and core both the apples and the quinces. Steam them until the are very tender. Make a heavy sirup by boiling for twenty minutes water and sugar in the proportion of a quart of sugar to a quart of water. Drop the steamed fruit into the boling sirup and boil it until it becomes a arich red color. Do not stir it. A slice of lemon in the sirup improves the flavor. Put the fruit into sterilized jars, put new rubbers in place, boil the sirup down until it is very thick and pour it into the jars until they overfloow. Seal the jars at once.

Apple ketchup is a foreign dish that is coming into deserved popularity. Peel, core and quarter five pounds of tart apples. Cook them until smooth with a quart of brown sugar and two quarts of cider vinegar. Place the mixture in a crock and add two pounds of chopped raisins, a small mild onion, an ounce each of ground ginger, one tablespoonful of salt and two or three red peppers chopped fine. Mix the ingredients thorougthly and let them stand overnight. In the morning transfer the ketchup to jars without cooking and seal at once. It will keep for years.

An Oriental Mixture

East India chutney is an oriental ketchup with apples as a base. Pare and core twelve sour apples. Peel one mild onion. Remove the seeds nad stems from three peppers. Seed a cupful of raisins and extract the juice of four lemons. Chop the apples, peppers, raisins and onion very fine and mix them together thoroughly. Add the lemon juice, one pint of cider vinegar, two cupfuls of sugar, one tablespoonful each of salt and ground ginger and a quarter of a teaspoonful of cayenne pepper. Cook the mixture another hour, stirring constantly, and then seal it in glass jars.

In these days of canned fruit and preserves and jams, old-fashioned dried apples hardly receive the attention they deserve. Dried apples are not so attractive as the other forms of preserved fruits, but they make up for this, in part at least, by their high food value. In the latter part of the winter, when the supply of preserves and jams runs low, occasional dried apple pies and daintily flavored dried apple jelly afford a welcome change in the menu. To make the jelly place quarts of dried apples in a granite kettle, cover them with water, and stew them slowly for two or three hours. Drain off the juice and measure it. For every pint add three-fourths of a pint of sugar and the juice of two lemons. Boil the mixture until it hardens when cool. Turn the jelly into glasses and cover them.

He Inherited All His Many Troubles

BUT FOUND RELIEF IN DODD'S KIDNEY PILLS

Evidence from Cape Breton that the Most Deeply Rooted Forms of Kidney Disease Yield to Doods Kidney Pills.

Red River, Inverness Co., C. B.—Sept. 7th (Special)—That even the most deeply rooted kidney disease yields to a treatment of Dodd's Kidney Pills is shown by the statement of Mr. James N. Timmons, a well-known resident here. Mr. Timmons says that he inherited his kidney trouble from his parents and suffered from it for six years.

"I used two boxes of Dodd's Kidney Pills and they did me a lot of good," Mr. Timmons states. "If I had followed on with the pills I believe they would have completely cured. I am always glad to tell others how much benefit I got from using Dodd's Kidney Pills."

Mr. Timmons suffered from many of the varios ills that accompany any kidney trouble. He had rheumatism cramps in the muscles, backache, and headache. His sleep was broken and unrefreshing. He felt heavy and sleepy after meals and he was always tired and nervous.

If you have any of these ailments you can be sure your kidneys are out of order or diseased. Ask your neighbors if Dodd's Kidney Pills will not help you.

ENTERPRISE
BLAZER
WARM AIR
FURNACE
This practical furnace installed in your home will give you more comfort and satisfaction than any other investment you can make.
Ask the man who owns one what he thinks. Our free booklet "Warmth and Comfort" will tell you all about it. Write for a copy.
The Enterprise Foundry Company, Sackville, N.B.
Makers of High Grade Stoves, Ranges, Furnaces
SOLD BY LEADING DEALERS EVERYWHERE

The most important point to consider in drying apples is the protection of the fruit from flies and other insects and from dust. Peel, quarter and core the apples. Place clean papers on the drying frames, and spread the apples over them evenly in one layer. Cover them well with glass; or if this is impossibe, with mosquito netting. Place the frames away from the road, preferably well off the ground. Allow the apples to remain ni the sun during the day. After they have partially dried, place the contents of three or four frames on one. This will allow fresh apples to be placed on the other frames. When the apples are dry place them in paper sacks and hang them in a cool, dry place.

BEWARE OF FLIES

Flies should be kept out of our houses, killed if they enter them, and prevented from hatching their eggs in stables, manure heaps, swill pails, and other filthy places. They are born in filth, they feed on filthy, they walk on filth, and then with filth sticking to their feet, legs and bodies, they feed and walk on the food which has been prepared for human beings to eat. It would disgust us, wouldn't it, if we saw a fly feeding on the filth of the street, the stable the garbage can, or on something even worse, and then saw the same fly go through the open door or window of our dining room and wipe its feet on the sugar, tangle its legs in the butter, or take a bath in the milk? If we should watch every fly that comes in the house, we would see that most of them come from such filth to the food of our table.

Flies Are Dangerous

Bad as filth is, it is not the worst

I KNOW A WOMAN'S SUFFERINGS

I am a woman.

What I have suffered is a far better guide than any MAN'S experience gained second-hand.

I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight and dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

Read My FREE Offer:

To Mothers of Daughters. I will explain a simple home treatment which speedily and effectually dispels green-sickness (chlorosis), irregularities, headaches and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten days' trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

MRS. M. SUMMERS, Box 309 Windsor, Ontario

thing that flies carry about. They swarm about open sewers, drains, and outhouses, which receive millions of disease germs which have passed through the bodies of sick people. Flies in this way pick up and carry on their bodies, heads and legs (which are covered with fine hairs—just suited for catching and holding this sort of thing) the germs of typhoid fever, summer diarrhoea of children, tuberculosis, and several other diseases. Dr. L. O. Howard, Chief Entoomologist of the United States Department of Agriculture calls the common house fly the Typhoid Fly, because so many cases of typhoid fever have been caused by its carrying the germs from one sick person to another. These germs are so small that you cannot see them with a microscope, but the fly that is eating from the same plate with you may be carrying a million of them.

Flies kill more people than wild beasts and poisonous snakes. Many of these beasts and snakes never get a chance to kill any human being; but any one of the millions of flies found in most of our homes and cities has a chance if it comes into the house carrying typhoid germs, of killing a whole family.

Flies Breed Quickly

Most house flies in cities are hatched from eggs which have been laid in horse manure. Some breed in other forms of filth, such as garbage cans, heaps of refuse in back yards, etc. The fly lays 120 or more eggs at a time. These, if they are not disturbed, become maggots in about 12 hours. In from 5 to 8 days more, the maggots enter the pupa stage, as caterpillars do, and after from 5 to 7 days come out of the earth or manure in which they have buried themselves in the form of flies, ready in a few days to become the fathers and mothers of large families. They breed so rapidly that in one summer the children and grand children of one pair of flies may amount to thousands of millions. And remember that the germs they carry multiply much faster than the flies.

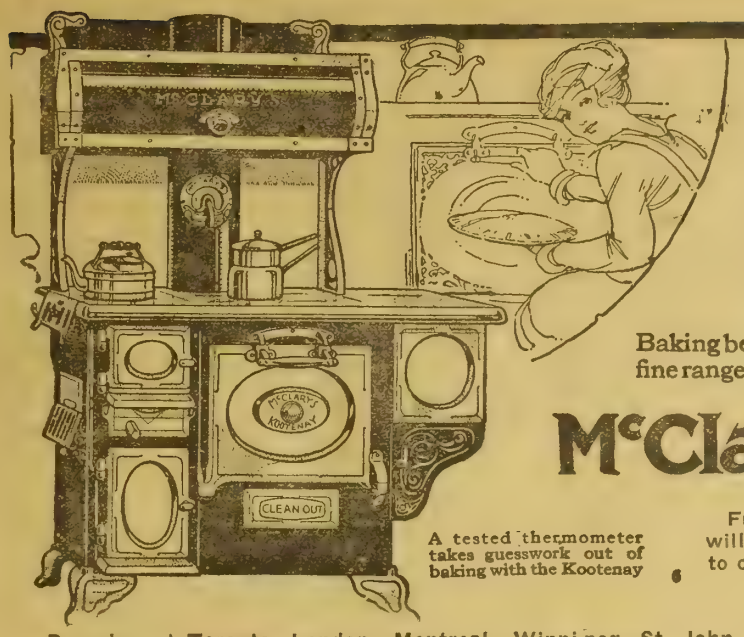
To prevent flies from breeding, screen the stable if possible. Remove the manure at least twice a week. If flies being to breed in stored manure they may be killed by thoroughly spraying it with kerosene or Paris Green and then pouring enough water to thoroughly wash the oil or poison in. The objection to the use of kerosene is that it ruins the manure for fertilizing purposes.

It is well to abolish old-fashioned outhouses where possible. Where this cannot be done a liberal amount of lime should be used, aplied in small amounts daily. Chloride of lime is better than slaked lime, but slaked lime is better than none at all. Garbage barrels should be thoroughly cleaned after emptying, and the contents should be thoroughly cleaned after emptying, and the contents should be sprinkled with crude oil. And finally, keep flies out of the house by screening the doors and windows.

Beware The Fly

It is now an acecpted fact that the fly is the cause of spreading many diseases; we would therefore call our readers' attention to the following rules:

1. Keep the flies away from the sick, especially those with contagious diseases. Kill every fly that strays into the sick room. His body is covered with disease germs..
2. Do not allow decaying matter of any sort to accumulate on or near your premises.
3. All refuse which tends in any way to fermentation, such as bedding straw, paper, waste and vegetable matter, should be disposed of or covered with lime or kerosene oil.
4. Screen all food.
5. Keep all receptacles for garbage carefully covered and the cans cleaned or sprinkled with oil or lime.
6. Keep all stable manure in vault or pit, screened or sprinkled with lime, oil or other cheap preparation.
7. Cover food after a meal; burn or bury all table refuse.
8. Screen all ofod exposed for sale.
9. Scren all windows and doors, especially the kitchen and dining room.
10. Burn pyrethrum powder in the house to kiil the flies.
11. If no dirt exists there are no flies.



THINK of the time and trouble you can save with this dependable range.

No black-leading. The cooking-top is burnished brighter than steel. Grates—the modern duplex type—clean the ashes out at a single turn. Oven walls nickeled steel—easily cleaned.

Baking becomes a real pleasure when you have this fine range to work with. Call and see the Kootenay.

McClary's Kootenay

A tested thermometer takes guesswork out of baking with the Kootenay

Full information about the Kootenay range will be sent free to any address upon request to our nearest branch office.

Branches at Toronto, London, Montreal, Winnipeg, St. John, Calgary, Vancouver and Hamilton.

McClary's

FRUITS TO SERVE WITH MEATS AND FOWLS

Sometimes when we wish to serve a partticularly nice dinner and have everything up to the standard, we are at a loss to know just what fruits should be served with certain meats and fowls. Following is a list that should prove of great help to any desiring this information. It might be a agood idea to cut it out and file it for reference:

Ham. — Apple jelly or mustard pickles.

Roast Beef.—Yorkshire pudding and tomato jelly.

Roast Pork.—Apple sauce.

Stewed Mutton.—Salad and creamed onions as the vegetable.

Turkey.—Cranberry sauce or currant jelly.

Chicken (roast).—With chestnut stuffing serve chestnut sauce.

Chicken (boiled).—Oyster, celery, lemon or caper sauce.

Chicken (broiled).—Serve with tartar sauce.

Chicken (fried).—Tomato sauce.

Goose—Garnish with watercress, serve apple sauce or fried app'es.

Ducks.—Olive sauce and green peas.

Grouse.—Bread sauce.

Pigeons.—Spinach and toast.

Venison.—Currant jelly.

HEAVY PASSENGER TRAVEL ON C. N. R. LINES

Passenger travel is remarkably on sections of Canadian National Railway Lines, and particularly so in the Eastern section where trains between St. John, Halifax, Sydney and Montreal are every day filled to capacity. The popularity of the Maritime Express and Ocean Limited is amply demonstrated by the many applications for sleeping car reservations on these well equipped through trains.

Requests for space are so numerous that extra cars are being caried and often trains run in two sections. With the rush of travel from troop steamers arriving at Halifax and Quebec this means considerable of a strain on the railway for equipment.

Passenger business which has been very brisk all summer, is likeyl to continue through the fall.

MOTION PICTURES OF MATAPEDIA VALLEY

While on the C. N. R. special train from Halifax to Quebec recently, carrying newspaper men and moving picture operators, who were following the Prince of Wales on his tour, some of the motion picture men secured views of the Matapedia Valley. They mounted the deck of the locomotive and operated their cameras while the train sped through the Morrisey Rock Tunnel and across the Restigouche Bridge. At a point beyond Matapedia station the train was stopped and several group pictures were filmed.

These pictures will be shown in connection with the news films of the Prince's tour.

BROILERS

Under ordinary conditions the most profitable time to market cockerels of the light weight varieties is unquestionably at the broiler age.

All surplus Leghorns and cockerels of similar breeds sould be disposed of at this stage, as the quality of the flesh rapidly lowers with age and they are consequently not in demand as roasters.

The most desirable weight for broilers is from a pound and a half to two pounds each and the quicker the chick can be forced to these weights the better the quality of the broiler.

In growing broilers the chicks may be fed and handled in the usual way until they reach the age of about six to eight weeks. The cockerels should then be separated from the general flock, kept in confined quarters and forced with ground grains, mash and milk, just an occasional feed of wheat or cracked corn being supplied to stimulate the appetite.

Milk is essential if the highest quality is to be secured and when fed sour it acts as a stimulant and keeps the appetite keen.

A mixture of sifted ground oats and corn, corn, oats and barley, or buckwheat, oats and barley, makes a good ration. This should be mixed to a rather thin batter with sour milk and fed at leas three times a day, all the chicks will clean up.

They should have at least two weeks feeding of this kind before being marketed.

When ready they should be starved ofr at least twelve hours, bled and neatly dresesd, care being taken to avoid tearing the skin when plucking, as they are very tender and consequently easily torn at this age.

Those who are not experts at dressing or who live at a distance from market can make arangements to ship to a dealer who will dress and deliver at so much per pair. This is usually a better plan than shipping dressed in hot weather as the danger from spoiling under this method is great.

For the week of July 8th broilers were quoted in a wholesale way at 45 to 50 cents per pound in Montreal; 40 to 45 at Toronto and Vancouver. Where shipping to clubs and retailers considerably higher prices can be realized.—George Robertson, Assistont Poultry Husbandman, Central Experimental aFrm, Ottawa, Ont.

MINARD'S "KING OF PAIN" LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

A MESSAGE TO WOMEN!!

LET a woman ease your suffering. I want you to write, and let me tell you of my simple method of home treatment, send you ten days' free trial, postpaid, and put you in touch with women in Canada who will gladly tell what my method has done for them.

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me today for free trial treatment.

Mrs. M. Summers, Box 309 Windsor, Ont.

FORESTALLING BATTERY IGNITION TROUBLES

Attend to the Sparking Devices and Avoid Involuntary Stops

Different battery ignition systems vary so greatly in detail that the suggestions here given can be of a general character only and the instruction book relating to the particular system in question should always be folloed. Don't fail to lubricate the bearings and gears of the timber shaft, by means of the grease cup usually provided. See that the make-and-break mechanism works perfectly freely and that no dirt or oil is present to make it act sluggishly. If the contact-points do not come together over their full surface, it is usualy advisable to fit them so they do, by placing a thin jewelers file between them, pressing them together, and withdrawing the file, repeating this operation until a full contait is secured. A piece of very fine sandpaper can be used in the same manner as the file (reversing it so as to act upon each point,) if only a little treatment is needed or if the metal is very hard. If the points are too inaccessible to be treated in this way they can usually be removed and trued up separately on a small oil stone. The points of some breaker mechanisms are not intended to be "doctored," but to run as long as they will and then be replaced and it is well to have the replacement parts on hand and to know how to put them in readily. Any spring parts of the timer, that are likely to break, should be kept in duplicate. The contact points of all timers should be kept adjusted for the recommended distance of separation, a thickness guage being furnished with each outfit. The correct gap is usually 1-32 inch or less and much variation from this will change the timing or cause missing. Be sure there is no dust in the distributor housing, as the high tension current may short circuit upon it. Never use oil about the distributor, but a very little vaseline rubbed over the path of the rotatnig contact and then mostly wiped off, is sometimes recommended. The automatic advance mechanism, if present, requires lubrication. If the equipment includes an ignition switch, designed to open automatically and thus protect the battery from accident discharge, its efficacy should be demonstrated once in a great while. Try, for firmness, all connections of every wire and cable including those at the timber distributor, the ignition switch, the coil, the grounding point and at the connection board, where the ignition circuit obtains its current. If there are un-armored primary wires see that they are properly fastened in place and not oil soaked or being broken by repeated bending. Keep dust and oil wiped from the spark-plug wires and the distributing casing.

CLAIMS HIS FORD IS WORN OUT

E. G. writes: Please tell me what to do with a worn out Ford.

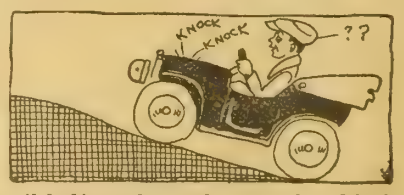
Answer: We think perhaps you may be joking, as there is a general opinion that Fords never wear out, but continue to "ramble right along" indefinitely. However, we are going to take your inquiry seriously. We cuggest that you obtain an estimate from a Ford agency as to how much it will cost to put this car in good order and, if this amount is very considerably less than the selling price of used cars of this model, we should advise you to have the work done and sell or keep the car. On the other hand, if repairs will cost nearly

as much as the car will sell for, we advise wou to dispose of it to some "auto wrecker" for what you can get. Some people retain the body for the childrei to play in or place it on the lawn and grow flowers in it, not wishing to give up entirely an old and faithful friend.

IS THIS A COMPRESSION KNOCK?

F. W. writes I have a four-cylinder 1919 ——— which knocks badly on hills, but when I pull up the rod that chokes the carbuetor air, the knocking stops. Can you tell me if this is a "gas" or a "compression" knock?

Answer Assuming that the cylinders are clear of carbon, that you are sure that the spark is not so far advanced as to cause the sound complained of and that the mixture, at full throttle and low speed is not so lean as to result in a low pulling power, we fancy that this is a compression knock. If you will obtain enough real, high-test gasoline to partly fill the tank and



wil ladjust the carburetor for this fuel and run a while upon it you can soon tell. Should knocking cease it may be safely assumed that the compression rate is too high for the fuel regularly used, but if it still continues, the cause must be sought elsewhere. You may well try this experiment, before reducing the compression rate. When you choke the air, you make the mixture so rich that it burns slowly and at a temperature too low to produce the detonating reactions in the combustion, which are the supposed cause of the compresion knock, when actual preignition does not take place.

CALLING IN THE SPECIALIST

When something breaks or wears out it is usually a perfectly straightforward proposition to obtain a new one and have it put in, but when the engine develops an elusive "skip," when it suddenly or gradually loses power in an obscure way, when the radiator develops an inexplicable tendency to boil, or when the battery, for no apparent cause refuses to keep charged, the situation is different. Obviously there is a cause (or causes) for each such baffling trouble, but to determine what it is, may often be beyond the diagnostic powers of the motorist concerned and expert advice is sought. No one can estimate the huge sums of money, which car owners have squandered for labor and material, consumed in following out treatments based upon false diagnosis, and the suggestions here given are intended to protect motorists from losses of this kind: When trouble due to an obscure cause develops, consult the best qualified expert available, obtain his opinion and pay him his fee, but do not act upon his advice at once, but on the contrary, obtain the opinion of another qualified man. If these two "doctors disagree," try a third expert and keep on with this informal "consultation," until you obtain the same diagnosis and recommended treatment from more than one. It is good economy to pay for all this advice rather than to obtain the opinion of one man free and allow him to do the work suggested as necessary (but perhaps not requfred at all) at his own shop. Give the experts you consult plenty of time to look your car over and to think over the "symptoms." Avoid the expert who has any panacea to sell, for he may be unconsciously biased. If he is a carburetor agent, he will most likely prescribe a "new one" when the trouble is really in the breaker-box. Should he happen to be a piston ring merchant, he may ,in perfect good faith, recommend a full set of this "jewelry" when, in reality, new expensive valve springs are needed. If the recommended treatment is of an expensive kind, don't begin upon it until two or three experts agree that it is what is required. The advice of a felow motorist or a neighbor's chauffer, who has driven cars before the average "expert" reached the voting age, may often be worth as much as that of a professional. Certainly it is worth something.

CAR "LAYS DOWN" ON UP GRADES

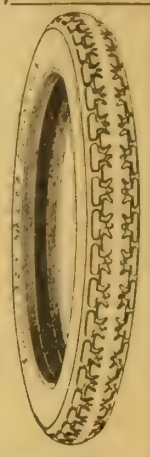
A writes I have a 1918 car which "falls down" on speed, when going up the least incline. The engine is likely to stall whenever the car is stopped or slowed down. Have had valves ground and timed. What is the nature of this trouble?

Answer: Assuming that your ignition is all right this looks like a case

of too lean mixture. which is almost sure to result in very low power and uncertain engine operation at low speed. You better have the carburetor re-adjusted to feed a little more gasoline in proportion to air. If this does not improve conditions please write us again. We suggest that you have no more work done upon the car until you have tried the above suggestion for such operations as grinding valves on a new car like this. under conditions such as you describe are useful only to the ones who do the grinding.

Maltese Cross Tires

MALTESE CROSS TIRES give that extra wear and riding comfort that is appreciated by discriminating motorists. The sense of surety experienced by motorists with MALTESE CROSS TIRE EQUIPMENT can be yours, too. If that old bugaboo, "Will my tires get me back without trouble?" worries you while touring, equip your car with "The Tires That Give Satisfaction" and enjoy yourself. Tire troubles seem extra shy of the


Non-Skid Tread

Maltese Cross Brand

Ribbed Tread

Notice the number of cars that are to-day equipped with MALTESE CROSS TIRES. Motorists do not change equipment without good reason. Can you be satisfied with ordinary tires when the super-wearing qualities of MALTESE CROSS TIRES are so apparent?

Gutta Percha & Rubber, Limited

Head Offices and Factory: TORONTO

BRANCHES: Halifax, Montreal, Ottawa, Toronto, Fort William, Winnipeg, Regina, Saskatoon, Edmonton, Calgary, Leithbridge, Vancouver, Victoria

ENGINE MISSES FROM CARBONIZED PLUGS

D. W. P. asks: Why do the two front spark-plugs of my Ford continually fill up with carbon so that the engine misses to such an extent that I can get but 10 to 12 miles per gallon? Would it be of any use to try rings of another make? Ignition seems good, but would some other than the standard Ford type give better results?

Answer: If the plugs carbonize from oil ,the piston rings are still at fault. Properly fitting Ford rings

ought to make the pistons tight, but posibly patent rings might prove better. If the carbon upon the plugs is gasoline soot, it denotes that these two cylinders receive too rich a mixture, which is most likely because the intake manifold runs too cold to vaporize the fuel properly. A heated manifold and a lcoser adjustment of the carburetor might correct this. A high-tension magneto or a modern battery system would improve your ignition results. If gas rapidly leaks out of these cylinders, when they are cranked through their compression strokes, it is evident that the rings still fit so imperfectly that an escape of oil past them is to be expected.

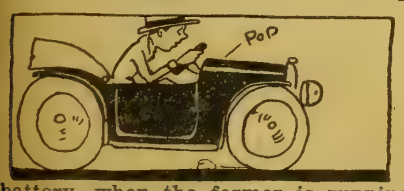
THE EVILS OF VIOLENT OPERATION

Attenton cannot be too often called to the destructive effects produced alike by starting and by stopping a car suddenly and inconsiderately. Too often, the starting operation is performed about like this: The clutch is pushed out and the gears are instantly jammed into mesh, with a clash, before they have stopped spinning. The engine is speeded unti lit buzzes and the clutch pedal is allowed to snap back at almost its own speed. The passengers necks are nearly dislocated, every transmission part receives a life-shortening jolt and the tires slip on the road, tearing down their tread rubber or loosening it and stressing the fabric more than would miles of legitimate esrvice. When approaching the stopping point speed is not slackened until within a short distance of it, when the brakes are jammed on with full power, the wheels lock and the car slides up to its destination, writing a record of the abuse in a flat spot on each rear tire, where the tread has been "scuffed" off. This is admittedly an extreme description, but nearly as bad car abuse can be witnessed any day on any largely traveled street and it is given as an example of "how not to do it." Jusa reverse everything and it becomes a recipe for careful and considerate operation.

GENERATOR FUSE BLOWS

D. W. P. asks: What makes the fuse, used in connectiono with the generator of my car, burn out every once in a whie? It has done it several times lately just when I shut down the engine.

Answer: Most likely this is caused by the occasional failure of the relap



battery, when the former is running so slowly that it does not generate voltage equal to that of the latter. Under these condition a very large current flows in the wrong direction, i. e., from the battery into the generator and the fuse melts out in order to protect the generator and battery from damage. Not knowing what electric system you have, we cannot say certainly, but it is possible that the relay spring-tension is weak or that the contacts stick together. You better have an electric service man look for this trouble and remedy it at once.

UNDERCHARGED BATTERY

J. L. P. writes: Lately the lights on my car have been somewhat dim while the engine is stopped and I have noticed that they suddenly brighten when I speed up the engine a little. Does this mean that anything is wrong?

Answer: It indicates to us that your battery is undercharged. The sudden increase in brightness of your lights of which you speak, is due to the fact that the generator voltage is considerably higher than that of the battery and when the generator is electrically connected to the system (as it is whenever the engine speed rises to a certain point) the lights burn at the higher generator voltage, with increased briliancy. You should take measures to keep your battery fully charged, first making sure that it is in good condition and free from internal short-circuits and that there are no leaks in the wiring. It may be that your generator should be adjusted to furnish a larger charging current. This and any other adjustments needed can be made at any electrical service station.

FUEL FEED INQUIRY

L. E. W. writes: I have a car that has its gasoline tank under the front seat instead of at the rear, and sometimes, when there is only a little gasoline in it, there is no flow to the carburetor, on steep hills. What I wish to know is whether a vacuum tank system can be applied in this case.

Answer: Yes, the vacuum feed system can be made to operate under these conditions, as well as it can in connected with a rear mounted tank.

DEMOUNTABLE RIMS OR SPARE WHEEL

T. W. F. writes: I am thinking of improving the tire equipment of my Ford, which now carries the standard outfit. Do you recommend the demountable rim or the spare wheel equipment?

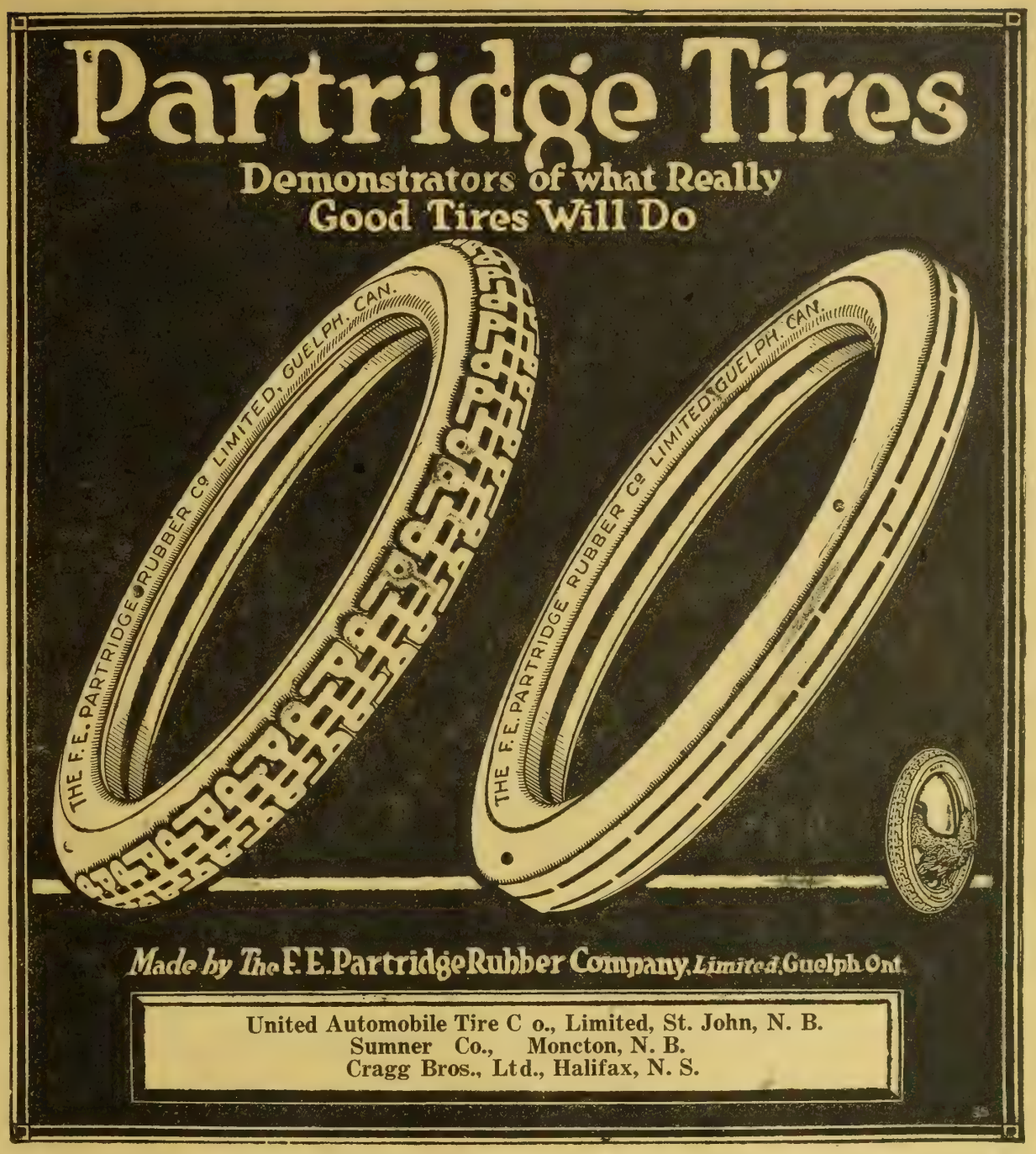
Answer: The 30x3½ inch equipment on all four wheels is what you require. There is some difference of opinion as to whether the demountable rim or the spare wheel is the better, but the former should be rather lighter and perhaps somewhat more secure mechanically and personally we rather prefer it. However, in case of a wheel breakage, the latter possesses an obvious advantage.

RUBBER PRESERVATIVE PAINT

T. W. F. asks: Does the commercially advertised tire paint cause any injury to tires.?

Answer: No, quite the reverse. A good preservative compound of this

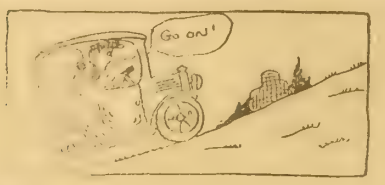
kind acts to fill small cuts and cracks in the tread rubber and to delay their becoming larger and finally of sufficient size to admit water and dirt, that will tend to loosen the tread and cause sand blisters. At least, these claims are made for these preparations and they appear reasonable.


Partridge Tires
Demonstrators of what Really Good Tires Will Do
THE F.E. PARTRIDGE RUBBER Co LIMITED. GUELPH. CAN.
THE F.E. PARTRIDGE RUBBER Co LIMITED. GUELPH. CAN.
Made by The F.E. Partridge Rubber Company, Limited, Guelph Ont.
United Automobile Tire C o., Limited, St. John, N. B.
Sumner Co., Moncton, N. B.
Cragg Bros., Ltd., Halifax, N. S.

HILLS TOO STEEP FOR GRAVITY FUEL FEED

A. P. J. writes: My Ford Sedan will not climb some of the steepest hills in this city. After its stalling on one of these, I disconnected the gasoline pipe at the carburetor and found that I had to lower the detached end three inches below its point of connection before gasoline would flow from it, although there were nearly five gallons of fuel in the tank. How can I remove the difficulty?

Answer: The fuel flow on these closed cars fails, on sharp up grades, with a larger amount of gasoline in the tank, than does that on the open models, because the tank of the closed

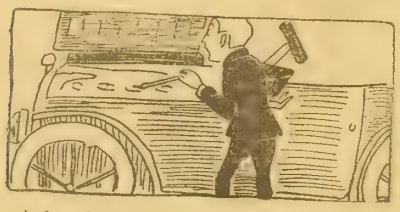


models is of a somewhat flat form, while that of the open cars is cylindrical. Installing a vacuum fuel feed system is the remedy for your trouble and we are quite sure that some of the manufacturers of these devices can furnish you with such apparatus, with special fittings for mounting the tank. Some users have attached to Ford fuel tanks, apparatus for creating a temporary pressure feed, consisting of a hand-operated air pump, delivering into the top of the tank, a gasket under the filler cap to make it air tight and means for venting the tank pressure is not being used. We recommend the vacuum feed arrangement rather than this.

IDENTIFICATION OF MISFIRING CLYINDER

T. W. F. asks: How can I tell which cylinder of a Ford engine is missing explosions?

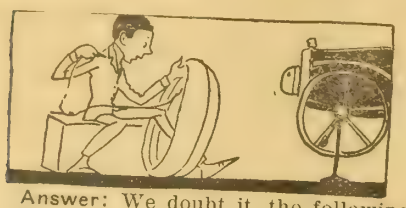
Answer: Set the engine running at a moderate speed and take a screwdriver with a wooden handle and touch its blade simultaneously to the metal top of a spark-plug and the cylinder. This will stop that plug from sparking. Do this to each plug in turn and if, when it is tried on a



certain plug, the engine does not slow down, this plug has not been firing properly. Another method is as follows: Remove the coil-box cover and stop each vibrator successively from operating, by holding it down with the finger. A vibrator, which can be stopped without causing the engine to lose speed, is furnishing current to a cylinder which is missing explosions.

RENOVATED CASINGS

M. S. asks: Is it profitable to have two old casings sewed together to make a new tire? There are parties that claim great things for this process.



Answer: We doubt it, the following being some of the objections which we have heard raised against the process: The result is a very thick, stiff shoe and one with too thick a wall, can hardly bend adequately to absorb road irregularities without fabric breakage, which shortly leads to a blowout. Such a thick, stiff casing makes a car ride hard, heats to such an extent as to destroy the tube prematurely and absorbs excessive power. Being built up of fabric, presumably already considerably deteriorated, it has less strength than might be supposed. As this process is sometimes carried out, the outside fabric is not carried to the bead and side wall blowouts—very common with all casings—are likely to occur very early.

Champion Tractor Plugs Insure Tractor Efficiency

The tractor is one of the most severe of all service tests to which Spark Plugs are subjected.

Its low speed and continuous heavy load, whether on draw-bar or belt, develops a terrific heat with tremendous shock strain and vibration.

Its efficiency depends on the ability of its spark plugs to withstand such gruelling punishment.

Champion "Tractor" for Fordson A 14, ½ inch. Price $1.00

Champion

Dependable Spark Plugs

have a "built in" dependability, and have long since proved their ability to render satisfactory service under any condition in every type of tractor or farm engine—just as they have in the more than two hundred makes of motors in which they are regular factory equipment.

Sold wherever Motor Supplies are sold.

"Heavy Stone" for Tractors and heavy service Motors.
B 13, ½ in.
B 43, ⅞-18.
B 53, ⅞ long.
Price $1.25.
Ball terminal furnished when specified; otherwise regular knurl nut.

Champion Spark Plug Co. of Canada Limited

Windsor, Ontario.

71B

A NEW PARSNIP DISEASE

Parsnips stored in cellars at the Manitoba Agricultural College are found to be badly infected by a disease which seems to be what is known in England as the parsnip canker or rust, writes Prof. F. W. Brodrick, of the Manitoba Agricultural College.

This disease develops after the storage as a black, warty-like growth, which sets up a decay that destroys the whole root. Experiments carried out in England indicate that the disease is not carried by transference of soil, or by portions of affected roots. A number of cultural remedies were suggested which might apply to Manitoba conditions:—

1. Avoid sowing parsnips on too rich a soil. Too rapid growth tends to develop cracking.

2. Apply lime to the soil, which has a beneficial effect in developing better quality in parsnips and in retarding decay. Lime may be applied at the rate of two hundred pounds per acre.

3. A dressing of coarse salt was found effective by some growers. The application of salt tended to liberate potash in the soil, which stimulated the growth of tissues that were most resistant to the disease.

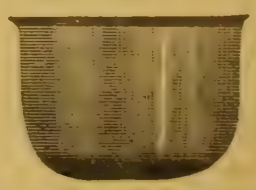
4. Rotation of crops, or not growing two successive crops on the same land, would retard to a certain extent the development of the disease.

The disease itsel fis evidently largely induced by unfavorable growth conditions in the parsnip which cause rupturing of the external tissues. The methods of control are to so regulate the soil conditions as to prevent a very rapid and unfavorable growth.

Weeds and grass in the garden use up plant food and have a tendency to make vegetables grow weak, even if there is plenty of moisture in the ground.

Proper planting of trees in the yard and orchard pays not only in things of the finer sense of beauty and pleasure, but has a very practical side also, for the whole barn yard and orchard add very materially to the value of any farm or home.

PORTABLE



"SERVICE" FEED-BOILERS

THREE SIZES:

30 Gal.	45 Gal.	60 Gal.
(1 bbl.)	(1 1-2 bbls.)	(2 bbls.)
$18	$22	$26

THE SMITH FOUNDRY COMPANY Ltd., - Fredericton, N. B.

SMITH BROS., Sussex, N. B.

MARKETS.

THE PROVISION MARKET

Montreal, Sept. 6—A weaker feeling has developed in the market for live hogs since Monday and prices in the Toronto market have declined 50c per 100 lbs. with latest sales reported at $21 per 100 lbs. weighed off cars, and at $20.75 fed and watered. In sympathy with this and the lower prices ruling in the American markets, coupled with the increased offerings here today the local market was also weaker and prices dropped $1 per 100 lbs. The demand from packers at the lower level was good and an active trade was done with sales of selected lots at $20.50 to $21 per 100 lbs. weighed off cars. O naccount of the above the market for dressed hogs displayed weakness and prices were reduced 50c per 100 lbs. with sales of abattoir fresh-killed stock in a jobbing way at $31 to $31.50 per 100 lbs.

There was no actual change in prices announced for smoked or cured meats today, but the indications are that there will be a readjustment of values in the near future owing to the weakness in hogs and the fact that prices are now considerably lower than the recent high level. The demand continues good for supplies for domestic consumption and trade in a jobbing way is reported fairly active with sales of 8 to 10 lbs. hams at 46c per lb., 12 to 15 lbs. at 44c, and heavy weights at 40c, while breakfast bacon is selling at 50c, special brands at 52c to 54c, and Windsor boneless bacon at 56c. A small trade is passing in barreled pork in a jobbing way with sales of short cut and fat back grades at $60 per barrel.

The condition of the market for lard was unchanged, prices being steady under a good demand for supplies and sales of Canadian pure leaf grades were made at 40c to 40½c per lb. in 1 lb. blocks, and at $7.60 per 20 lb. wood pails, while American compound lard sold at $6.50 per 20 lb. wood pails, and shortening at $6.30 per 20 lb. wood pails.

The receipts of provisions today were 25 barrels pork 2,885 packages lard, 521 boxes hams and bacon, and 687 packages tinned meats.

Chicago, September 3.—Provisions, like corn, were depressed by current statements from influential sources that foodstuffs were to decline. Prices closed unchanged to a loss of $1.

Future quotations were:

	Open	High	Low	Close
Mess pork, per bbl.—				
Sept.	$41.50	$42.00	$41.25	$42.00
Oct.	37.00	37.30	35.70	37.25
Lard, per 100 lbs.—				
Sept.	28.00	28.00	27.10	27.10
Oct.	27.40	27.40	26.70	26.70
Short ribs, per 100 lbs.—				
Sept.	22.00	22.00	21.55	21.60
Oct.	22.00	22.00	21.37	21.47

Cash prices closed: Pork, nominal. Lard, $27.10. Ribs, $21.25 to $22.25.

DAIRY PRODUCE TRADE

Monreal, Sept. 6.—The receipts of butter today were 348 packages, as against 330 for the same day last week, and 923 for the same date a year aago. It was reported today the lot of pasteurized creamery offered yesterday at the auction sale was sold at 54½c per lb., and the lot of finest at 54c. The market today in a wholesale way was very quiet with nothing of interest to note, the demand from all sources being slow.

We note wholesale jobbing prices as follows:

Pasteurized creamery 51½c to 55c
Finest creamery .....54¼c to 54½c
Fine creamery .....53½c to 54¾c
Finest dairy .....49c to 50c

The recipts of cheese today were 16,509 boxes, as compared with 9,650 for the sam eday last week, and 14,060 for the corresponding date a year ago. A scarcity of colored cheese for the home trade has developed during the past few days and the same has been selling at a premium of from ¼c to 1c per lb. over white, but apart from this there is nothing of importance in the situation to note. The Dairy and Cold Storage Branch of the Department of Agriculture in their weekly letter say: In France butter and cheese are both scarce as compared with pre-war times, and higher in price. First class retails at from 75c to $1.15 per lb. Cheese varies greatly in price acocrding to the kind, retailers charging from 75c to $1 per lb.

The Canadian Cheese Export Committee will pay the following prices for all cheese delivered to warehouse Montreal:

No. 1 grade, per lb.....25c
No. 2 grade, per lb.....24¼c
No. 3 grade, per lb.....24c

New York, Sept. 5.—Butter, firm. Receipts 8,610 tubs. Creamery, higher than extras, 58½c to 59c; creamery, extras, 92 score, 58c; firsts, 54c to 58½c; packing stock, current make, No. 2, 46c. Cheese firm. Receipts 10,578 boxes. State, whole milk, flats, current make, specials, 30¾c to 31¼c; do. average run, 30c to 30¼c; State, whole milk, twins, current makes, specials 30½c to 31c; do. average run, 29½c to 30c.

THE CATTLE MARKET

Montreal, Sept. 6.—At the Canadian Pacific Live Stock Market the offerings today amounted to 400 cattle, 800 sheep and lambs, 525 hogs and 200 calves. There continues to be a steady demand for supplies from outside buyers and a fair volume of business has been done in this respect this week, which has relieved the market of its surplus offerings. Sales of two cars of cattle were made for shipment to Buffalo, one car of cattle and one of sheep and calves to New York, five cars to Boston, and in addition to this three cars of cattle were for shipment to Lancester, and one car of hogs mor Toronto.

There was a fairly good demand for cattle today and the market was more active than usual in the middle of the week. The supply was not large but it was ample to meet all immediate requirements. Sales of the best steers available were made at $12.50 per 100 lbs. while lighter grades brought from $10.50 to $11.50, medium to fair from $9 to $10, and common $7 to $8. The top price paid for cows was $9 and the lower grades sold from that down to $7, with canners at $4.50 to $5.50. The quality of the bulls offered consisted chiefly of common stock which sold at from $5.50 to $7.

The feature of the market for small meats was the weakness in hogs and prices scored a decline of $1 per 100 lbs. as compared with those paid on Monday, which was attributed to the increased offerings and in sympathy with the lower prices ruling at other Canadian markets. The demand at the reduction was fairly good and sales of selectel lots were made at $20.50 to $21 per 100 lbs. weighed off cars, with a sut of $2 per 100 lbs, for rough mixed lots, $5 for sows, and $7 for stags.

A steadier feeling prevailed in the market for sheep and lambs on account of the increased demand from outside buyers for supplies for shipment to the United States and an active trade was done with sales of Ontraio stock at $13.50 to $14, and Quebec at $12 to $13, while sheep sold at $6 to $8 per 100 lbs. The tone of the market for milk-fed calves was stronger and prices ruled 50c per 100 lbs. higher on account of the small offerings and the good enquiry for the same with sales of choice at $15 to $16, and good lots at $12.50 to $14.50 per 100 lbs. The market for grass-fed stock was steady with supplies ample for all requirements and sales were made at $7 to $9 per 100 lbs. as to quality.

MILLFEED AND ROLLED OATS

The market for millfeed was without any new feature to note, prices for all lines being unchanged on account of the continued limited supplies available and the good demand for the same. Car lots of bran are quoted at $45, and shorts at $55 per ton, including bags, ex-track, and small quantities of corn feed in mixed car lots sold at $80 to $82, pure barley meal at $70 to $71, mixed grain moullie at $70 to $72, and dairy feed at $48 to $50 per ton, including bags, delivered to the trade. There was no change in the condition of the market for rolled oats, the demand being still somewhat limited with millers in some cases quoting broken lots of standard grades at $4.80 to $4.90, and others at $5 to $5.25 per bag of 90 lbs. delivered. Golden cornmeal is selling at $5.75 per bag.

THE BALED HAY MARKET

There was no important change in the condition of the market for baled hay, business being quiet owing to the fact that buyers in most cases are not disposed to operate to any extent at present prices ruling, and the demand is chiefly for lots to meet immediate wants, as the indications are that prices will reach a lower level in the near future. Sales of car lots of good timothy hay were made at $20 to $21 per ton, ex-track.

THE NUMBER OF TREES IN AN ACRE

I intend to lay out an acre of land for an apple orchard. How many trees will plant an acre? M. K.

You do not state how wide you intend to plant the trees and rows apart, but the following rule will give you number of trees at varying distances.

To determine the number of trees per acre for any given distance multiply the distance between the trees in the row by the width of the row. Take that number and divide 43,560 by it. The resulting figures will give the number of trees per acre.

The number of trees to set per acre:

16x16 feet—170 trees.
18x18 feet—134 trees.
20x20 feet—108 trees.
20x30 feet— 72 trees.
24x24 feet— 75 trees.
25x25 feet— 69 trees.
30x30 feet— 49 trees.
32x32 feet— 42 trees.
36x36 feet— 33 trees.
40x40 feet— 27 trees.

PRINCE EDWARD ISLAND

EXHIBITION and HORSE RACES

OPEN TO ALL CANADA

Charlottetown, Sept. 23-24-25-26-27, '19

$15,000---PREMIUMS---$15,000

For Prize List and all information write

C. R. SMALLWOOD, Secy.-Treas.,
Charlottetown, P.E.I.

BARN VENTILATION

(Contnued on page 856)

Another type of protection was devised, which is more satisfactory. It was found to be of considerable value in preventing, at least partially, an increased volume of air entering the inlet when the wind was blowing strongly against that side of the barn.

It has been found that it is better not to have louvers in the cupolas, but rather to allow the wind to blow straight through to avoid back drafts. Cupolas should not be made too large. Director J. H. Grisdale, of the Dominion Experimental Farms, strongly favors the open type cupola; it is used on all new Experimental Farm barns. There is a tendency in recent barn construction to discard cupolas entirely and to use galvanized iron cowls instead, both for barn ventilation and for ventilatioin of the hay loft. There are a number of good cowls on the market at the present time. The claim for them is that they will not back draft.

WORLD OF LIFE THAT EXISTS IN THE SOIL ON EVERY FARM

So much is still to be known in the world of nature that the Ottawa Farm Journal believes it is safe to say that most people are just beginning to realize how little they do know. To the farmer truly the increase of knowledge in things pertaining to plant growth is an increase of power. It had been known for some years that soils which had been subjected to a process of sterilization by heating or exposure to antiseptics gained thereby a marked increase in the power of producing crops. To understand the subject it is necessary first to obtain a general idea of what is going on in the soil. It is not so very long ago when scientists and farmers regarded the soil they examined and tilled as dead matter and believed that the activity within it was only chemical. But within the past few years opinions have changed. Decomposition, which was considered as a purely physical process, is now known to result from minute vegetative organisms or bacteria that render the soil suitable for the higher plants. Recent investigation at the Rothamstead experimental station, England, into the causes of land sickness revealed a new factor in the life of the soil, and one which promises to be of extreme interest and perhaps of practical importance to the farming industry.

These micro organisms exist in numbers so vast that, stated in figures, they have hardly a meaning. Thus, it is computed that in one gramme of ordinary loamy soil the number of bacteria is usually about 4,860,000, and may be much more, while in soil composed mainly of leaf mould under beech or oak trees the number may rise to 30, 40 or even 50 millions. These are tremendous numbers, but it must be remembered that bacteria are very small. The largest of them are far below the level of visibility, and the smallest elude the best microscopes, and are only to be inferred from their actions and products. In the language of the man of science, they are so very small that the "saturation point" would only be reached when there were 600,000,000 in one cubic centimetre of soil.

Fertilizing Microbes

They have various functions as soil makers. Some are engaged breaking up the purely mineral matter in the soil, and in the rock and sub-soil below it. Others, a numerous company, are engaged decomposing dead animal and vegetable matter in the soil. Others, again, and from the point of view of the agriculturist they are the most important of all, are engaged in diverse ways in fixing atmospheric nitrogen, and in reducing the nitrogen of ammonia to a state in which it becomes available for plant life. The peculiar importance of these is due to the fact that no element in the fertility of soils is more quickly exhausted by plants than nitrogen, while even when artificially supplied it is generally in a form which requires the labor of bacteria to bring it to the right state for use. Thus the fertility of soil is almost absolutely determined by the abundance of nitrogen fixing bacteria operating within it. If they are scarce the soil is poor; if they are abundant the soil is rich.

But for a long time one paradoxical fact seemed to disturb all these results, and write a big mark of interrogation against them. It was found that when the soil was sterilized either by heating or by the employment of a disinfectant, instead of losing fertility, as would be expected, it became markedly more fertile than unsterilized soil. This was first noticed in connection with attempts to kill insect pests by means of carbon disulphide. The poison killed the insects, and it killed the bacteria as well; and as fertility goes with bacteria a certain degree of infertility should have been the result. The contrary was the truth. Systematic work, however, soon showed that, while antiseptic treatment destroys a large proportion of the bacteria of the soil the investigator had only to await for a few days to find them more abundant in sterilized soil than in soil which had been untreated. In one of the Rothamstead soils, for example, every gramme contained at the outset 7,000,000 organisms, a number which, after heating, fell to 400, and within a short time rose again to such a degree as to make counting impossible. Treated with toluene, which acts less drastically than heat, the 7,000,000 were reduced to 2,600,000; but in nine days the number rose again to 40,000,000 or far in excess of the number ever found naturally in this kind of soil. It thus became an interesting and important matter to account for so marked an increase of life in soil following upon treatment which had for its purpose the destruction of life.

Bacteria Eaters

The explanation introduces us to the struggle for existence at low levels. A single bacillus, multiplying by subdivision, is capable of producing millions of its kind in 24 hours, but as the numbers in any particular soil remain fairly constant it follows that some factor is always at work restraining their increase. In the search for such a factor it was found that, in addition to the bacteria, there abound in the soil various animal organisms of the protozoa family, exceedingly minute (but still larger than the bacteria), which exist by preying upon the bacteria, and therefore keep them in check. In short these protozoan pigmies of the animal world act in the soil as the phagocytes act in the blood, and wage a constant warfare on the pigmies of the vegetable world. The warfare waged by the phagocytes is beneficent, and animal life would soon cease but for their activities. The warfare waged by the phagocytes of the soil maintains a sort of equilibrium between themselves and the bacteria, and though they may serve some useful purpose they undoubtedly put a limit to the useful work of the bacteria in fertilizing the soil by add-

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FOR ROOFING OR SIDING
BRITISH COLUMBIA
RED CEDAR
SHINGLES
LONGEST LIFE AT LOWEST COST
Order Shingles Now
¶ Owing to the merit of their product, B. C. shingle mills are having difficulty in meeting the rapidly increasing demand.
Consumers are advised to get in touch with local dealers at once on orders for B. C. Red Cedar Shingles.
Use the Right Nail
¶ The life of a B. C. Red Cedar Shingle is longer than the life of many kinds of shingle nails on the market.
It's the best shingle—it's worth the best nail.
Use Zinc, Copper, Hot Dipped or Zinc Clad nails for best results.
Our Shingle Booklet contains information every man intending to build or repair should have on hand. Ask your Local Dealer for it or send us a postcard request.
Shingle Agency of B.C.
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VANCOUVER, B. C.
Note the thickness 3 layers.

ing to its supplies of fixed nitrogen.

With this discovery the solution of the mystery of the fertility of sterilized soil became easy. In heated soil the protozoa are completely destoryed, while numbers of the bacteria or their spores survive the ordeal. When, therefore, these survivors begin to multiply again on the cooling of the soil or the evaporation of the sterilizing agent they go ahead without check. They find themselves in an environment from which their natural enemies have been removed, and their wonderful powers of multiplication are exerted to the full. When the sterilization is complete enough to kill all the animal life in the soil the development of the bacteria goes so far that, aas has been said, all attempts to count them, even approximately, became impossible.

That this discovery will lead to important economic results there is every reason to believe, and they will come when a not too costly method has been discovered for effecting the suppression of the injurious protozoa in the open field.

PENNY CRESS OR STINKWEED

This plant, which is also known as Frenchweed, spreads by seeds only, being either an annual or winter annual. In the former case the seeds lie dormant in the ground during the winter and germinate in the spring; in the latter case the seeds germinate during the late summer and pass the winter in the form of a seedling or young plant, which survives under the snow and continues iits growth in the following spring. The seeds can lie dormant in the ground for many years and germinte afterwards when the soil is distributed. It is found in bloom throughout the whole growing season. It is distributed generaly all over Canada but is especially abundant in the Prairie Provinces. The plant when bruised has unpleasant odor and if the green parts are eaten by milch cows the dairy products are spoiled. A few seeds ground up with wheat seriously affect the quality of the flour.

The seed is liable to occur as an impurity in clover, cereals and flax. Owing to its smaller size it impossible to separate it from the cereals without difficulty. In grain fields that have been infested with this weed the stubble should be burned over after harvest so as to destroy any seeds that may be lying on the surface of the ground. Shallow cultivation should be practised to encourage the germination of seeds in the soil after which they should be ploughed under. If the ground is harrowed once or twice when the grain is about 3 inches high, many of the spring seedlings will be destroyed. Isolated plants that escape should be puled by hand when in flower. In badly infested fields summer fallow may be necessary. The cultivation should be frequent as green pods can go on ripening when under the soil. Chemical sprays do not injure this plant. Great care should be taken to ensure that the seed sown is free from this weed. —J. Adams, Assistant Dominion Botanist.

DOES IT PAY TO PAINT?

"The future durability of your home, barns or fences depends upon paint. Paint is not used primarily for ornament. It is for protection and economy," writes Charles E. White, Jr., in a recent issue of the Ladies Home Journal. Mr. White's remarks will attract more than casual interest at this time, in view of the broad educational campaign now being conducted in Canada with the approval of the Canadian Trade Commission. Paint prevents rust and decay, it saves more money a year than the efforts of the whole American fire and poilce forces combined, asserts Mr. White, and goes on to say:

"Cream walls with tan trimmings or white walls with a green roof may attract your attention, but color appearance is really of but secondary importance. Paint is used primarily for protection. Paint is the armor worn by your buidings to prevent annihilation by the elements. We paint our buildings to preserve them. Exposure to the atmosphere causes rot or rust in most building material. Paint has been found to be ac hemical combination of materials which prevent rust and decay. Your building will live as olng as the paint lives.

Paint This Fall
Because:

—of proper weather conditions.
—surfaces are now in their most receptive condition, practically every trace of moisture having been eliminated by the summer sun.
—the wood being dry it absorbs more readily, and the paint holds better.
—a surface needing protection should never be allowed to go over the winter without it.
—property needs more protection during winter than at any other time.

"Save the Surface and you save all."

Defying the weather on the farm

Find the up-to-date farmer who will stand for unnecessary waste. Find anyone, for that matter, with enterprise enough to accumulate property, who is willing to see it go to pieces.

And yet all over this country are farmers and others who are losing money unnecessarily every day, and do not appreciate it.

No matter how substantial your building may be, the elements will damage it if you give them the chance.

Never for one instant does the work of disintegration stop unless you stop it. Unless the surface of a building is protected by a surface coating the elements work away at it night and day.

Barns weaken and sometimes even partially collapse. Silos decay. Pens and coops go to pieces and are split up for wood. Outbuildings are replaced—all of which, too often happens long before the building's normal time.

Surface protection preserves buildings indefinitely. Disintegration is impossible if the surface is protected. Save the surface and you save all.

Whatever the material, whether wood, metal, concrete, cement, stucco or plaster, remember the great importance of surface protection. Save the surface and you save all.

THIS ANNOUNCEMENT *is issued by the Canadian Save the Surface Campaign Committee, for the purpose of educating the public in the Preservative and Protective value of Paint, Varnish and Allied Products for the Conservation of Property, and has received the approval of the Canadian Trade Commission in the following words:*

"The realization of the above objects will lead to employment during the Reconstruction Period and bears our entire approval.

THE CANADIAN TRADE COMMISSION

23

CANADA

Commissioner."

"SAVE THE SURFACE AND YOU SAVE ALL" Paint & Varnish

WOOD | PLASTER | CONCRETE | MANUFACTURED PRODUCTS | METAL | BRICK

A FARM FABLE

(By Peter McArthur in the Toronto Globe)

Once upon a time, in a fat agricultural district, the farmers and shepherds were much troubled by having their sheep killed and worried. It was suspected that the damage was the work of wolves, and the watchdogs did a lot of barking about the matter, because it raised the cost of living.

From time to time committees of watchdogs were appointed to investigate the situation, but they always brought in reports that the wolves of that district were nice and quiet wolves, that never did anythinig that a self-respecting wold need not be expected to do in the course of his business.

And the depredations to the flocks continued.

Moral:—It is not a bad idea to examine the mouths of the watch dogs once in a while to see if they have wool on their teeth.

THE FARMER AS A BUSINESS MAN

No other industry has gone forward as fast as farming—Canada's foremost business. During the last fifty years, yes, during the last ten years, farm methods have been revolutionizing. The automobile, the tractor, the cream separator, the telephone and dozens of other machines have done away with old, tedious labors.

All Canada knows that farming is a real business, that the farmer is a business man. And all expect him to employ the latest machinery and the most effective methods. No one believes that the farmer should deprive himself of the labor saving devices and comforts that are known to men in other industries.

Thousands of farmers are practicing scientific farming in their fields. they understand crop rotation. They are plowing deeper. And they are getting 100 per cent returns from their endeavors. Yet there are not enough farmers who have put that same amount of efficiency into their "office work." Yes, office work. Every farmer should have an office. He should have a desk and keep a set of books and records. Here is the way one farm paper talks to its readers in an editorial:

"Farming is a business requiring the same amount of capital and brains to make it successful as any other business of equal size.

"The man who makes the greatest success of farming is the one who runs is on business principles. He knows where his money goes, and how much it costs to produce his crops and feed his cows.

"Farmer Jones may not feel as much at home in his office as he does in the steer lot, but he knows that the time he spends there keeping his accounts or writing out letters on his typewriter, is time spent to good advantage. He knows that this work is just as effective as that in the field.

"Every farmer ought to have an office and use it. It will help him to make his farm more profitable."

The Government insists that farmers keep sufficient records so as to make correct returns for income tax. And, even were this not necessary. farmers nowadays want to know just where they stand, just where their earnings come from.

The core of this office should be a typewriter, the greatest piece of office machinery ever invented. No merchant, no lawyer, no manufacturer—no man needs a typewriter more than a farmer.

A farm represents a large investment, often larger than that of the average merchant. The capital of a farming business should be protected by modern methods just as much as that of the progressive, successful business man.

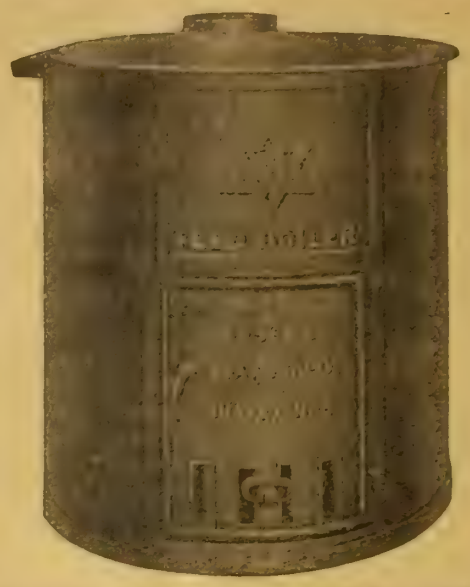
Why shouldn't a farmer have a printed letterhead? Like the banker, the lawyer, the storekeeper? Why shouldn't your letters go out to the world with a business-like appearance? Longhand letters are hard to read. They are hard to write. They are not neat. They look old-fashioned. Worst of all, longhand letters are unreliable. Mistakes occur because others can't read one's writing. Many mistakes are made in figures. Wrong shipments are made. Delays result.

With typewritten letters the figures are perfectly plain. No one can make a mistake. One or more carbon copies can be made of every letter, bill, etc., giving you a complete record of all transactions.

Typewritten letters receive first attention. If a person gets four typewritten letters and four longhand letters, he invariably reads the typewritten ones first and they receive quick attention.

What if your newspaper was all written in longhand? And it was the average kind of writing. Would you like it as well as a printed newspaper? You'd never read it. No, sir! People back up when they receive a long-

Sussex Feed Cookers



STOVES HEAVY SHEET STEEL

Heavy Cast Pots with Spouts.

No. 30—Capacity 1 bbl.
" 40— " 1½ "
" 50— " 2 "

Our prices are right—Let us quote you.

☞ SEE OUR BIG THRESHER AD. IN THIS ISSUE

WALLACE MACHINE WORKS, Limited,
SUSSEX, New Brunswick

Every Young Farmer in the Maritime Provinces

SHOULD WRITE TO TRURO FOR A

FREE Copy of the Calendar of Agricultural College, Truro, N. S.

The College opens Nov. 4th next. Tuition is Free

A complete course is offered in all branches of Agriculture and the related sciences as well as English, Mathematics, etc.

An ordinary school education, plus farm experience qualifies for entrance. The age of former students varies from 16 to 35.

The course lasts two years at the conclusion of which students are awarded the Associate Diploma of the College. Graduates may complete their B.S.A. course at Guelph or MacDonald Colleges. Previous graduates have from year to year stood at the head of their classes at these institutions.

For further information write

M. CUMMING, Principal,
Truro, N. S.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

FOR SALE—Berkshire Pigs for sale. Registered. HENRY HARDING, Fredericton, R. F. D. No. 2.

WANTED—A capable working housekeeper who is a goop cook. Kitchen help provided if required. Apply to LADY FRASER, Bedford, N. S.

FOR SALE—A nice bunch of pure-bred Hampshire Lambs. Apply to GEO. R. WARD, R. R. No. 1, West Bathurst, Glou. Co., N. B. Phone 84-6.

FOR SALE—200 Acres, 175 under Cultivation, good Buildings and Water Supply, 1 1-2 miles from Station. Will sell cheap. CHAS. LISTER, River-de-Chute, N. B.

FOR SALE—2 Young Pure Bred Guernsey Bulls, one five and the other three months old. 1 grade Heifer (Guernsey) 11 months old.—H. C. CORSON, Middlehead, South Bay C.B.

FOR SALE—Three Gasoline Engines, 3, 5, 7 H. P., also Drag Saw and Double Unit Milker. Will sell lot or separate. All new. P. O. Box 343, Montreal.

PAGE WIRE FENCE, Gates, Farm Engines, Grain Grinders, Wood-Sawing Machines, Root Pulpers, Cream Separators and many other useful articles. Write for prices, etc.—W. C. ROTHWELL, 11 Water St., St. John, N. B.

FOR SALE—Three pure bred Jersey Bulls, three to nine months of age, from heavy producing dams. Their grandson is the great bull Sophie's Torono. They are handsome animals; their breeding the best.—H. J. NORTH, Canning, Kings Co., N. S.

FOR SALE—Flemish Giant Rabbits, hardy, healthy, reasonable prices, young and mature stock. Pamphlet on management, uses, testimonials ten cents. Deduct from first purchase. I. A. McRAE, Orono, Ont.

GREAT WHITE LIGHT BURNERS—The lamp burner that doubles the light you get from your oil lamps. We have a few dozen to offer at 18c each, postpaid. They are a big investment for any person using oil lamps. In large size only. —THE MARITIME FARMER, Sussex, N. B.

THREE HUNDRED KEGS first quality wire nails, mixed sizes, suitable for repair work around farm buildings and other premises. Price $3.50 per 100 lbs. Apply by mail to "NAILS," care of Office Maritime Farmer, Sussex, N. B.

WANTED—Young Woman wishing to go to Toronto—Position open in small happy family as nurse housemaid—Good Wages—Comfortable living. Expenses to Toronto advanced. References exchanged—Correspondence invited. Mrs. A. GORDON RAMSEY, 54 Prince Arthur Ave., Toronto.

FOR SALE !

Two excellent Guernsey bulls from good stock, will be sold reasonable if taken at once.

SARAH E. M. SMITH,
Woodwards Cove, Grand Manan, N. B.

Bloomfield Stock Farm

Ayrshire and Guernsey Cattle—Shropshire Sheep

We are offering males and females, all ages. Have some good cows to freshen soon. Am booking orders for ram lambs for fall delivery. Write or phone for prices and description.

J. ROBIE MacDONALD,
Shubenacadie, - - Nova Scotia
Successor to J. MacDonald & Son

FOR SALE !

Ayrshire bulls, eleven to fourteen months. R. O. P. ancestors and best of breeding.

A. A. H. MARGISON
EAST CENTREVILLE - - N. B.

Five Ayrshire Bulls for Sale !

From good milking strain. All fit for service.

Prescott Blanchard,
Truro - Nova Scotia

hand letter. So few are easy to read.

We might as well be even more frank. Most of us write pretty poor letters. We scribble them off hastily and let the reader puzzle them out. And lots of people haven't the patience.

Picture two letters you might send out. Let one of them be on any old piece of paper, written in pencil in pencil in longhand.

Let the other be on a printed letterhead, with your name and address at the top. Let it be typewritten.

Which do you think the man at the other end would want to receive? Which would make the best impression? Which would show him that you were a business man? Certainly the typewritten letter.

Auto Tires $17.50

Fine non-skid tire for small cars, size 30 x 3½, fully guaranteed for 3500 miles

The Maritime Farmer begs to announce a substantial reduction in the price of non-skid tires for small cars, Fords, Chevrolets, Maxwells, etc. They are FIRSTS, fully guaranteed and we will sell them to you, provided you are a paid-up subscriber to the Maritime Farmer for $17.50 f. o. b. Sussex. Plain tires for $16.25, fully guaranteed for above mileage. Tubes for same size tire $2.90. These goods are all A1 stock and are made by a well known tire house. Of course these prices are for spot cash with order. The Maritime Farmer was able to take advantage of the recent break in the market and its large buying capacity to get you the benefit of this substantial cut in price. IT'S THE BEST BUY IN CANADA Today. Write the Auto Department, Maritime Farmer, Sussex, N. B.

A VERY VALUABLE BOOK

The Veterinarian, by Charles J. Korinck, V. S., is a work on the afflictions of horses, cattle, sheep, swine, poultry, etc., which every farmer should have in his home. The story of how treatment can best be administered is told in simple every-day English that any person can understand. The methods suggested by Prof. Korinek are simple and easily followed. The book will cost you seventy-five cents, postage paid. It may be the means of saving you as many dollars in the near future. How many men are there who meet trouble by writing to the Maritime Farmer or some other paper for information which will be found in the Veterinarian? It is strongly bound in cloth, has serviceable illustrations and is well indexed. Seventy-five cents will bring it to you.

FOR IMMEDIATE SALE

A number of Ayrshire Cows. Ask about them, it will be worth your while.

One pure bred Ram Lamb, Horned Dorset, from the best of stock, in good condition.

B. R. Cockerel from the best trap nest strain in Canada. $2.00 each while they last.

S. J. HAWKINS,
Stewiacke, Col. Co., N. S.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

SUNNYSIDE STOCK FARM

Ayrshire Cattle and Chester White Swine

Present offering: one bull two years old, two aged seventeen months. Also a number of younger ones. Females any age. This herd is bred for production having the combined strain of "Jean Armour" and "White Heather"

J. FRANK ROACH, Proprietor,
Phone 111. - - - - Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.

We have young bulls for sale whose two nearest dams (both Canadian champions) average as high as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows: and one ready for service from a 41-lb. sire and an 18,000-lb. two-year-old dam. Send for our BOOK OF BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT

BELLEVUE STOCK FARM

Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, HAMMOND RIVER, N. B.

We are offering for sale calves of both sexes, sired by Dutchland Pieterje Count, a bull of splendid size and type, whose four nearest dams have records averaging 28.61 pounds of butter in seven days. His dam is a daughter of Colantha Johanna Lad, who has 101 A. R. O. daughters, 4 over 32 lbs., 7 over 30 lbs., three of them world's records for 365 days. If you want something choice, come and see these calves or write for further particulars.

We will also book orders for young Yorkshire pigs for next spring's delivery.

WM. S. HARDING, Prop.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

We have sold 13 head in the last few weeks but there are some dandy good ones left yet. Special offering—2 heifer calves and several bull calves, sired by Prince Colantha's Canary B. whose four nearest dams average 32.84 lbs. butter in 7 days; 105 lbs. milk in one day. These are beauties. A couple of yearlings and two-year-old heifers, bred to Prince, due in the fall. Severa young cows and heifers milking, due to calve from August to December. We have a couple o bull calves fit to head the best herds in the provinces. Come and see them. We would be Pleased to meet you at Truro if notified.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

BULL'S CREEK FARM

R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lbs. butter each in seven days. These cows have in turn been bred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkable combination of breeding and will sell a heifer calf or two. Get your orders in quick, they won't be here long.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM

Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

FOR SALE !

Our Shorthorns are about ready for the block. Parties wishing to start a herd can do so at reasonable prices from us. If not sold for breeding purposes, will go for beef. Both sexes, all ages. Come and see them before buying.

A few very nice Berks for sale.

L. M. ANDERSON, Sackville, N. B.

FIRSHADE FARM

DUAL PURPOSE SHORTHORNS

Present Offering:—Two Bull Calves

No. 1.—Son of Daisy Lodge, R. O. P. 11,638 lbs. milk, 480 lbs. fat. This cow led the four-year-old class in the Canadian Record of Performance.

No. 2.—Son of Queen Charlotte. She as a two-year-old has a R. O. P. of 7224 lbs. milk, 316 lbs. fat. This cow stands eighth in milk and sixth in fat production in the two-year old class.

The sire of these calves is Nivelle, whose dam as a two-year-old has a R. O. P. of 5496 lbs. of milk, 240 lbs. fat in 295 days.

P. R. L. FAIRWEATHER, Rothesay, N.B

Advertise in the Farmer

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep

Orders now booked for EWE and RAM LAMBS for fall delivery, several extra good animals for sale out of Ewes clipping 10 to 12 lbs. and sired by an Imported Ram weighing about 400 lbs. with a clip of 18 lbs.

BREED LEICESTERS the Sheep with THE HEAVY FLEECE.

G. C. Cossar, Proprietor. J. Meiklejohn, Agent.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm
OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired by Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

Clearing Sale of Shorthorn Cattle

Am offering for sale my herd of pure bred registered Shorthorn cattle. These cattle range in age from 7 years to 3 years, or a little less, with one bull calf two weeks old, and are all fine in type and color.

I have also exceptionally good grade cattle of various ages for sale. All will be sold at a reasonable price and offer an unusual opportunity to anyone desiring to start a herd of choice stock or to renew an old herd.

J. E. HETHERINGTON, - Codys, N. B.

Springbrook Farm Ayrshires !

Females, all ages. Also a number of bull calves ranging from one month to eight months. Sired by the prize winning bulls "Morton Mains Amanth" Imp. and "Cherry Bank Cicero."

McINTYRE BROS.
SUSSEX CORNER, - - N. B.

AYRSHIRE CATTLE. KARAKULE-ARABI SHEEP

We are offering two Ayrshire Bulls, ages 9 and 14 months. They are from big producing dams. Prices very moderate.

We are also offering Karakule-Arabi rams and ewes, producers of the finest Persian Lamb Fur.

For particulars and prices write

THE EASTERN KARAKULE-ARABI SHEEP CO., LTD. WINDSOR, N. S.

FOR SALE !

Eggs for Hatching and Live Stock

Get a setting of eggs from our O. A. C. Bred to lay Barred Rocks, Rhode Isalnd Red or White Wyandotte hens. We get eggs every day in the year. 10 cents per egg, $8.00 per hundred.

Extra well bred Holstein calves, both sex for sale.

Booking orders for Chester White pigs.

N. W. Eveleigh
"The Orchards", Sussex, N. B.

CAULIFLOWER PLANTS

Genuine Early Snowball. 50 for 45c, prepaid. Shipped successfully everywhere. Ask for Price List of Cabbage, Celery and other Vegetable Plants.

HEROLD'S FARMS,
FRUITLAND, Ontario. Niagara District

Lawndale Stock Farm
Jerseys and Shorthorns (Pure Bred)

Jersey Offerings for the Summer of 1919—

2 year old pure bred heifer due to freshen in December from a bull of noted parentage.

One 4-year-old Grade, heavy milker, due to freshen from pure bred bull, Oct. 11th, 1919.

Several pure bred calves, male and female.

Shorthorn Offerings for Summer of 1919—

One young bull (pure bred and registered), dropped March, 1918, of splendid parentage.

Two yearling Heifers, very thrifty.

One Bull Calf, dropped Jan. 16th, 1919.

Several pure bred calves, male and female, by Imported English milking Shorthorn bull, out of splendid producing dams.

Apply for information to

I. M. LOVITT, M.D.,
Yarmouth North, - Nova Scotia

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T. D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B'

Ayrshire Cattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co,, N. S.
C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE PIGS

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Milking Shorthorns for Sale

We are offering some choice young Shorthorn bulls of the milking strain, ages 3 months to 15 months.

Also a limited supply of heifers, one and two years of age.

For particulars apply to

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett
Upper Sackville, - - - N. B.

KEEP
Holstein-Friesian Cows

1. The Holstein-Friesian is a large vigorous cow, full of energy and abounding in vitality.
2. Her physical organization and digestive capacity are such that she is able to turn to the best advantage the roughage of the farm, converting the same into merchantable products.
3. She yields large quantities of most excellent milk, fit for all uses and especially suited for shipping purposes.
4. Heredity is so firmly established through her long lineage that she is able to perpetuate herself for the production of strong, healthy calves.
5. When for any reason her usefulness in the dairy is at an end, she fattens readily and makes excellent beef.

If you can't buy a herd, buy a heifer

Information from the Holstein-Friesian Association

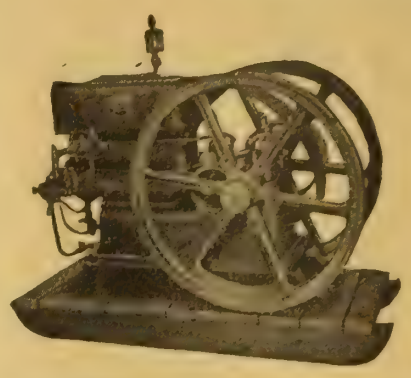
President, Dr. S.F. Tolmie, M.P. Victoria, B.C.
Secretary, W A. Clemons St. George, Ont.

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,
AMHERST, - - - N. S.

Brantford "Ideal" Kerosene Engines



An engine for every need. Also operated on Gas and Gasoline.

Maple Leaf Grain Grinders. 6 to 15 in.

Kerosene Light Tractors

WINDMILLS,

Pumps.
Tanks.
Waterboxes.
Steel Saw Frames.
Concrete Mixers.

Agents wanted in unrepresented territory.

GOOLD, SHAPLEY & MUIR CO., Limited
BRANTFORD, CANADA

FOR SALE !

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st, 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and st in grade cow, competing against all breeds at our late show at Charlottetown, with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

FOR SALE !

We have an exceptionally fine litter of 13 (living) of our large Berks for sale @ $12.00, four to 6 weeks old. Ready first of June.

Owing to scarcity of labor and we not being able to see eye to eye with certain Gov. officials, as to the type of Shorthorn to raise, we have decided to go out of the breeding and raising of pure bred live stock. Therefore our herd of 40 head of Shorthorns will be sold between now and fall for either breeding or for beef. Parties wishing to buy, please come and see them. We have seven very nice bulls, 10 months to two years.

L. M. ANDERSON, Sackville, N. B.

QUALITY BRAND
Rabbitry and Poultry Yards

Amherst, Nova Scotia
E. I. PEEL & SON, Proprietors

Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

Black Siberian Hares, the most profitable fur bearing animal living, price per pair	$25.00
Silver Siberians, price per pair	5.00
Belgians, price per pair	3 00

The above prices apply to stock under 3 mos. old

Day-old White Leghorn Chicks, price 25c each. D. W. Young's stock, as good as money can buy.

White Leghorn 260 egg strain, for hatching	$2.00 per 15
White Leghorn, No. 1 exhibition stock for hatching	$4.00 per 15

We Guarantee Safe Delivery. Terms Cash with Order

Glenrane Farm Holsteins

We have for sale a number of Cows due to freshen in Sept. & Oct. also yearling Heifers & a few Heifer Calves. We still have a few Bull Calves 8 & 9 months old.

Our herd bull Homestead Hengrueld Rooker is also for sale after September. These cattle are all from stock backed by official records.

We will have a litter of York pigs due Sept. also our stock boars 16 months old for sale. These are the finest type of York pigs.

One Oxford grown Ram and a number of grade Ewe Lambs.

ROBT. HICKS
WEST BATHURST, - - N. B.

Advertise in the Farmer. Advertise in the Farmer.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

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ST. STEPHEN EXHIBITION

THE ST. STEPHEN EXHIBITION

The Charlotte County Exhibition annually held at St. Stephen, N. B., became international in character this year when at the time of their eleventh annual fair, September 9th to 12th, the contests were open to exhibitors from the Maritime Provinces and Washington County, Maine.

The St. Stephen Fair has, under the skilful management of Mr. W. S. Stephen and a capable board of energetic working directors, been making steady progress. The innovation of admitting exhibitors from beyond the limits of Charlotte County this year is one which we hope will be continued. The introduction of such magnficent herds and flocks as were seen at the 1919 Fair—Snowball's Shorthorns and Dickies' Holsteins and King Shrops and Cheviots, as well as Jewett's Clydes, Percherons and Standard Breds will have the effect of creating an ideal in the minds of the local exhibitors who have heretofore been accustomed to show flocks and herds without bestowing any particular care upon them in the way of fitting or tidying up for the showring. There is a considerable lot of fairly good stock in the hands of Charlotte County breeders that, with a little fitting and some extra care, would be quite presentable and make a good showing.

The money prizes won at the show do not begin to equal the value that the breeder receives from the publicity his flocks and herds receive from show ring winnings. Wise is the breeder who brings his stock to the fairs in a presentable condition and who can show the public the records of performance of the animals in his herd. Good appearance coupled with good performance tends to an increased demand and sale of stock at remunerative prices.

The attendance at the St. Stephen Fair was all that could be desired but the weather man did not favor the show with a brand of weather that would have a tendency of creating much enthusiasm. Cloudy and cool were the first two days of the fair, while the last two days brought down pours of rain. Despite this fact, however, there was a record attendance, so much so that the grounds which have been considerably extended durin the past year, were taxed to their utmost capacity in accommodating the thousands that thronged through the buildings, midway and other sections of the fair grounds.

The old horse barns have been torn down and new and more commodious horse and cattle barns erected to the rear of the old site on an area purchased to give increased accommodation. We believe the management proposes the erection of other buildings during the coming year. The grounds are splendidly located and a railway siding on the fair grounds gives the stockmen a chance to unload and load the stock with minimum labor, a feature which is very much appreciated by all who have anything to do with the showing of live stock. The citizens of St. Stephen have reason to be proud of their exhibition plant. The biggest drawback to the St. Stephen Exhibition in the way of getting exhibits from outside points is the fact that all coming from east of St. John must be transferred over two lines of railway, which makes the freight charges almost prohibitive. This is a feature that the management of the show will do well to use their best efforts towards getting the very lowest possible freight rates conceded to their exhibitors.

In the live stock department, Snowball's Shorthorns, Clydesdales and Sheep, Jewett's Clydesdales, Percherons and Standard Breds, Dickies' Holsteins, the Sir Wm. Van Hornr estate Ayrshires and Cyldesdales, Tom McDonald's swine and Kings Shrops and Cheviots were out in the pink of condition. Martin Reid, A. T. Reed, Freeman Lever, Walter Howland and Manzer Moffatt, Polleys Forsythe and others had their herds and flocks out in good working field fit. The respective herds and flocks contained some promising, useful looking animals that with some extra fitting and trimming would put up a good appearance. The Van Horne Estate Ayrshires were a particularly smooth and well fitted lot.

In the Horned Dorset shearling ram class a first prize winner at this year's Toronto show went down to second place to a ram bred and exhibited by R. A. Snowball, of Chatham, N. B.

The judges of the respective classes were:

Heavy Horses.—T. G. Hetherington, B.S.A., Fredericton, N. B.

Light Horses.—Jas. Easton, Chatham, N. B.

Sheep and Swine.—T. G. Hetherington.

Cattle.—Prof. J. P. Sackville, O.A.C. Guelph, Ont.

Poultry.—J. Clarke, Cainsville, Ont.

Domestic.—Miss Elizabeth Nutter, Fredericton.

Fancy.—Mrs. E. McL. Hatt, Fredericton.

Agricultural Products.—S. J. Moore, Truro, N. S.

Honey—L. T. Floyd, Fredericton.

Dairy Products.—H. Coleman, Sussex.

The Agricultural Hall was filled to its utmost capaclty with the products of the field and garden and made the best display ever seen at a Charlotte County fair. There was a good display of fruit. The Domestic lines were hardly up to the standard of some previous years in point of quantity and while the same may be said of the fancy work department, the quality of the workmanship excelled that of last year when the display was more extensive.

There was a pretty fair showing of poultry. Mr. McCullough, Poultry Superintendent for the province, had a demonstration exhibit on the grounds consisting of incubators with newly hatched chicks, brooders and a colony house in which he demonstrated the proper care of young chicks during the first few days while being transferred from incubator to brooder and colony house. His demonstrations were much appreciated by interested poulrty keepers.

The Dominion Experimental Station, Fredericton, had an instructive and interesting display of the products of the farm interspersed with placards bearing some sage morsels of advice to the farmer.

The Dominion Live Stock Division also had a booth in which their representative, J. K. King, B.S.A., talked sheep and explained to many interested parties the various plans whereby the Division can help the sheep growers in procuring and maintaining larger and better flocks.

There was not much competition in any section of the pure bred classes of live stock.

In Clydesdales Snowballs' Baron's Own had an easy first over H. C. Jewet's Dr. McCoy. Another Snowball entry took third place, leaving a trim stallion shown by Mr. Spinney, of St. George, just outside the money.

There were three entries in the aged mare class, Sweet Mary and Seaham Bonnie, a pair of mares shown by the Van Horne estate sandwiching Rose of Liberty, shown by R. A. Snowball.

The only Percherons on the grounds were Montgomery Ward and Arlon shown by H. C. Jewett, who also had the first, second and third prize Standard Bred Stallions in Exposer, Harvest Hope and Native Worthy respectively.

Snowball's Shorthorns had no competitors, Dickie Bros., of Truro, N.S., easily captured first and second monies in every section in which they had entries. Their competitors were Chas. Maxwell, St. Andrews, Manzer Moffatt, Wm. Moffatt and M. S. Lyons & Sons, of Calais, Me.

The Van Horne Estate Ayrshires were easily first in their respective sections, one of their bulls, a junior yearling capturing the St. Croix Courier Silver Cup for the best bull at the exhibition owned by a Charlotte County Exhibitor.

The Coven Hoven Stock Farm's special prizes for the best pure bred bulls between one and two years old were won by Manzer Moffatt's, R. A. Snowball's and M. S. Lyons & Son's Holsteins in first and third positions sandwiching a Shorthorn.

The best grade calves for which the Canadian Bankers' Association offers prizes were won by Agnes Reed and Alice L. Lever, of Rollingdam.

Following is a list of the prize winners:

Clydesdale Horses

Stallion, 4 years old and upwards—1 and 3, R. A. Snowball, Chatham, N. B.; 2, H. C. Jewett, Fredericton, N. B.

Stallion, 1 year old—1, R. A. Snowball.

Filly, 3 years old—1 and 3, Sir Wm. Van Horne Estate, Coven Hoven Farm, St. Andrews, N. B.

Matched Team—1, Coven Hoven Stock Farm; 2, R. A. Snowball.

Standard Breds

Stallion, 3 years old—1, 2 and 3, H. C. Jewett, Fredericton.

Brood Mare—1, Wilfred Todd, Milltown.

Filly or Gelding, 3 years old and upwards—1, A. H. White, Moore's Mills; 2 and 3, W. F. McGibbon, Moore's Mills.

Foal of 1919—1, Wilfred Todd.

Carriage Horses

Filly or Gelding, 3 years old and upwards to halter—1, Hugh Love, St. Stephen.

Mare or Gelding in harness—1, John Webber, St. Stephen; 2, J. W. Robinson, St. Stephen; 3, Herbert Dick, Moore's Mills.

Matched Team—2, D. R. Chown, Oak Hall.

Hackneys

Stallion, 3 years old—1, R. A. Snowball.

Filly, 2 years old—1, R. A. Snowball.

Saddle Horses

Filly or Gelding, 3 years old—1, Hazen Linton, St. Stephen.

Percherons

Stallion, 3 years old—1 and 2, H. C. Jewett.

Agricultural Horses

Brood Mare—3, John Trafton, Lynnfield.

Mare, 3 years old—1 and 2, Rown Trafton, Lynnfield; 3, Louis Asker, St. Stephen.

Filly, 2 years old—1 and 2, Polleys Forsythe, Little Ridgeton.

Foal of 1919—3, John Trafton.

Matched Team—1, Rown Trafton; 2, Peter McLeod, Oak Bay; 3, Polleys Forsythe.

Heavy Draft

Mare or Gelding, 3 years old—1, Wm. Moffatt; 2, R. A. Snowball; 3, Geo. H. Budd, St. Stephen.

Filly or Gelding, 2 years old—1, Chas. Maxwell, St. Andrews.

Filly, 1 year old—1, R. A. Snowball.

Matched Team—1, Wm. Moffatt; 2, Manzer Moffatt; 3, Geo. H. Budd.

Ponies

12 hands or under—1, Carman Ganong, St. Stephen; 2, Jack Pike, St. Stephen.

Pair—1, Philip and Whidden Ganong.

12 hands up to 13½ hands—1, H. C. Purves, St. Stephen.

BEEF CATTLE

Shorthorns

Bull, 3 years and over (1)—1, R. A. Snowball, Chatham, N. B.

Bull, senior yearling (1)—1, R. A. Snowball.

Bull, senior calf—1, R. A. Snowball.

Bull, junior, calf—1 and 2, R. A. Snowball.

Cow, 4 years old—1, 2 and 3—R. A. Snowball.

Heifer, 2 years old—1, R. A. Snowball.

Heifer, senior yearling—1, R. A. Snowball.

Heifer, junior yearling—1, R. A. Snowball.
Heifer Calf, senior—1 and 2, R. A. Snowball.
Heifer, calf, junior—1, and 2, R. A. Snowball.
Aged herd—1, R. A. Snowball.
Breeder's young herd—1, R. A. Snowball.

DAIRY CATTLE

Ayrshires

Bull, 3 years old and upwards—1, A. T. Reed, Rolling Dam.
Bull, junior yearling—1, Sir Wm. Van Horne Estate, St. Andrew's, N. B.; 2, A. T. Reed.
Bull, senior calf—1 and 2, Sir Wm. VanHorne Estate; 3, Freeman Lever, Rolling Dam; 4, Martin Reed, Rolling Dam.
Bull, junior calf—1 and 2, Sir Wm. Van Horne Estate; 3, A. T. Reed.
Cow, 4 years and upwards—1, Walter Howland, Moore's Mills; 2 and 3, A. T. Reed, Rolling Dam.
Dry Cow, 3 years old—1, A. T. Reed.
Cow, 3 years old—1, A. T. Reed.
Cow, 2 years old—1, Martin Reed, Rolling Dam.
Heifer, Senior yearling—1, Sir Wm. Van Horne Estate; 2, A. T. Reed; 3, Martin Reed.
Heifer, junior yearling—1 and 2, Sir Wm. Van Horne Estate; 3, A. T. Reed.
Heifer, senior calf—1 and 2, Sir Wm. Van Horne Estate; 3, A. T. Reed.
Heifer, junior calf—1 and 2, Sir Wm. Van Horne Estate; 3, Martin Reed.
Herd, aged—1, A. T. Reed.
Breeders' young herd—1, Sir Wm. Van Horne Estate; 2, A. T. Reed; 3, M. A. Reed.
Bull, any age—Diploma, Sir Wm. Van Horne Estate.
Female, any age—Diploma, Sir Wm. Van Horne Estate.

Jerseys

Bull, 3 years old—1, J. Polleys Forsythe, Little Ridge.
Cow, 4 years old—1, Hazen Linton, St. Stephen; 2, Thos. McClure, St. Stephen.
Cow, 2 years old—1, Frank McGarrity, Milltown.
Heifer, senior yearling—1, Hazen Linton.

Holsteins

Bull, 3 years old—1, Dickie Bros., Truro, N. S.; 2, Chas. Maxwell, St. Andrews.
Bull, 2 years old—1, Manzer Moffatt, St. Stephen.
Bull, junior yearling—1, M. S. Lyons & Son, Calais, Me.
Bull, senior calf—1 and 2, Dickie Bros.; 3, Manzer Moffatt.
Bull, junior calf—1, Dickie Bros.; 2, Wm. Moffatt.
Cow, 4 years old—1 and 2, Dickie Bros.; 3, Wm. Moffatt, St. Stephen.
Dry Cow, 3 years old—1 and 2, Dickie Bros.
Cow, 3 years old—1, Manzer Moffatt; 2, M. S. Lyons & Son.
Breeders' young herd—1, Dickie Bros.; 2, Manzer Moffatt.
Best Bull—Diploma, Dickie Bros.
Best Female—Diploma, Dickie Bros.

Fat Cattle

Best beef animal—1, Manzer Moffatt.
Best pair fat cattle—1, Manzer Moffatt.

Beef Grades

Cow, 3 years old—1, R. A. Snowball; 2, Wm. Moffatt.
Heifer, 1 year old—1, Polleys Forsythe.
Heifer Calf—1, Wm. Moffatt.
Steer, 2 years old—1, Wm. Moffatt.
Steer, 1 year old—2 and 3, Polleys Forsythe; 1, Wm. Moffatt.

Grade Jerseys

Cow, 4 years old—1, Wm. Moffatt; 2 and 3, J. Polleys Forsythe.
Cow, 3 years old—1 and 2, Polleys Forsythe.
Heifer, 2 years old—1, Polleys Forsythe; 2, Wm. Moffatt.
Heifer, 1 year old—1 and 2, Polleys Forsythe.
Heifer Calf, senior—1 and 2, Polleys Forsythe.
Heifer, junior calf—1 and 2, Polleys Forsythe; 3, Aubrey Stevenson, St. Stephen.
Grade herd—1, Polleys Forsythe.

Grade Ayrshires

Cow, 4 years old—1, H. Freeman Lever.
Heifer, 2 years old—1, Walter Howland; 2, Freeman Lever.
Heifer, 1 year old—1, H. Freeman Lever; 2, Albion Moffatt.
Heifer, senior calf—1, H. Freeman Lever.
Heifer, junior calf—1, H. Freeman Lever.
Herd—1, H. Freeman Lever.

Grade Holsteins

Cow, 4 years old—1, M. S. Lyons & Son; 2, Manzer Moffatt.
Cow, 3 years old—1, M. S. Lyons & Son; 2, Howard Densmore, St. Stephen; 3, F. Acker.
Cow, 2 years old—1, Albion Moffatt; 2, Manzer Moffatt.
Heifer, 2 years old—1, John Trafton, Lynnfield; 2, Wm. Moffatt; 3, Albion Moffatt.
Heifer, 1 year old—1, M. S. Lyons & Son; 2, Albion Moffatt; 3, Manzer Moffatt.
Heifer, senior calf—1, Albion Moffatt.
Heifer, junior calf—1, Chas. Maxwell, St. Andrews; 2, John Densmore.
Herd—1, M. S. Lyons & Son; 2, Albion Moffatt; 3, Manzer Moffatt.

French Canadian Grades

Cow, 4 years old—1, L. B. Mitchell, St. Stephen.
Heifer, 2 years old—1, Milton McCready, St. Stephen.
Heifer, 1 year old—1, L. B. Mitchell.
Heifer, senior calf—1, Milton McCready.

SWINE

Improved Berkshires

Boar, over 1 yr., under 2 yrs.—1, Polleys Forsythe, Little Ridge.
Sow, over 1 yr., under 2 yrs.—1, Polleys Forsythe; 2, Martin Reed, Leverville.
Sow, under 6 mos.—1 and 2, Polleys Forsythe, Little Ridge.

Improved Yorkshires

Boar, over 6 months ,under 1 yr.—1, Fredric Lever, Rolling Dam.
Sow, over 2 yrs.—1, Albion Moffatt, St. Stephen; 2, Fredric Lever.
Sow, 2 yrs.—1, Daniel McLeod, Oak Bay; 2, Albion Moffatt.
Sow, over 6 months, under 1 yr.—1, Thomas McDonald.
Breeding Sow with litter—1, Wm. McLeod, Oak Bay.

Any Other Pure Breed

1, Albion Moffatt, Polan China Boar.
Sow, over 6 months, under 1 yr.—1, Robbie Babb, St. Stephen; 2, Sterling Babb, St. Stephen.
Sow, under 6 months—1, Albion Moffatt.
Breeding Sow with litter—1, Albion Moffatt, St. Stephen.

Fat Pigs (Boars excluded)

Spring Pig—1, Sterling Babb; 2 and 3, Daniel McLeod.

Grades

Sow, over 6 months, under 1 yr.—1, Thomas McDonald, St. Stephen; 2, Manzer Moffatt, St. Stephen.
Breeding Sow with litter—1, Manzer Moffatt.
Special prize open only to members of Boy Breeders' Clubs in New Brunswick.

Yorkshires

Sow, over 1 yr.—Fredric Lever, Rolling Dam.
Boar, over 4 months, under 1 yr.—1, Frederic Lever.

SHEEP

Leicesters

Ram, 2 shears and over—1, John A. Bell, Milltown.

Shropshires

Ram, 2 shears and over—1, John H. King & Son, Sussex; 3, Howard Trafton, Lynnfield.
Shearling Ram—1, John H. King & Son; 2, R. A. Snowball, Chatham.
Ram Lamb—1, John H. King & Son; 3, Howard Trafton.
Ewe, 2 shears and over—1, John H. King & Son; 3, Howard Trafton.
Shearling Ewe—1, John H. King & Son; 3, Howard Trafton.
Ewe Lamb—1, 2 and 3—John H. King & Son.
Pen, graded—1, John H. King & Son; 3, Howard Trafton.
Pen Lambs—John H. King & Son.

Cheviots

Ram, 2 shears and over—1 and 2, Geo. King, Sussex.
Shearling Ram—1, Geo. King.
Ram Lamb—1, 2 and 3, George King.
Ewe, 2 shears and over—1, 2 and 3, George King.
Shearling Ewe—1, Geo. King.
Ewe Lamb—1, 2 and 3, Geo. King.
Graded Pen—1, 2, Geo. King.
Pen Lambs—1, Geo. King.

Dorset Horns

Shearling Ram—1, R. A. Snowball; 2, Manard Smith, Bathurst.
Ram Lamb—1 and 2, Martin Reed, Leverville; 3, Walter Howland, Moore's Mills.
Ewe, 2 shears and over—1, R. A. Snowball; 2, Martin Reed; 3, Walter Howland.

Graded Long Wool

Pr. Ewes, 2 shears and over—1, John A. Bell, Milltown, N. B.; 2, Stanley J. Libbey, Milltown, N. B.
Pair Ewes, shearling—2, John A. Bell.
Pair Lambs—1, John A. Bell.
Pen—2, John A. Bell.

Grades, Medium Wool

Pair Ewes, 2 shears and over—1, R. A. Snowball; 2, Alex. Forsythe, Little Ridge; 3, H. Freeman Lever, Rollingdam.
Pair Ewes, shearling—1, R. A. Snowball; 2, H. Freeman Lever; 3, Walter Howland.
Pair Lambs—1, R. A. Snowball; 2, Coleman Gillis, St. Stephen; 3, Walter Howland.
Pen—1, R. A. Snowball; 2, H. Freeman Lever; 3, Walter Howland.

Fat Sheep, any Breed or Grade

Ewe, over 1 yr.—1, R. A. Snowball; 2, Walter Howland.
Ewe Lamb—1, R. A. Snowball; 2, Frank Morrison, St. Stephen; 3, H. Freeman Lever.

POULTRY

Fowl

Anconas Hen—1 and 2, Howard Dinsmore, St. Stephen.
Brahmas, Light Cock—1, Frank McGarrity, Milltown, N. B.
Brahmas, Light Hen—1 and 2, Frank McGarrity; 3, Clarence McCarty, Calais, Me.
Buttercup Sicillian Hen—1, Cecil Johnson, Moore's Mills.
Game, any variety cock—1, Geo. Tourtillotte, St. Stephen.
Game, A. V. Hen—1, 2, and 3—Geo. Tourtillotte.
Houdan Cock—1, Frank Wheelock, St. Stephen; 2, Mrs. Fred Graham, St. Stephen.
Houdan Hen—1, Mrs. Fred Graham.
Hamburgs, Silver Spangled Hen—1, Thomas Bartlett, St. Stephen.
Leghorns, White S. C. Cock—1, Frank Wheelock.
Leghorn, White S. C. Hen—1, and 2, Thomas Vanstone, St. Stephen.
Leghorn, Brown S. C. Cock—3, Manzer Moffatt.
Leghorn, Brown S. C. Hen—1, Manzer Moffatt; 2, Thomas Bartlett.
Leghorns, Black S. C. Hen—1, W. S. Stevens, St. Stephen.
Orpingtons, Buff Hen—1 and 2, A. C. McCready, St. Stephen.
Orpington, White Hen—1 and 2, Frank McGarrity.
Plymouth Rocks Barred Cock—1, W. S. Stevens, St. Stephen; 2, Aubrey Stevenson, St. Stephen.
Plymouth Rocks, Barred Hen—1 and 3, W. S. Stevens; 2, Aubrey Stevenson.
Plymouth Rock, White Cock—1, E. B. Greenlaw, Calais, Me.
Plymouth Rock, White Hen—1, E. B. Greenlaw.
Plymouth Rock Columbia Hen—1 and 2, Gustav Klein, Milltown, N. B.; 3, Ernest Klein, Milltown, N. B.
Rhode Island Reds, S. C. Cock—1 and 2, Aubrey Stevenson; 3, Milton McCready, St. Stephen.
Rhode Island Reds, S. C. Hen—1 and 2, Milton McCready, St. Stephen.
Wyandottes, Silver Laced Cock—1, Gustax Klein; 2, Ernest Klein.
Wyandottes, Silver Laced Hen—1, Gustav Klein; 2 and 3, Ernest Klein.
Wyandottes, White Cock—1, Milton Maxwell, St. Stephen; 2, Thomas McClure, St. Stephen.
Wyandottes, White Hen—1 and 2, C. H. Maxwell, St. Stephen; 3, Milton Maxwell.
Wyandottes, Columbia Hen—1, Gustav Klein; 2 and 3, Ernest Klein.

Chickens

Light Brahmas, Cockerel—1 and 2, Frank McGarrity.
Light Brahmas, Pullet—1 and 2, Frank McGarrity.
Game, any variety, Cockerel—1 and 2, Geo. Tourtilotte.
Game Pullet, A. V.—1 and 2, Geo. Tourtilotte.
Silver Spangled Hamburg Cockerel—1, Thomas Bartlett.
Silver Spangled Hamburg Pullet—1, Thomas Bartlett, St. Stephen.
Leghorns, S. C. Cockerel—1 and 3, Thomas Vanstone; 2, Ernest Klein.
Leghorns, S. C. Pullet—1 and 2, Thomas Vanstone.
Leghorns, Brown S. C. Cockerel—1, Cecil Johnson, Moore's Mills; 2, Manzer Moffatt.
Leghorns, Brown S. C. Pullet—1, Manzer Moffatt; 2, Cecil Johnson.
Leghorns, Brown Rose Comb Cockerel—1, Ernest Klein.
Leghorns, Brown Rose Comb Pullet—1, Ernest Klein.
Orpingtons, Buff Cockerel—1, A. C. McCready.
Orpington White Cockerel—1 and 2, Frank McGarrity; 3, Mrs. Arthur Livingston.
Orpington, White Pullet—1 and 2, Frank McGarrity.
Barred Plymouth Rock Cockerel—1 and 2, W. S. Stevens; 3, Aubrey Stevenson.
Barred Plymouth Rock Pullet—1, W. S. Stevens; 2, Aubrey Stevenson; 3, John Goode, Calais, Me.
Plymouth Rock White Cockerel—1, E. B. Greenlaw.
Plymouth Rock, White Pullet—1, E. B. Greenlaw.
Plymouth Rocks Buff Cockerel—1 and 2, Ernest Klein; 3, Gustav Klein.
Plymouth Rocks Buff Pullet—1, Gustav Klein; 2 and 3, Ernest Klein.
Plymouth Rocks Partridge Cockerel—1, Ernest Klein; 2, Gustav Klein.
Rhode Island Reds, S. C. Pullet—1, 2 and 3, Aubrey Stevenson.
Wyandottes Silver Laced Cockerel—1 and 2, John Hanson, Calais, Me.; 3, Gustav Klein.
Wyandottes, Silver Laced Pullet—1 and 2, Ernest Klein; 3, John Hanson.
Wyandottes, White Cockerel—1, 2 and 3, C. H. Maxwell, St. Stephen.
Wyandottes, White Pullet—1, C. H. Maxwell.

Breeding Pens, Adult Birds

Brahmas, Light—1, Clarence McCarty, Calais, Me.; 2, Parker Grimmer, St. Stephen.
Leghorns, White S. C.—1, Thomas Vanstone.
Leghorns, Brown S. C.—1, Manzer Moffatt.
Orpingtons, Buff—1, A. C. McCready.
Rhode Island Reds, S. C.—3, Howard Dinsmore, St. Stephen.
Wyandottes, Silver Laced—1, Ernest Klein.
Wyandottes, White—1, C. H. Maxwell.
Wyandottes, Columbian—1, Ernest Klein.

Breeding Pens, Chicks

Brahmas, Light—1 and 2, Frank McGarrity.
Leghorns, White S. C.—1, Thomas Vanstone.
Leghorns, Brown S. C.—1, Cecil Johnson.
Leghorns, Brown Rose Comb—1, Ernest Klein.
Orpingtons, White—1, Mrs. Arthur Livingston, Moore's Mills.
Wyandottes, Silver Laced—1, Gustav Klein; 2, Ernest Klein.
Wyandottes, White—1, 2, C. H. Maxwell.

Mating Pens

Barred Plymouth Rocks, mated to produce cockerels—1, John Goode.

Barred Plymouth Rocks, mated to produce pullets—1, Aubrey Stevenson.

Mating Pens, Chicks

Barred Plymouth Rocks, mated to produce pullets—1, John Goode; 3. Will Finkell, St. Stephen.

HONEY and APAIRY SUPPLIES

Comb Honey in sections—1, Gerald Todd, Milltown, N. B.

Best Liquid Extracted (Light)—1, Gerald Todd; 2, Allie Wilson, St. Stephen.

Best Liquid Extracted (Dark)—1, Allie Wilson.

Best Granulated Honey in glass—1, Gerald Todd; 2, Allie Wilson.

Best display honey prepared for market—1, Gerald Todd; 2, Allie Wilson.

Purest and best Beeswax—1, Walter Howland, Moore's Mills; 2, Allie Wilson.

Best assortment Apiarian supplies—1, Allie Wilson.

Largest and best display of honey bearing plants—1, Allie Wilson; 2, Gerald Todd; 3, F. Holmes Maxwell, St. Stephen.

Bees

Best colony of Italian Bees in observation hive—1, Allie Wilson; 2, Gerald Todd.

Best colony of black bees in observation hive—1, Gerald Todd; 2, Allie Wilson.

L. T. FLOYD, Judge.

HORTICULTURE

Best collection Apples—1, W. C. Arnold, St. Stephen; 2, Frank Scott, St. Stephen; 3, W. F. McGibbon, Moore's Mills.

Sweepstakes

Most artistic and comprehensive exhibit of fruit grown on any one farm in Charlotte Co., in natural and preserved state—1, Frank Scott; 2, Mrs. Geo. Young, Oak Bay.

DAIRY

Butter, tub or crock—1, Ella Lindsay, Tower Hill, 94.9; 2, Miss Alice Nixon, Waweig, 93.3; 3, H. Freeman Lever, Rollingdam, 92.9; 4, Arthur Claxton, Oak Bay, 92.5; 5, W. E. MacCarlie, Oak Bay, 91.4.

Printed or fancy package—1, Arthur Claxton, Oak Bay, 96.6; 2, H. Freeman Lever, 95.5; 3, Mrs. Leonard Jackson, St. Stephen, 95.2; 4, Ella Lindsay, 94.8; 5, Mrs. A. T. Reed, Rollingdam, 94.7; 6, W. E. MacCarlie, 94.5; 7, Miss Alice M. Nixon, 94.4; 8, Samuel Bamford, Little Ridge, 93.7.

Butter in granulated form—1, Samuel Bamford; 2, H. Freeman Lever; 3, Mrs. Eva Nicoll, Calais, Maine.

H. W. COLEMAN, Judge.

Best collection of Grain grown in Charlotte County—1, W. Simpson, Waweig.

Best collection of grains in the straw—1, W. Simpson; 2, Hampden Gilmore, Bonny River.

Best collection of potatoes—1, Frank Scott, St. Stephen; 2, I. R. Sprague, Princeton, Me.; 3, Geo. H. Voutt, St. Stephen.

Best collection Garden Vegetables—1, Eliza McBride, St. Stephen; 2, Wallace Sullivan, St. Stephen; 3, W. F. McGibbon, Moore's Mills.

Best collection Herbs—1, W. F. McGibbon; 2, Geo. H. Voutt; 3, Charles Voutt, St. Stephen.

Largest Pumpkin—1, Allie Wilson, St. Stephen, 109 lbs.

ST. JOHN VALLEY EXHIBITION

Beautiful for situation and cinveniently arrranged in every detail is the new exhibition plant at Cornhill's Island of the Woodstock Agricultural Society, which held its first exhibition in its new home on Sept. 9th to 12th. The Woodstock Agricultural Society membership comprise the majority of the most progressive business men of the town—men who have a vision of the possibilities of Agriculture in their County and who are at all times willing to do what they can to encourage the industry that lies at the very foundation of the prosperity of their town.

For a number of years they have been planning the erection of an exhibition plant on the island formed where the St. John River for a space divides its waters opposite their thriving town. The island consists of a porous, sandy soil that dries quickly after a rain storm and is fringed with magnificent trees of the principal varieties found in our New Brunswick forests. The island throughout is a natural park whose beauties the citizens of Woodstock, thanks to the generosity of the Cornhill Estate, are able to enjoy—recreation, athletic, picnic and exhibition grounds combined in a manner not excelled in any other part of Canada. The island is reached by a sloping plank driveway from the middle of the main bridge that spans the St. John River at the upper end of the island. The arrangement is such that thousands of cars and teams may enter and leave the grounds and be parked on the island without in any way interfering with the safety or comfort of the army of pedestrians who visit the fair.

Condition brought about by the recent war prevented the Woodstock Agricultural Society from putting their plans sooner into effect. However, on the conclusion of the war the Woodstock men got busy to undertake the carrying out of their plans and despite the head shakers of the worldly wise proceeded with an abounding spirit of optimism to erect one of the finest exhibition plants in Eastern Canada.

They did not proceed in a haphazard way. They consulted specialists in planning, employed a competent thchitect, Henry Post, who has proven his ability nobly and well by the manner in which he has so expeditiously erected the various buildings, fourteen in number. Ten buildings are 140x40; the grand stand is 150x50 and seats 2,000 people with 28 ft. post; the main building is 210x86 with 28 foot posts. There are also 149 box stalls. All building sare on concrete foundations and have cost upwards of $35,000 . With an average of 30 men those buildings were erected in 15 weeks with the exception of the cupola and exterior trimmings of the main building. There is not an unsightly building on the grounds and the live stock building have the place of honor, being so located that the visitor to the fair may visit the various departments of the live stock section with comfort and ease.

The visitor to whom the midway and the horse races has no charms is not compelled to traverse either one of these sections before reaching the agricultural and live stock shows.

The initial show on the new grounds was international in character, being open to exhibitors from Canada and the State of Main. Ontario, Quebec, Maine, Nova Scotia, Prince Edward Island and New Brunswick were present with their herds and flocks. As the exhibition gets better know of the breeders it will be more extensively patronized than it was this year. The fact that Woodstock may be reached by both Canadian National Railways and the Canadian Pacifis Railway will make it a favorite place for the meeting in friendly contest of the Upper and Lower Province and Maine State Breeders.

Whle there was a fair showing of good Shorthorn, Aberdeen, Angus, Holstein, Ayrshire, Guernsey, Jersey and Brown Swiss catle the competition was not very keen in any particular section as will be seen by the list of awards which we publish herewith.

The Percheron classes brought out horses owned by C. E. Allen, of Hartland, Geo. H. Benn, of Hodgen, Me., Warren C. Bull, Woodstock and Chas. Gray, Upped Woodstock.

John O., owned by Mr. Allen, was first in the aged stallion class, followed in second place by Gusham ,owned by Mr. Benn. Readers of Maritime Fairs reports will remember Gusham as a prize winner in former years while in the hands of H. C. Jewett, of Fredericton. There were a number of Percherons were shown that were not awarded prizes by the judge, D. J. Griegg, Corners, P. Q., owing to features that were detrimental to good horse breeding. The most outstanding Clydesdale at the show was Baron Squire, an erstwhile champion of the Maritime Horse Show at Amherst, N. S., while in the hands of McFarland Bros., of Fox Harbor, N. S.

There was a fair competition in driving, general purpose and agricultural horses. The competition was not so keen in the heavy draft class, despite the fact that there are some splendid teams in Carleton County.

Mc ntyre Bros., Sussex, N. B., John Ralston, Truro, N. S., H. W. Rogers, Woodstock, and Clover Nook Stock Farm had the main entries in Ayrshires. McIntyre Bros. aged bull Morton Mains Awarth was champion male and sire of four animals get of one sire as well as first with three of his get. Their Spring Brook Nellie was dam of first prize two progeny of one cow. John Ralston's Eastcourt Primrose led the way with two of his offspring.

Mr. Laird & Son, Kelvin Grove, P. E. I., W. L. Carr, Woodstock, Chas. P. Palmer, Woodstock, A. J. Raymond, Woodstock,, J. H. Millbury, Woodstock, Harry Reid, Woodstock, H. C. Cochrane, Victoria and F. B. Carvell, Woodstock, were exhibitors and prize winners but the majority of the awards went to the well fitted Laird herd. Horne Bros. Rollies had no competition.

Clover Nook Stock Farm, John. W. Purvis, Woodstock, W. H. Lindsay, Woodstock, Earle B. Avery, Woodstock, W. Carr, Warren C. Bull, F. K. Brown, Upper Brighton, exhibited Holsteins. Purvis' two year old champion Korndyke Pietje, a grandson and great grandson of Pontac Korndyke, was first with three of his get. He was also the sire of the best four calves bred by exhibitor and three animals get of one sire.

Clover Nook's Artis Rooker Posch was first with three of her progeny.

J. H. Semple had everything his own way in Jersey class excepting the first prize aged cow and the second prize two year old heifer, which were shown by A. J. Raymond, Woodstock.

Geo. H. Benn, Sodgen, Maine, had a clean sweep in Guernseys with a herd that would stand a fair amount of competition.

W. A. Jolly, Waterloo, Que., and Ralph H. Libby, Stanstead, Que., divided honors in the Brown Swiss classes. The competition in both beef and dairy grades was not at all keen.

A. R. Ness, of McDonald's College, P. Q., placed the awards in all cattle classes.

Poultry

Fredericton and Woodstock poultry men vied with each other in the poultry classes. Geo. Wilson, of the Dominion Poultry Division, placed the awards.

Sheep

There was a good showing of sheep. John Ralston, of Truro, and D. G. Purvis, of Woodstock, showed Leicesters. J. M. Laird and Geo. Boswell, of Prince Edward Island, and Clover Nook Stock Farm and Ed. Barrett showed Oxfords. There was battle royal in the Shropshire classes between Geo. Boswell's flock and that of A. Ayre, Hampton, Ont., with a few individuals shown by Clover Nook Stock Farm. Chas. Nunn and Lorne Nunn of Prince Edward had two splendid Hampshire flocks.

A .Ayre had nearly everything his own way in the Cheviot class.

Geo. Boswell, A. Ayre and Clover Nook aFrm locked horne in the Dorset class.

Horne Bros., of Winsloe, P.E.I., had some nice Suffolks.

A. E. Raymond, of Woodstock, and R C. Fishe, of Florenceville placed the awards.

Swine

Swine made a splendid showing at Woodstock. Messrs. Raymond and Fishe placed the awards. Shaw Bros. of Hartland and J. R .Semper, Truro, exhibited their splendid Berkshires. Clover Nook had a walk over in Tamworths. Ralph Libby showed some nice Poland Chinas. The White Chester and Yorkshire classes were comparatively few in numbers.

Glen Campbell and Roland Brooks of the Arthurette Boys Pig Club showed some nice Yorkshires and Chesters and their success should be an inducement to the members of other clubs to bring their stock to the shows.

The Agricultural display in the centre of the main building was spread out over too great an area to look well at first glance but the oftener one viewed the display the better it looked. There was a nice display of fruit A. C. Gorham, B.S.A., Sussex, placed the awards.

The Dominion Experimental Farm and the Entomological Branch had booths in the building where their representatives were kept busy talking to the many farmers who called on them for information There was no busier man in the aggregation than Geo. E. Sanders, the spraying expert, who showed the farmers how they can reduce their bills for spraying materials by the use of cheaper combinations which he has found do the work cheaply and efficiently.

The Woodstock Vocational School had a display of the products of their garden and of the work done in the manual training and domestic departments that was very creditable to the school. The ladies domestic and fancy work was of high standard workmanship.

Woodstock has an exhibition plant second to non and the farmers of the surrounding district should join Society No. 44 and work with the town people to make future exhibits worthy of the magnificent farming community in which it is located.

Woodstock Exhibition Prize Winners

HORSES

Standard Breds

Stallion, 4 years old—1, Earle B. Avery, Woodstock.

tSallion, 3 years old—1 and 2, J. W. Gallagher, Woodstock.

Filly, 4 years old—1, A. J. Saunders, Houlton, Me.; 2 and 3, J. W. Gallagher.

Filly, 2 years old—1, W. H. Lindsay, Woodstock Cor.; 2, A. J. Saunders; 3, Clover Nook Stock Farm.

Filly, 1 year old—1 and 2, A. J. Saunders.

Foal of 1919—1, J. W. Gallagher.

Brood Mare with Foal—1, J. W. Gallagher.

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THE FREDERICTON EXHIBITION

After a lapse of four years in their exhibition activities, Agricultural Society No. 34, Fredericton, N. B., staged its 1919 fair on September 13th to the 20th. Twenty thuosand dollars were hung up for prizes with competition open to Canada and State of Maine.

W. S. Hooper, the genial, efficient secretary-manager of this popular fair in pre-war days, was again at the helm of affairs with several of the most prominent business men of the celestial city as his aides in charge of the various departments of the big show. The characteristic courtesy afforded ehibitors at Fredericton in bygone years—a courtesy that hsa always made the stock man yike to exhibit at Fredericton, was well maintained this year. The weather, although cool and rather lowering at times, throughout the major portion of the show period did not prevent the attendance of thousands of sight-seers who thronged from day to day through the turnstiles and on to the many interesting sections of the fair.

The clanging of the hammers of the workmen, who were putting the finishing touches on the booths in the main building, had not yet ceased to reverberate throughout the arches and corridors when on the evening of the 13th, Hon. J. F. Tweeddale, Minister of Agriculture, arose in his place in one of the side galleries to deliver the official opening address. He voiced his regrets at the inability of His Honor Lieutenant-Governor Pugsley and Hon. W. E. Foster, Premier of the Province, to be present owing to an engagemnt of importance re Valley Railway affairs with the officials of the Canadian National and Canadian Pacific Railways. Following are extractsh from Mr. Tweeddale's address:

Hon. Mr. Tweeddale, in opening the Ehibition, dealt with many of the same subjects that he discussed in his speech at Woodstock last week at the opening of the St. John Valley Fair. He repeated some of the announcements of policy in matters connected with the Agricultural Department's work in New Brunswick, which he had made at that time, and made a plea for production as the only method of reducing the present high cost of living and bringing about a satisfactory readjustment of the trade balance for Canada.

Because of the importance of the occasion, Hon. Mr. Tweeddale had prepared an address, which he read as follows:

"I am pleased to be here tonight, at this the opening of your Exhibition, and, as this is recognized as the Provincial Exhibition this year, it is disapponting that it has not been honored at its opening with an address from His Honor, the Lieutenant-Governor, and the Premier, and appropriate that the Minister presdiing over the Provincial Department of Agriculture be present.

"When we realize the fact that the agricultural products of Canada, according to statistics, have a greater monied value than have the combined products of our three other great natural resources—our forests, fisheries, and mines—the importance of agriculture will be appreciated.

"It seems to have been the decree of Divine Providence, in providing the forest growths and the teeming millions of the fishes of the sea, together with the products of the soil, for the use of man, that man must work and toil before he can avail himself of their benefits, so necessary for his comfort in fact, for the sustenance of his life. We ean see that this was a wise provision, as it compels energy industry, the exercise of our physical as well as mental and inventive powers, giving development to both mind and body, that elevates the human family to a higher standard of civilization than would obtain were these things to be gotten without exertion. But the products of the soil, which go more directly to the sustenance of life, differ from the products of our other natural resources. The minerals and metals, our forest growth, the food obtained from the oceans, already exist but the products of the soil are creative. The wheat and other grains, the corn, vegetables, cultivated fruits, do not exist they are only produced by intelligent cultivation, brought about by bringing into action the chemical qualities of the soil that create vegetable life, which cause a multiplied reproduction, the success of which is dependent upon climatic conditions, a well regulated supply of heat, light and moisture—elements altogether in the control of a benign Providence.

"These facts at once make us realize also how much more directly we are dependent on the farmer for our existence than those engaged in the other industrial pursuits of the country.

"It is not long since farming was looked upon as a menial occupation, but it is now being recognized as a business the success of which requires close and constant application, as well as knowledge gained by experience of how to cultivate the soil and manage the work. And, by reason of the world's demands and requirements for more foodstuffs, the old saying is more than ever true—that he who makes two blades of grass grow where only one grew before is a public benefactor.

"We have just emerged from the most destructive war known to civilization, to which Canada has contributed, both in blood and treasure, according to population, equally, if not greater than any of the Allied forces. The valor of our troops has materially contributed to the victory that has sustained the principles of liberty, justice, freedom, democracy and the constitution under which we live and are governed.

"The Canadian soldiers have assisted in sustaining British institutions and brought honor and glory to themselves and Canada. We see reactionary movements rising up in all of the countries overseas, as well as with our neighbors to the south of us, where life and property are being destroyed, and it is a splendid utterance coming from our returned soldiers' organizations in Canada, that they will not tolerate Bolshevism in this country.

"The great problem now confronting us is, to settle the spirit of unrest. To restore matters to normal conditions will tax the greatest minds of the age. Commissions are being appointed both in Canada and the United States to reduce the high cost of living—a procedure well taken to prevent excessive profits. Along with this,, we wtll next have the great problem of the liquidation of the tremendous war debt that Canada has assumed in the prosecution and as a consequence of the war.

"Both of these great problems are answered by the same remedy, and that is Production. We read in the public press and hear theories enumerated by public men as a remedy for those two great problems. But this should be the slogan of all governments, Imeprial, Federal, Provincial, Municipal and Civic, as well as every loyal citizen—Production, Production, Production.

"I don't think I am pessimistic when I say that at the present time, while money is plentiful, we are living in a period of false prosperity. Money is plentiful and we are glad it is so; we can't afford to stop until we are tided over this period of unrest. We cannot stop; we must carry on. The industrial life of the country must be kept going, even at a loss; but the money in circulation is largely from our mountry's borrowings, being expended in the legitimate expenses of the war and our apparent prosperity is of a kin to a man who has mortgaged his farm, ceases work and spends the proceeds freely, living in the enjoyment of the luxuries that money will buy; his obligation will some day have to be met.

"The most positive evidence of our position is seen in the fact that our money is discounted in the United States. The balance of trade is against us.

"I had a fear that the Americans would put an embargo against our potatoes going into their markets, but a survey of the potato production in the United Stateh has satisfied them that, on acocunt of failure in the large potato growing states, their supply will not be equal to their requirements and, in view of the high cost of living, it would not be wise to shut out our potatoes. The large amount of money coming in from the United States for our potatoes will assist in restoring the balance of trade."

After repeating the announcements as to wheat, sheep and fertilizer policies made at Woodstock, he said:

"'Your Exhibition has through the efficient management of your directors, together with the business methods of your secretary, aready established a reputation as one of the best provincial exhibitions, especially from the standpoint of an agricultural show. St. Stephen has put on a particularly good agricultural show; weather conditions have been against both Woodstock and St. Stephen; Chatham, coming after yours, will, no doubt, have a splendid exhibit, as the stock will go there from here to compete for their prizes.

"You are starting under very favorable prospects of the best weather, and I am sure the success of this first after-the-war provincial exhibition will be the best ever, from every point of view, and the thing we are mose proud of is the war is over and the Union Jack is flying at your masthead.

"I now declare this Exhibition formally open to the public."

The old transportation building, which was destroyed by fire while the buildings and grounds were under the supervision of the military authorities, has been replaced by a commodious new two story concrete-block building which housed on the ground floor the exhibits of dealers in the various popular automobiles that are offered for sale in the province—McLaughlin, Ford, Cole, Maxwell, Chalmers, Chevrolet, Gray Dort, Cadillac, Studebaker and Overland. Here too were the exhibits of the Renfrew Machinery Company — Standard Cream Separators and Engines. The De Laval Separator Company Separators, Gasoline Engines, Milking Machines and Electric Light equipment for farms. International Harvester Company's Manure Spreader and Tractors. Wallace Machine Works, Sussex, Little Giant Threshers and the Phelps Mfg. Company's Electric Light plant and other electrical equipment. The Cleveland Tractor was also there and cleverly manipulated, plowed and harrowed in the infield of the race track as well as hauled the brush harrow over the track between heats.

The second storey of the building housed the poultry show as well as the demonstration booths of the Poultry Division of the New Brunswick Departmen of Agriculture, the Dominion Poultry Branch, the Dominion Live Stock Division and the New Brunswick Forestry Division, all of which had features that appealed to the public.

The elimination of the poultry show from the annex of the main building left a splendid space for the display of the products of the field, farm and garden. This display, spread out over a wide area, did not appear as extensive as in other years. The competition was, however, quite keen and the quality exceptionally good.

The horticultural section of the show contained a good display of the abundance of fruit that the province boasts this year. To one side of this section was a bank of boxed apples of appetizing appearance, tastefully arranged around a circular bed of Golden Russet apples with a shield shaped Union Jack in the centre. Artistically spaced near the outer circle were placed some delicious looking crab apples to form the words FOR SERVICE AT THE FRONT. This display was deservingly admired and reflected a great deal of credit on Mr. Turney, the Provincial Horticulturist and his staff.

The products of the Apiary and accessories necessary for the management of bees in the modern way was displayed by L. T. Floyd, the Provincial Apiculturist, who was constantly on hand to furnish information to the throngs of interested visitors. The work Mr. Floyd is doing among the bee keepers of the province is bearing good results so that thousands of pounds of New Brunswick made honey will be marketed this year by men and women who have only recently taken up this industry under his guidance.

Every foot of available space in the main building was used and the tastefully arranged booths with their brilliant lights anl artistic signs made a particularly pleasing appearance.

The midway was a veritable hive of amusement, interest and fakirism. Objectionable features were eliminated as much as possible. It may be that a few wro tried to beat the fakirs at their own game, got stung occasionally, but then that's the public's lookout. The adage that "A fool and his money are easily parted," is as true in 1919 as it was in the years of long ago.

The exhibit of dairy products was quite extensive and of excellent quality.

The soldier's vocational school exhibit in the gallery of the main building was a veritable object lesson, illustrating the splendid work that is being done in the way of retaining the sickly and badly wounded in the crafts that will help them face the adverse conditions under which so many will ultimately have to face the problem of makiny a living for themselves and their dependents. Under the direction of skilled instructors the soldier boys are accomplishing wonderfully and cleverly wrought pieces of workmanship.

The Live Stock

The horse classes at Fredericton were not so keenly contested as they were in pre-war times. This is particularly true in regard to the light horse classes which have, owing to popularity of the automobile, come to the vicinity of the good-bye point.

In the Sandard Bred class for aged stallions H. C. Jewett's horses came in for first and second places with Mr. H. G. Kitchen's horse in third place. Hugh O'Neill, of Fredericton, showed a nice yearling stallion and several nice filllies.

Snowball's aged stallion alone represented the Hackney breed.

Roadsters and carriage horses were few in numbers and nothing much to brag about in point of quality.

Agricultural, general purpose and draft horses were also few in number but contained several horses of considerable merit.

In Cyldesdale Stallions over four years there were four entries, the placing being the same as at St. Ste-

phen, Snowball's Baron's Own at the head of the list with Jewett's Dr. McCoy in second place and Kelvin's Pride coming next. Clover Nook Stock Farm showed a nice young stallion of good quality, the get of Paron Squire. In the female sections Snowball fillies led the way.

J. R. Jewett, E. Allen, Alphonse Kelly, S. Illingworth and several others whose names appear in the list of prize winners were, next to the breeders already mentioned, the principal contributors to the horse show.

Cattle

The big event in the beef cattle show was the Shorthorn class, where R. A. Snowball's and J. M. Laird's herds clashed. These were the two principal contestants. J. R. Jewett had several young animals of good quality, but not in the show shape of the individuals from the other herds.

In aged bulls the Lairds' led the way with White Gloucester, a massive white bull of missie strain, a recent acquisition to head the Evergreen farm herd. Stately Monarch, an erstwhile unbeaten champion as head of the Snowball herd and formerly at the head of the Laird and Griffin herds, went down to second place. It was tit for tat throughout the remaining sections of the class as will be seen by the list of awards. The female classes, according to Judge John Guardhouse, were a good, useful aggregation that would stand a lot of competition at some of the larger shows.

Horne Bros., of Prince Edward Island met no competition with their Polled Angus cattle and had a walk over with their splendidly fitted herd.

Ayrshire cattle were shown by McIntyre Bros., John Retson, Clover Nook Stock Farm and Mr. Paisley. McIntyre Bros and Retson captured the major portion of the money with their well fitted herds.

In Holsteins Dickie Bros., Harding Bros. and Clover Nook Stock Farm competed for the honors, the major jortion of the choicest plums going to to the Truro and Welsford herds.

Jerseys were shown by J. R. Semper & Son, of Truro, who had everything practically all their own way.

Libby herds of Brown Swiss cattle from the province of Quebec that showed at Woodstock during the previous week were also shown in the capital city fair.

Sheep

The keenest competition in any section of the show was on in the sheep classes, where New Brunswick, Nova Scotia, Prince Edward Island, Quebec and Ontario flocks were out in the pink of condition. The competition was particularly keen in the Shrop, Oxford, Horned Dorset and Cheviot classes, where there was a fight to the finish in nearly every section. No one could stand by the ring while without experiencing a high degree of pleasure from the well fitted, typical individual pairs and quartettes that were led out to be judged. When it comes to selecting, fitting and showing sheep one must take off his hat to some of our Maritime Province breeders who have in their flocks as good individuals as one can find anywhere in Canada.

Swine

The swine show was particularly good. One of the main features of the exceptionally good showing made by the young boys who are members of the Boys Pig Clubs conducted under the auspices of the New Brunswick Department of Agriculture. In the Yorkshire and Chester classes the boys made the older exhibitors step lively, capturing the coveted red and blue ribbons in the various sections in which they had entries..

Waldo Walsh, the Assistant Live Stock Superintendent for the province who has been putting forth his best efforts among the boys during the past year, was wearing the smile that is so characteristic of him, when at the conclusion of the judging his boys were found in the first ranks.

There was a lively contest in the Berkshire class between J. B. Semple's herd and that of Shaw Bros., of Victoria, N. B.

The poultry show was somewhat slimmer than usual, the breeders claim the revised prize list in their classes do not give sufficient encouragement to make large exhibits.

The modern brooder house and the colony house shown by the New Brunswick Department of Agriculture with their equipment and tit bits of advice in poultry lores were appreciatingly noted by the visitors.

The judges of the various classes were as follows:

Light Horses.—Alex. Ness, McDonald College, Quebec.

Heavy Horses.—Adam Scharf, Cummings Bridge, Ont.

Beef Cattle.—John Guardhouse, Weston, Ontario.

Dairy Cattle.—Wm. Ballantyne, Stratford, Ontario.

Swine.—P. J. McEwen, Wyoming, Ontario

Sheep.—John Guardhouse, Weston, Ontario.

Poultry.—John Clark, Cainsville, Ontario.

Honey.—L. T. Floyd, Sussex.

Agricultural Products.—S. J. Moore, Truro, N. S.

Dairy Products.—Harvey Mitchell, Keswick; James Burgess, Ottawa and W. A. McKay, Truro, N. S.

Fruit.—A .G. Turney, Fredericton.

Live stock being the king pin of successful agriculture in Maritime Canada we look forward to rapid development along this line. Good stock of high individual and ancestral merit well advertised, may be sold at remunerative prices. Exhibitions afford a splendid advertising medium and it behooves our breeders to get busy and prepare for future events at Fredericton.

PRIZE WINNERS AT FREDERICTON EXHIBITION

STANDARD BRED HORSES

Stallion 4 years old.—1st, H. C. Jewett, Fredericton 2nd, H. C. Jewett; 3rd, H. G. Kitchen, Fredericton.

Stallion 1 year old.—1st, H. G. O'Neill, Fredericton.

Filly 4 years old.—1st, Hugh O'Neill

Filly 3 years old.—1st, Hugh O'Neill

Filly 2 years old.—1st, Hugh O'Neill 2nd, Clovernook Stock Farm, Hartland, N. B.

Foal of 1919.—1st, H. G. Kitchen.

Brood Mare with Foal.—1st, H. G. Kitchen.

Hackneys

Stallion 4 years old.—1st, R. A. Snowball, Chatham, N. B.

Heavy Draft Horses

Brood aMre, any age.—1st, Elwood Allan; 2nd, John R. Jewett, Island View, N. B.

Filly or Gelding 4 years old.—1st, Alphonso Kelly, Fredericton.

Filly or Gelding 3 years old.—1st, John R. Jewett.

Foal of 1919.—1st, John R. Jewett; 2nd, Elwood Allan; 3rd, Emery Ketch.

Clydesdales

Stallion 4 years old.—1st and 3rd, R. A. Snowball; 2nd, H. C. Jewett.

Stallion 3 years old.—1st Clover Noop Stock Farm.

Filly 4 years old.—1st, R. A. Snowball.

Clydesdale oHrses—Special

Stallion.—st, R. A. Snowball.

Female.—1st, R. A. Snowball.

Single Grade Mare—1st, R.A. Snowball.

Specials

Foals of 1919, the get of H. C. Jewett's Percheron stallion Hussard.—1st, Emery Ketch; 2nd, Bertrand Goodspped; 3rd, W. Illingworth.

Foals of 1919, gat of Cyldesdale Stallion, Day Dream.—1st, John R. Jewett, 2nd, Alphonso Kelly.

General Purpose Horse

Mare or Gelding, any age.—1st, John Jackson, St .John; 2nd, Bertrand Goodspeed.

Matched Team in Harness.—1st, John R. Jewett; 2nd, W. Illingworth.

Agricultural Horses

Brood Mare.—1st, Hedley Aiken; 2nd, Alphonso Kelly; 3rd, Emery Ketch.

Filly or Gelding, 4 years old.—1st, R. A. Snowball; pnd, Alphonso Kelly; 3rd, W. A. McVey.

Filly or Gelding, 1 year old.—1st, R. A. Snowball; 2nd, Alphonso Kelly.

Foal of 1919.—1st. Alphonso Kelly.

Span (Geldings or aMres).—1st, Alphonso Kelly.

Horses

Saddle Horse ridden by a Gentleman.—1st, R. W. Carson, St. John; 2nd, John Jackson, St. John.

Saddle Horse ridden by a Lady.—1st, Miss Eileen Keenan, Fredericton; 2nd, R. W. Carson.

Carriage Horses

Carriage Torse.—1st, H. C. Jewett; 2nd, H. G. Kitchen; 3rd, R. W. Carson.

Matched Pair.—3rd, ohn R. Jewett.

Horse driven by Lady.—1st, R. W. Carson; 2nd, Mrs. L. G. Richards; 3rd, Mrs. Lee Haining.

Roadsters

1st, Hugh O'Neill; 2nd, Nehemiah Keirstead; 3rd, Miss Eileen Keenan.

Driven by a Lady.—1st, Hugh O'Neill; 2nd, Miss Eileen Keenan.

Pony in Single Harness.—1st, W. D. Gunter, Fredericton.

CATTLE

Shorthorns

Bull 3 years old and upwards.—1st, J. M. Laird & Sons, Kelvin Grove, P. E. I.; 2nd, R. A. Snowball; 3rd, John R. Jewett.

Bull, Senior.—1st, Burpee & Smith, Nashwaaksis, N. B.

Bull, uJnior.—1st, J. M. Laird & Sons; 2nd, R. A. Snowball; 3rd, John R. Jewett; 4th, John R. Jewett.

Bull Calf, over 6 months.—1st, J. M. Laird & Sons; 2nd, R. A. Snowball.

Bull Calf, under 6 months.—1st, R. A. Snowball; 2nd, R. A. Snowball; 3rd, J. M. Laird & Sons.

Cow, 4 years old and upwards.—1st, R. A. Snowball; 2nd, J. M. Laird & Sons; 3rd, R. A. Snowball; 4th, J. M. Laird & Sons.

Cow, 3 years old.—1st, J. M. Laird & Sons; 2nd, R. A. Snowball.

Cow or Heifer, 2 years—1st, R. A. Snowball; 2nd, J M. Laird & Sons.

Heifer, Senior Yearling.—1st, J. M. Laird & Sons; 2nd, R. A. Snowball.

Heifer, Junior Yearling.—1st, J. M. Laird & Sons; 2nd, R. A. Snowball.

Heifer and Calf, under 12 months and over 6.—1st, R. A. Snowball; 2nd, J. M. Laird & Sons; 3rd, J. M. Laird & Sons.

Heifer Calf, under 6 months.—1st, J. M. Laird & Sons; 2nd, R. A. Snowball; 3rd, R. A. Snowball.

Aged Herd.—1st, J. M. Laird & Sons; 2nd, R. A. Snowball.

Breeder's Young Herd.—1st. J. M. Laird & Sons;2nd, R. A. Snowball.

Bull and 3 of his get.—1st, John R. Jewett.

Cow and 2 of her get.—1st, J. M. Laird & Sons; 2nd, R. A. Snowball; 3rd, J. M. Laird & Sons.

Female, any age.—Diploma, R. A. Snowball.

Polled Angus Cattle

Bull, 3 years old.—1st, Horne Bros., Winsloe Station, P.E.I.

Bull, 2 years old.—1st. Horne Bros.

Bull calf, over 6 mos.—1st, Horne Bros.

Bull Calf, under 6 mos.—1st, Horne Bros.; 2nd, Horne Bros.

Cow, 4 years old and upwards.—1st, Horne Bros.; 2nd, Horne Bros.

Cow, 3 years old.—1st, Horne Bros.; 2nd, Horne Bros.

Cow or Heifer, 2 years old.—1st, Horne Bros.; 2nd, Horne Bros.

Heifer, Senior Yearling.—1st, Horne Bros.

Heifer, Junior Yearling.—1st, Horne Bros.; 2nd, Horne Bros.

Heifer Calf, senior.—1st, Horne Bros.

Heifer Calf, under 6 months.—1st, Horen Bros.

Aged Herd.—1st, Horne Bros.

Breeders' Young Herd.—1st, Horne Bros.

Bull and 3 of his get.—Diploma, Horne Bros.

Cow and 3 of her offspring.—Diploma, Horne Bros.

Cow and 2 of her ogspring.—Diploma, Horne Bros.

Bull, any age.—Diploma, Horne Bros.

Female, any age.—Diploma, Horne Bros.

Beef Grades

Cow, 4 years old.—1st, R. A. Snowball; 2nd, J. M. Laird & Sons.

Cow, 2 years old.—1st, J. M. Laird & Sons.

Heifer, 1 year old.—1st. J. M. Laird & Sons.

Fat Cattle

Fat Cow or Heifer.—1st, J. M. Laird & Sons.

Pair Fat Cattle.—1st, J. M. Laird & Sons.

Ayrshires

Bull, 3 years old and upwards.—1st, McIntyre Bros., Sussex.

Bull, 2 years old.—1st, McIntyre Bros.;2nd, Clovernook Stock Farm, Hartland, N. B.

Bul, senior, 18 mos. and under 24.—1st, McIntyre Bros.

Bull, junior, 12 mos. and under 18 mos.—1st, McIntyre Bros; 2nd, John Retson, Truro, N. S.

Bull Calf, over 6 months.—1st, John Retson; 2nd, McIntyre Bros.; 3rd, Jas. K. Paisley, Beaver Brook, N. B.

Bull Calf, under 6 months.—1st, McIntyre Bros.; 2nd, James K. Paisley.

Cow, 4 years old and upwards.—1st, McIntyre Bros.; 2nd, John Retson; 3rd, McIntyre Bros.

Dry Cow, 4 years old and upwards.—1st, McIntyre Bros.; 2nd, John Retson; 3rd, McIntyre Bros.

Cow, 3 years old.—1st, McIntyre Bros.; 2nd, McIntyre Bros.; 3rd, Jas. K. Paisley.

Dry Cow, 3 years old.—1st.—McIntyre Bros.; 2nd, McIntyre Bros.

Cow, 2 years old.—1st, John Retson; 2nd, McIntyre Bros.; 3rd, McIntyre Bros.

Heifer, senior yearling.—1st, McIntyre Bros.; 2nd, McIntyre Bros; 3rd, James K. Paisley.

Heifer, junior yearling.—1st, McIntyre Bros.; 2nd, McIntyre Bros.; 3rd, James K. Paisley.

Heifer Calf, senior.—1st, John Retson; 2nd. McIntyre Bros.; 3rd, James K. Paisley; 4th, McIntyre Bros.

Heifer Calf, junior.—1st, McIntyre Bros.; 2nd, McIntyre Bros.; 3rd, Jas. K. Paisley.

Aged Herd.—1st, McIntyre Bros.; 2nd, McIntyre Bros.; 3rd, John Retson

Breeders' oYung Herd.—1st, McIntyre Bros.; 2nd. McIntyre Bros.; 3rd, James K. Paisley.

Four animals, get of one sire.—1st, McIntyre Bros.; 2nd, McIntyre Bros.

Two animals, offspring of 1 cow.—1st, John Retson; 2nd, McIntyre Bros.—Bull and 3 of his get.—1st, McIntyre Bros.

Cow and 2 of her offspring.—1st, John Retson; 2nd, McIntyre Bros.; 3rd, McIntyre Bros.

Holsteins

Bull, 3 years old.—1st, Dickie Bros., Truro, N S..; 2nd, Harding Bros., Welsford, N. B.

Bull, 2 years old.—1st, Clovernook Stock Farm; 2nd, W. Illingworth, Upper Kingsclear; 3rd, Burpee & Smith, Nashwaaksis, N. B.

Bull, junior.—1st, Harding Bros.; 2nd, John Powis, Upper Kingclear; 3rd, Clovernook Stock Farm.

Bull Calf.—1st, Dickie Bros.; 2nd, Harding Bros.; 3rd, Dickie Bros.

Bull Calf, under 6 months.—1st, Dickie Bros.; 2nd, Harding Bros.; 3rd, Albert Hanson, Fredericton.

Cow, 4 years old.—1st, Dickie Bros.; 2nd, Dickie Bros.; 3rd, Clovernook Stock Farm; 4th, Harding Bros.

(Continued on page 876)

ST. JOHN VALLEY EXHIBITION

(Continued from page 871)

Stallion, any age—1, J. W. Gallagher.

Mare, any age—1, J. W. Gallagher.

Stallion and three of his get—1, J. W. Gallagher.

Clydesdale Horses

Stallion, 4 years old—1, L. B. McElhinney, Woodstock.

Stallion, 2 years old—1, Clover Nook Stock Farm.

Stallion, 1 year old—1, Clover Nook Stock Farm; 2, Harry Reid, Woodstock.

Filly, 4 years old—1, Earle B. Avery; 2 and 3, Clover Nook Stock Farm.

Filly, 2 years old—1, Clover Nook Stock Farm.

Champion Mare—Earl B. Avery.

Stallion, and three of his get—L. B. McElhinney.

Percherons

Stallion, 4 years old—1, C. E. Allen, Hartland; 2, Geo. H. Benn, Hodgen, Me.

Stallion, 3 years old—1, Geo. H. Benn.

Stallion, 2 years old—1, Warren C. Bull, Woodstock.

Stallion, 1 year old—1, Geo. H. Benn.

Mare, 4 years old—1, Chas. Gray, Upper Woodstock.

Mare, 2 years old—1, Chas. Gray.

Driving Horses

Mare or Gelding—1, J. J. Hale, Grafton; 2, Chas. P. Palmer, Woodstock; 3, W. H. Lindsay.

General Purpose Horses

Mare or Gelding, any age, shown in harness—1, Chas. P. Palmer; 2, W. H. Lindsay; 3, Warren C. Bull.

Matched Team, shown in harness—1, Howard Palmer, Woodstock.

Agricultural Horses

Brood Mare with Foal—1, L. D. McElhinney; 2, Chas. Monteith, Northampton, N. B.; 3, Carey Dickinson, Simmonds.

Filly or Gelding, 4 years old—1, Carey Dickinson; 2, Warren Bull.

Filly or Gelding, 3 years old—1, Warren Bull.

Filly or Gelding, 2 years old—1, Judson Rideout, Hartland; 2, W. H. Lindsay; 3, Chas. P. Palmer.

Filly, 1 year old—1, Chas. P. Palmer & Sons; 2, Judson Rideout, Hartland.

Foal of 1919—1, Chas. Monteith; 2, Carey Dickinson; 3, Benj. Wilson, Hartford, N. B.

Matched Team in harness—1, Edmund Dickinson, Debec Jct.; 2, Howard Palmer; 3, W. H. Rogers, Woodstock.

Heavy Draft Horses

Brood Mare with foal—1, Chas. Monteith.

Filly or Gelding, 4 years old—1, Chas. P. Palmer & Son; 2, Warren Bull.

Filly or Gelding, 3 years old—1, Warren Bull.

Filly or Gelding, 2 years old—1, W. H. Lindsay.

Foal of 1919—1, Chas. Montieth.

Matched Team—1, Edmund Dickinson, Debec; 2, W. C. Hall, Grafton.

CATTLE

Shorthorns

Bull, 3 years old—1, J. M. Laird & Son, Kelvin Grove, P. E. I.; 2, W. L. Carr, Woodstock.

Bull, 2 years old—1, Chas. P. Palmer, Woodstock; 2, A. J. Raymond, Woodstock.

Bull, junior yearling—1, J. M. Laird & Son; 2, J. H. Millbury, Woodstock; 3, Harry Reid, Woodstock.

Bull, senior calf—1, J. M. Laird & Son; 2, H. C. Cochrane, Victoria, N. B.; 3, F. M. Slipp, Woodstock.

Bull, junior calf—1, J. M. Laird & Son.

Cow, 4 years old and upwards—1 and 2, J. M. Laird & Son; 3, F. B. Carvell, Woodstock.

Cow, 3 years old—1, J. M. Laird & Son; 2 and 3, F. B. Carvell.

Cow or Heifer, 2 years old—1, J. M. Laird & Son; 2 and 3, F. M. Slipp.

Heifer, senior yearling—1, J. M. Laird & Son; 2, Chas. P. Palmer & Sons; 3, F. B. Carvell.

Heifer, junior yearling—1, J. M. Laird & Son.

Heifer, senior calf—1 and 2, J. M. Laird & Son.

Heifer, junior calf—1, J. M. Laird & Son; 2, F. B. Carvell.

Aged herd—1, J. M. Laird & Son.

Breeders' Young Herd—1, J. M. Laird & Son.

Cow and two of her offspring—1 and 2, J. M. Laird & Son; 3, Charles Palmer & Son.

Bull, any age—1, J. M. Laird & Son.

Female, any age—1, J. M. Laird & Son.

Polled Angus

Bull, 3 years old and upwards—1, Horne Bros., Winsloe Sta., P. E. I.

Bull, junior yearling—1, Horne Bros.

Bull, senior calf—1, Horne Bros.

Bull, junior calf—1 and 2, Horne Bros.

Cow, 4 years old—1 and 2, Horne Bros.

Cow, 3 years old—1 and 2, Horne Bros.

Cow or Heifer, 2 years old—1 and 2, Horne Bros.

Heifer, senior yearling—Horne Bros.

Heifer, junior yearling—1 and 2, Horne Bros.

Heifer, senior calf—Horne Bros.

Heifer, junior calf—Horne Bros

Aged Herd—Horne Bros.

Breeders' Young Herd—Horne Bros.

Bull and three of his get—1, Horne Bros.

Cow and two of her offspring—1. Horne Bros.

Bull, any age—1, Horne Bros.

Female, any age—1, Horne Bros.

Ayrshires

Bull, 3 years old and upwards—1, McIntyre Bros., Sussex, N. B.

Bull, 2 years old—1, McIntyre Bros.; 2, Clover Nook Farm, Hartland.

Bull, senior yearling—1, McIntyre Bros.

Bull, junior yearling—1, McIntyre Bros.; 2, John Retson, Truro, N. S.; 3, H. W. Rogers, Woodstock.

Bull, senior calf—1, John Retson; 2, McIntyre Bros.

Bull, junior calf—1, McIntyre Bros.

Cow, 4 years old—1, McIntyre Bros.; 2, John Retson; 3, Clover Nook Stock Farm.

Dry Cow, 4 years old—1 and 3, McIntyre Bros.; 2 and 4, John Retson.

Cow, 3 years old—1 and 2, McIntyre Bros.; 3, Clover Nook Stock Farm.

Dry Cow, 3 years old—1, McIntyre Bros.

Cow, 2 years old—1, John Retson; 2 and 3, McIntyre Bros.

Heifer, senior yearling—1 and 2, McIntyre Bros.

Heifer, junior yearling—1 and 2, McIntyre Bros.

Heifer, senior calf—1 and 2, McIntyre Bros.; 3, Clover Nook Stock Farm.

Heifer, junior calf—1 and 2, McIntyre Bros.; 3, Clover Nook Stock Farm.

Aged herd—1 and 3—McIntyre Bros.; 2, John Retson.

Breeders' young herd—1 and 2, McIntyre Bros.

Four animals get of one sire—1, 2 and 3, McIntyre Bros.

Two animals, progeny of one cow—1 and 3, McIntyre Bros.; 2, John Retson .

Bull and 3 of his get—1, McIntyre Bros.

Cow and 2 of her offspring—1, John Retson; 2, McIntyre Bros.

Holsteins

Bull, 2 years old—1, Clover Nook Stock Farm; 2, John W. Purvis, Woodstock; 3, W. H. Lindsay, Woodstock.

Bull, junior yearling—1, Earle B. Avery, Woodstock; 2, Clover Nook Stock Farm; 3, W. Carr.

Bull, senior calf—1, Clover Nook Stock Farm.

Bull, junior calf—1, John W. Purvis.

Cow, 4 years old—1 and 4, Clover Nook Stock Farm; 2, Earle B. Avery; 3, Warren C. Bull.

Dry Cow, 4 years old—1, Warren C. Bull; 2, Clover Nook Stock Farm.

Cow, 2 years old—1, F. K. Brown, Upper Brighton; 2, W. H. Lindsay.

Heifer, senior yearling—1, Clover Nook Stock Farm; 2 and 3, W. C. Hall.

Heifer, junior yearling—1, Clover Nook Stock Farm; 2, Warren C. Bull; 3, F. K. Brown.

Heifer, senior calf—1, Clover Nook Stock Farm; 2 and 3, Warren C. Bull.

Heifer, senior calf—1, Clover Nook Stock Farm; 2 and 3, Warren C. Bull.

Heifer, junior calf—1, W. H. Lindsay; 2 and 3, John W. Purvis. '

Aged herd—1, Clover Nook Stock Farm.

Breeders' young herd—1, Clover Nook Stock Farm; 4, Warren C. Bull.

Four calves, bred by exhibitor—1, John W. Purvis; 2, Clover Nook Stock Farm.

Three animals, get of one sire—1, John W. Purves; 2, Clover Nook Stock Farm.

Three animals, progeny of cow—1, Clover Nook Stock Farm.

Bull and three of his get—1, John W. Purves.

Jerseys

Bull, 3 years old—1, J. R. Semple & Son, Truro, N. S.

Bull, junior calf—1, J. R. Semple & Son.

Cow, 4 years old—1, A. J. Raymond.

Cow, 2 years old—1, J. R. Semple & Son; 2, A. J. Raymond.

Heifer, senior yearling—1, J. R. Semple & Son.

Heifer, senior calf—1, 2 and 3, J. R. Semple & Son.

Breeders' young herd—1, J. R. Semple & Son.

Bull and three of his get—1, J. Semple & Son.

Guernseys

Bull, 3 years old—1, Geo. H. Benn, Hodgden, Me.

Bull, senior calf—1, Geo. H. Benn.

Cow, 4 years old—1, Geo. H. Benn.

Dry Cow, 4 years old—1, Geo. H. Benn.

Cow, 3 years old—1, Geo. H. Benn.

Dry Cow, 3 years old—1, Geo. H. Benn.

Cow, 2 years old—1, 2 and 3, Geo. H. Benn.

Heifer, senior yearling—1, Geo. H. Benn.

Heifer, junior yearling—1, Geo. H. Benn.

Heifer, senior calf—1 and 2, Geo. H. Benn.

Heifer, junior calf—1, Geo. H. Benn.

Aged herd—1, Geo. H. Benn.

Breeders' young herd—1, Geo. H. Benn.

Bull and 3 of his get—1, Geo. H. Benn.

Cow and two of her offspring—1, Geo. H. Benn.

Brown Swiss

Bull, 3 years old—1, Ralph H. Libby, Stanstead, Que.; 2 and 3, W. A. Jolley, Waterloo, Que.

Bull, 2 years old—1, Ralph H. Libby.

Bull, senior yearling—1, W. A. Jolley; 2, Ralph H. Libby.

Bull, junior yearling—1, W. A. Jolley.

Bull, senior calf—1, W. A. Jolley; 2, Ralph H. Libby.

Bull, junior calf—1, W. A. Jolley; 2, Ralph H. Libbey.

Cow, 4 years old—1 and 2, Ralph H. Libbey; 3, W. A. Jolley.

Dry Cow, 4 years old—1, Ralph W. Libbey.

Cow, 3 years old—1, W. A. Jolley; 2, Ralph H. Libbey.

Cow, 2 years old—1 and 3, Ralph H. Libbey; 2, W. A. Jolley.

Heifer, senior yearling—1, W. A. Jolley.

Heifer, junior yearling—1 and 3, Ralph H. Libbey; 2, W. A. Jolley.

Heifer, senior calf—1, Ralph H. Libbey.

Heifer, junior calf—1 and 2, W. A. Jolley; 3, Ralph H. Libbey.

Aged herd—1, Ralph H. Libbey; 2, W. A. Jolley.

Breeders' young herd—1, W. A. Jolley; 2, Ralph H. Libbey.

Bull and 3 of his get—1, Ralph H. Libbey; 2, W. A. Jolley.

Cow and 2 of her offspring—1, Ralph H. Libbey; 2, W. A. Jolley.

Dairy Grades

Dry Cow, 4 years old—1 and 2, W. Carr, Woodstock.

Heifer, junior yearling—1, F. K. Brown.

Heifer, senior calf—1, Warren C. Bull.

Heifer, junior calf—1, W. Carr; 2, Chas. P. Bull, Northampton.

Cow, 4 years old—1 and 3, W. Carr; 2, W. C. Hall.

Cow, 3 years old—1, W. Carr.

Cow, 2 years old—1, W. Carr.

Heifer, 2 years old—1, W. Carr; 2, W. C. Hall.

Beef Grades

Cow, 4 years old—1, J. M. Laird & Son.

Heifer, 2 years old—1, J. M. Laird & Son.

Heifer, 1 year old—1, J. M. Laird & Son.

Fat Cow, over 2 years—1, J. M. Laird & Son.

Pair Fat Cattle—1, J. M. Laird & Son.

SWINE

Berkshire

Boar, over 2 years—1, Shaw Bros., Hartland.

Boar, over 1 yr., under 2 yrs.—1, Shaw Bros.; 2, J. R. Semple & Son, Truro, N. S.

Boar, over 6 months, under 1 yr.—1, J. R. Semple & Son.

Boar, under 6 months—1 and 3, J. R. Semple & Son; 2, Shaw Bros.

Sow, over 2 yrs.—1, 2 and 3, J. R. Semple & Son.

Sow over 1 yr., under 2 yrs.—1, Shaw Bros.; 2, J. R. Semple & Son.

Sow, under 6 months—1 and 2, J. R. Semple & Son.

Breeding Sow with litter—1, J. R. Semple & Son; 2, Shaw Bros.

Herd, Boar and 3 females, any age—1 and 2, J. R. Semple & Son; 3, Shaw Bros.

Yorkshire

Sow, over 1 year—1, Glen Campbell, Arthurette, N. B.

Tamworth

Boar, over 1 year, under 2 years—2, Clover Nook Stock Farm, Hartland.

Boar, under 6 months—1, Clover Nook Stock Farm.

Sow, over 2 years—1, Clover Nook Stock Farm.

Sow, over 6 months—1, Clover Nook Stock Farm.

Breeding Sow with litter—2, Clover Nook Stock Farm.

Herd Boar and 3 females—1, Clover Nook Stock Farms.

White Chesters

Boar, over 1 year, under 2—2, F. K. Brown, Lower Brighton.

Sow, under 6 months—1, Clover Nook Stock Farm.

Poland China

Boar, under 6 months—1, Ralph Libby, Standstead, Que; 2, Warren C. Bull, Woodstock.

Boar, over 1 year, under 2 years—1, Ralph Libby.

Sow, over 2 years—1, Ralph Libby.

Sow, over 1 year, under 2 years—1, Ralph Libby.

Sow, under 6 months—1, Ralph Libby.

Herd Boar and 3 females—1, Ralph Libby.

Fat Pigs (Boars excluded)

1, W. G. Kearney, Upper Woodstock; 2, Chas. P. Palmer & Son, Woodstock.

Spring Pig—1, L. B. McElhinney, Woodstock.

Grades

Sow, over 1 year—1, W. G. Kearney; 2, A. F. Tabor, Woodstock.

Breeding Sow with litter—1, A. F. Tabor.

Chesters

Barrow, over 5 months, under 1 yr.—1, Roland Brooks, Red Rapids.

Yorkshires

Sow, over 1 year—1, Glen Campbell.

Sow, over 5 months, under 1 year—1, Glen Campbell.

Barrow, over 5 months, under 1 yr.—1, Glen Campbell.

SHEEP

Leicesters

All prizes in this class taken by John Retson of Truro, N. S., with the exception of the 1st prize for shearling ram, won by D. G. Purvis, Woodstock.

Oxford Downs

Ram, 2 shears and over—1, J. M. Laird & Son, Kelvin Grove, P. E. I.; 2, Geo. L. Boswell, French Fort, P. E. I.; 3, Clover Nook Farm, Hartland.

Shearling Ram—1 and 2, J. M. Laird & Son; 3, Clover Nook Farm, Hartland.

Ram lamb—1, 2 and 3, J. M. Laird & Son.

Ewe, 2 shears and over—1 and 2, J. M. Laird & Son; 3, Clover Nook Farm.

Shearling Ewe—1, Clover Nook Farm; 2, J. M. Laird & Son; 3, Clover Nook Farm.

Ewe, lamb—1 and 2, J. M. Laird & Son; 3, Clover Nook Farm.

Pen, 1 Ram, 2 Ewes, 2 Ewe lambs—1, J. M. Laird & Son; 2, Clover Nook Farm; 3, Ed. Barnett, Hartland.

Pen, 1 Ram, 2 Ewes, and 2 Ewe Lambs—1, J. M. Laird & Son; 2, Clover Nook Farm.

Shropshires

Ram, 2 shears and over—1 and 2, Geo. L. Boswell, French Fort, P. E. I.; 3, A. Ayre, Hampton, Ont.

Shearling Ram—1 and 3, A. Ayre; 2, Geo. L. Boswell.

Ram, Lamb—1, A. Ayre; 2 and 3, Geo. L. Boswell.

Ewe, 2 shears and over—1 and 2, Geo. L. Boswell; 3, Clover Nook Farm.

Shearling Ewe—1 and 3, Geo. L. Boswell; 2, A. Ayre.

Ewe Lamb—1, A. Ayre; 2 and 3, Geo. L. Boswell.

Pen, 1 Ram, 2 Ewes and 2 Ewe Lambs—1, Geo. L. Boswell; 2, A. Ayre; 3, Clover Nook Farm.

Pen, 1 Ram, and 3 Ewe Lambs—1, A. Ayre; 2, Geo. L. Boswell; 3, Clover Nook Farm.

South Downs

All prizes in this class awarded to A. Ayre, Hampton, Ont., with the exception of 2nd prize for Ram Lamb, which went to Chas. Nunn, Winsloe Station, P. E. I.

Hampshire Downs

Ram, 2 shears and over—1, Chas. Nunn, Winsloe Station, P. E. I.; 2, Lorne Nunn, Winsloe Station, P. E. I.

Shearling Ram—1 and 2, Chas. Nunn; 3, Lorne Nunn.

Ram Lamb—1 and 3, Chas. Nunn; 2, Lorne Nunn.

Ewe, 2 shears and over—1 and 3, Chas. Nunn; 2, Lorne Nunn.

Shearling Ewe—1 and 2, Chas. Nunn; 3, Lorne Nunn.

Ewe Lamb—1 and 3, Chas. Nunn; 2, Lorne Nunn.

Pen, 1 Ram, 2 Ewes and 2 Ewe Lambs—1, Chas. Nunn; 2, Lorne Nunn.

Pen, 1 Ram Lamb, 3 Ewe Lambs—1, Chas. Nunn; 2, Lorne Nunn.

Cheviots

All prizes in this class went to A. Ayre, Hampton, Ont., with the exception of the 3rd prize for Ram, 1 shear and over, which went to Chas. Nunn, Winsloe Station, P. E. I.

Dorset Downs

Ram, 2 shears and over—1, Geo. L. Boswell; 2, Clover Nook Farm; 3, A. Ayre.

Shearling Ram—1, A. Ayre; 2, Clover Nook Farm.

Ram Lamb—1 and 2, Geo. L. Boswell; 3, A. Ayre.

Ewe, 2 shears and over—1, A. Ayre; 2 and 3, Geo. L. Boswell.

Shearling Ewe—1, A. Ayre; 2 and 3, Clover Nook Farm.

Ewe Lamb—1, 2 and 3, Geo. L. Boswell.

Pen, 1 Ram, 2 Ewes and 2 Lambs—1, A. Ayre; 2, Geo. L. Boswell; 3, Clover Nook Farm.

Pen, 1 Ram Lamb, 3 Ewe Lambs—1, Geo. L. Boswell; 2, A. Ayre; 3, Clover Nook Farm.

Suffolks

Ram, 2 shears and over—1, J. Reagh Horne, Winsloe Sta., P. E. I.

Shearling Ram—1, A. Parker Horne, Winsloe Sta., P. E. I.

Ram Lamb—1 and 3, A. Parker Horne; 2, J. Reagh Horne.

Ewe, 2 shears and over—1 and 2, J. Reagh Horne; 3, A. Parker Horne.

Shearling Ewe—1 and 2, J. Reagh Horne; 3, A. Parker Horne.

Ewe Lamb—1, 2 and 3, J. Reagh Horne.

Pen, Ram, 2 Ewes and 2 Ewe Lambs—1, J. Reagh Horne; 2, A. Parker Horne.

Pen, 1 Ram Lamb, 3 Ewe Lambs—1, J. Reagh Horne; 2, A. Parker Horne.

Grades, Medium Wool

Pair Ewes, 2 shears and over—1, Geo. L. Boswell; 2, J. M. Laird & Son.

Pair Ewe Shearling—1, Geo. L. Boswell; 2, J. M. Laird & Son; 3, W. G. Kearney, Woodstock

Pair Ewe Lambs—1, Geo. L. Boswell; 2, J. M. Laird & Son.

Pen, 2 Ewes, 2 Shearlings and 2 Lambs—1, Geo. L. Boswell; 2, J. M. Laird & Son.

Fat Sheep, any Breed or Grade

Ewe, over 1 year—1, Chas. Nunn; 3, J. M. Laird & Son.

Ewe Lamb—1, Geo. L. Boswell; 2, Chas. Nunn; 3, J. M. Laird & Son.

Wether Lamb—1, Chas. Nunn.

Fleece Wool

Medium Domestic—1, Chas. Nunn.

Coarse Domestic—1, 2 and 3, John Retson, Truro, N. S.

POULTRY

C, Cock; r. Cockerel; h, Hen; p, Pullet

Barred Plymouth Rocks—1 and 2, r; 1 p., John E. Page, Fredericton.

White Plymouth Rocks—1 c; 1 h; 1 p, Walter S. Bailey, Fredericton.

White Wyandottes—1 and 4, c; 3, r, 1, h, 4 p, P. L. Morgan, North Devon; 2 c, 1 r, 2 and 3, p, Avondale Boone, North Devon; 3 c, 5 h, C. M. Giles, Fredericton.

4 r, 1 p, Grover Campbell, Woodstock; 2 r, 3 h, Mrs. Geo. Danby, North Devon.

Partridge Wyandottes—1 c, 1 h, 1 r, 1 p, R. P. Allen, Fredericton.

Rhode Island Reds—1 and 2 c, 1 and 2 r, 1, 2, 3 and 4, hen, 1, 2, 4 and 4 p, Walter S. Bailey, Fredericton.

Buff Orpingtons—1 r, 1, 2, 3 and 4 p, Mrs. Geo. W. Lee, Woodstock.

White Leghorns—1 and 2 c, 1 and 2 h, 2, 3 and 4 r, J. M. Ferguson, Fredericton; 1 r, 2 p, Mrs. Geo. W. Lee; 1 p, Grover Campbell; 3, 4 and 5 p, 3 and 4 h, J. E. McKinnon, Woodstock.

Light Brown S. C. Leghorns—1 c, 1 and 2 h, P. L. Morgan.

Dark Brown S. C. Leghorns—1 c, 1, 2, 3 and 4 h, P. L. Morgan.

Black Minorcas—1 r, 1 p, Geo. Baxter, Fredericton.

Black Spanish—2 r, 2 p, Mrs. Geo. W. Lee.

Anconas—1 c, 1 and 4 h, 2, 3 and 4 p, 2 and 4 r, J. W. Stickels, North Devon; 2 and 3 h, 5 r, 1 p, Geo. Baxter; 1 and 3 r, Lewis H. Purinton, Woodstock.

Anconas, R. C.—1 r, J. W. Stickels; 1 p, Lewis H. Purrington.

Silver Campines—1 h, Geo. Baxter.

Dorkings—1 r, 1 h, 1 r, 1 p—Ralph H. Libby, Stanstead, Que.

Partridge Rocks—1 c, 1 h, 1 r, 1 p, Ralph H. Libby.

Buttercups—1 c, 1 h, 1 r, 1 p, Ralph H. Libby.

UTILITY

Barred Plymouth Rocks—1 r, 1 and 2 p, Grover Campbell.

White Wyandottes—1 c, 3 h, F. C. Foster, Woodstock; 1 and 3 p, 2 and 4 h, Grover Campbell; 1 h, 4 p, Robert R. Brown, Woodstock; 2 and 5 p, Jas. S. McManus, Woodstock.

Rhode Island Reds—1 c, 1 r, 1 p, F. B. Dibb, Fredericton.

White Leghorns—1 c, Mrs. Geo. W. Lee; 1 p, John E. McKinnon.

Pen White Wyandottes—1 and 2 h, P. L. Morgan.

Pen Anconas—1, J. W. Stickels.

Utility Breeding Pens

Barred Rocks—1, Arthur Burpee, Woodstock.

White Wyandottes—1, Mrs. D. W. Rankine, Woodstock.

GEESE

Gander—1, Warren C. Bull.

Best bird in show—1, H. E. Burtt.

Best Breeding Pen—Mrs. D. W. Rankine.

Boys' and Girls' Poultry Exhibit—Arthur Burpee.

BUTTER

Box of 56 lbs.—1, Farmers Co-operative Creamery Co., Moncton, N. B.; 2, Geo. Ransom, Woodstock.

Box of Prints, 20 lbs.—1, Farmer's Co-operative Creamery Co.; 2, Geo. Ransom.

Tub or Crock—1, L. B. McElhinney, Woodstock, 93½; 2, Chas. Gough, Woodstock, 93; 3, Chas. Monteith, Northampton, 91½; 4, Mrs. Alex. Crocker, Woodstock, 91; Mrs. M. A. O'Brady-Jones, Woodstock, 91.

Box of Prints, 15 lbs.—1, Chas. P. Palmer & Son, Woodstock, 94½; 2, Mrs. Alex. Crocker, 93; 3, M. A. O'Brady, 92½; 4, Chas. P. Bull, 92; 5, Warren C. Bull, 91½, Harry Reid, Woodstock, 91½; 6, Charles Monteith, 91.

CHEESE

Factory Cheese, not over 35 lbs., made between 1st and 15 August—1, Daniel P. McCormick, Newtown; 2, John A. Northrup, Millstream.

Factory Cheese, not over 35 lbs., made between 15th and 31st of August—1, John A. Northrup, Millstream; 2, Daniel P. McCormick.

Eggs—1, H. E. Burtt.

GEO RANSOM, Judge.
Woodstock.

HORTICULTURE

Best collection Apples, grown on any one farm—1, R. D. W. Hubbard, Oromocto; 2, H. W. Rogers, Woodstock.

Collection Apples, commercial variety—1, R. D. W. Hubbard.

AGRICULTURE

Best collection Garden Vegetables—1, Irvine Norton, Woodstock; 2, H. W. Rogers; 3, Chas. P. Bull, Northampton.

Oats, Banner—1, F. K. Brown, Lower Brighton.

Barley—1, Howard Palmer, Woodstock; 2, Chas. P. Palmer & Son, Woodstock.

Oats, Black—1, McIntyre Bros., Sussex, N. B.

Buckwheat—1, McIntyre Bros.; 2, Chas. P. Palmer & Son; 3, W. G. Kearney.

Beans, colored—1, Chas. P. Bull Northampton; 2, Joseph Griffith, Woodstock; 3, Peabody Bros., Woodstock.

Timothy Seed—1, McIntyre Bros.; 2, Chas. P. Palmer & Son; 3, Peabody Bros.

Green Mountain Potatoes—1, Peabody Bros.; 2, J. H. Milbury, Woodstock; 3, Chas. P. Palmer & Son; 4, H. W. Rogers; 5, Wm. Balmain, Woodstock.

Irish Cobbler Potatoes—1, Chas. P. Palmer & Son; 2, E. H. Morriss, Woodstock; 3, Arthur Burpee, Woodstock; 4, Geo. Maloney; 5, J. H. Milbury.

Any long white variety—1, J. H. Milbury; 2, H. W. Rogers.

Potatoes, any rose variety—1, J. H. Milbury; 2, Wm. Ballmain; 3, Howard Palmer.

Any red variety—1, H. W. Rogers; 2, J. H. Milbury; 4, D. G. Purvis.

Any dark skinned variety—1, J. H. Milbury; 2, D. G. Purvis.

Turnips, Swede, Feeding—1, W. G. Kearney; 2, Peabody Bros.; 3, Geo. Maloney; 4, Chas. P. Bull.

Swedes, Table—1, C. K. Rogers, Woodstock; 2, Robert Hale, Grafton.

Mangels—1, Chas. P. Bull; 2, H. W. Rogers.

Sugar Mangels—1, Chas. Margerson, Woodstock; 3, H. W. Rogers.

Carrots, Red—1, H. W. Rogers.

Carrots, White—1, H. W. Rogers.

Pumpkins—1, Clarence E. Brittain; 2, F. M. Slipp, Woodstock.

Sheaf Fodder Corn—1, Chas. P. Bull; 2, H. W. Rogers.

Best collection Field Roots—1, H. W. Rogers.

Beets, Egyptian—1, H. W. Rogers; 3, F. M. Slipp.

Beets, Eclipse—1, Wm. Ballimain; 2, H. W. Rogers; 3, Frank Baird, Woodstock.

Beans, wax, podded—1, F. C. Foster, Woodstock.

Cauliflower—1, W. G. Kearney; 2, Frank Baird.

Cabbage—1, H. E. Burtt; 2, H. W. Rogers.

Carrots, Intermediate—1, H. W. Rogers; 2, Irvine Norton; 3, H. E. Burtt.

Corn, Sweet—1, Irvine Norton.

Carrots, Oxheart—1, Peabody Bros.; 2, H. W. Rogers.

Celery, White—1, Irvine Norton; 2, Wm. Ballmain.

Corn, Yellow, Golden Bantam—1, J. C. Harvey, Woodstock; 2, Chas. P. Bull; 3, Irvine Norton.

Celery Red—1, Irvine Norton.

Cucumbers—1, Irvine Norton; 2, H. E. Burtt.

Onions, White—3, Irvine Norton.

Onions, Yellow—1, J. C. Harvey; 2, H. E. Burtt; 3, Irvine Norton.

Onions, Red—1, Wm. Ballmain; 2, Grover Campbell, Woodstock.

Onions, Potato—1, Wm. Ballmain; 2, Irvine Norton; 3, H. W. Rogers.

Parsnips, Hollow Crown—1, Frank Baird; 2, Irvine Norton.

Parsnips, Intermediate—2, H. W. Rogers.

Peas, Garden—1, F. C. Foster.

Radishes—1, H. W. Rogers.

Squash, Marrow—1, H. W. Rogers; 2, Clarence Brittain.

Squash, Hubbard—1, Irvine Norton; 2, F. M. Slipp; 3, F. C. Foster.

Squash, Mammoth—1, Clarence Ballmain; 2, Chas. P. Bull; 3, Irvine Norton.

Squash, English Vegetable Marrow—1, H. W. Rogers.

Tomatoes, Red—1, J. C. Harvey; 2, Irvine Norton; 3, Frank Baird.

Tomatoes, Green—1, H. W. Rogers; 2, Clarence Brittain; 3, Irvine Norton.

Tomatoes, best assorted collection—1, Frank Baird; 2, Irvine Norton; 3, H. W. Rogers.

BOYS PIG CLUB SHOW AT WOODSTOCK

Woodstock Exhibition saw something new in the swine classes in the form of exhibits from the "Boys Pig Clubs" of N. B.

These clubs, of which there are now 21, are comprised of at least 10 boys between the ages of 12 and 18 years, who are each supplied with a pure bred sow, 6 weeks old, which they are to keep 2 years and breed to a boar of the same breed, which is also supplied. The organization of the clubs and the purchase of the stock is done by the N. B. Dept. of Agriculture, while this purchase is financed by public spirited men, who are interested in the live stock industry and in the "coming stockmen." The foundation stock has been carefully selected from the leading swine breeders in the Maritime Provinces and Ontario, so that their offspring is the very best.

By a request of the Live Stock Division of the Dept. of Agriculture, the leading exhibitions in N. B. offered special classes in swine, open only to members of these clubs, and it was gratifying to see that the boys took advantage of this in sending pigs to the Woodstock Exhibition.

These pigs were in many cases entered in the open classes, and when this was done, they carried off the first and second prizes.

This goes to show that the stock was good and that the boys had them in good condition, and that the stock from these clubs should play an important part in the future of the pure bred swine industry of the province.

THE FREDERICTON EXHIBITION

(Continued from page 873)

Dry Cow.—1st, Dickie Bros.; 2nd, Harding Bros.; 3rd, Harding Bros.

Dry Cow, 3 years old.—1st, Dickie Bros.

Cow, 2 years old.—1st, Dickie Bros.; 2nd, Dickie Bros.

Heifer, senior yearling.—1st.—Harding Bros.; 2nd, Dickie Bros.; 3rd, Clovernook Stock Farm.

Heifer, junior yearling.—1st, Dickie Bros.; 2nd, Harding Bros.; 3rd, Dickie Bros.; 4th, Clovernook Stock Farm.

Heifer Calf, senior.—1st, Harding Bros.; 2nd, Dickie Bros.; 3rd, C. E. Barnett, Hartland, N. B.

Heifer Calf, under 6 months.—1st, Harding Bros.; 2nd, Dickie Bros.; 3rd, Harding Bros.; 4th, Clovernook Stock Farm.

Aged Herd.—1st, Dickie Bros.; 2nd, Harding Bros.; 3rd, Clovernook Stock Farm.

Breeders' Young Herd.—1st, Harding Bros.; 2nd, Dickie Bros.; 3rd, Clovernook Stock Farm.

Four Calves.—1st, Harding Bros.; 2nd, Dickie Bros.

Three animals, get of 1 sire.—1st, Dickie Bros.; 2nd, Harding Bros.

Three animals, get of 1 cow.—1st, Harding Bros.

Cow and 2 of her offspring.—Diploma, Harding Bros.

Jerseys

Bull, 3 years old.—1st, J. R. Semple & Son, Truro, N. S.; 2nd, John R. Jewett, Island View.

Bull, junior.—1st, W. T. Craig.

Cow, 2 years old.—1st, J. R. Semple & Son.

Heifer, senior.—1st, J. R. Semple & Son.

Heifer, Calf.—1st, J. R. Semple & Son; 2nd, J. R .Semple & Son; 3rd. J. R. Semple & Son.

Breeders' Young Herd.—1st, J. R. Semple & Son.

Bull and 3 of his get.—Diploma, J. R. Semple & Son.

Brown Swiss

Bull, 3 years old.—1st, Ralph H. Libbey, Stanstead, Que.; 2nd, W. A. Jolly, Waterloo, Que.; 3rd, Ralph H. Libbey.

Bull, 2 years old.—1st, W. A. Jolly.

Bulll, senior.—1st, Ralph H. Libby; 2nd, W. A. Jolly.

Bull, junior.—1st, Ralph H. Libby.

Bull, calf.—1st, W. A. Jolly; 2nd, Ralph H. Libby.

Bull Caf, under 6 months.—1st, Ralph H. Libby; 2nd, W. A. Jolly; 3rd, Ralph H. Libby.

Cow, 4 years old.—1st, W. A. Jolly; 2nd, W. A. Jolly; 3rd, Ralph H. Libby; 4th, Ralph H. Libby.

Dry Cow.—1st, W. A. Jolly.

Cow, 3 years old.—1st, Ralph H. Libby; 2nd, W. A. Jolly.

Cow, 2 years old.—1st, W. A. Jolly; 2nd, W. A. Jolly; 3rd, Ralph H. Libby.

Heifer, senior.—1st, Ralph H. Libby.

Heifer, junior.—1st, W .A. Jolly; 2nd. W. A. Jolly; rd, Ralph H. Libby.

Heifer Calf.—1st, W. A. Jolly.

Heifer Calf, under 6 months.—1st, Ralph H. Libby; 2nd, W. A. Jolly; 3rd, W. A. Jolly; 4th Ralph H. Libby.

Aged Herd.—1st, W. A. Jolly; 2nd, Ralph H. Libby.

Breeders' oYung Herd.—1st, W. A. Polly; 2nd, Ralph H. Libby.

Bull and 3 of his get.—Diploma, W. A. Jolly.

Cow and 3 of her offspring.—Diploma, W. A. Jolly.

SHEEP

Leicesters

Ram, 2 shears and over.—1st, Burpee & Smith, Nashwaaksis; 2nd, Geo. Pugh, Nashwaaksis.

Ram, shearling.—1st, John Retson; 2nd, Burpee & Smith; 3rd, Burpee & Smith.

Ram Lamb.—1st, John Retson; 2nd, Burpee & Smith; 3rd, John Retson.

Ewe, 2 shears and over.—1st, John Retson; 2nd, John Retson; 3rd, John Retson.

Ewe Lamb.—1st, John Retson; 2nd, Burpee & Smith; 3rd, Burpee & Smith

Shearling Ewe.—1st, John Retson; 2nd, Burpee & Smith; 3rd Burpee & Smith.

Pen.—1st, John Retson; 2nd, John Retson.

Pen (Lambs).—1st, John Retson.

Lincolns

Shearing Ram.—1st, Albert Boswell French Port, P.E.I.; 2nd, Albert Boswell.

Ram Lamb.—1st, Albert Boswell; 2nd, Albert Boswell.

Ewe, 2 shears.—1st, Albert Boswell! 2nd, Albert Boswell.

Shearling Ewe.—1st, Albert Boswell; 2nd, Albert Boswell.

Ewe Lamb.—1st, Albert Boswell; 2nd, Albert Boswell; 3rd, Albert Boswell.

Peu.—1st, Albert Boswell; 2nd, Albert Boswell.

Pen (Lambs).—1st, Albert Boswell.

Oxford Downs

Ram, 2 shears and over.—1st, Geo. L. Boswell; 2nd, J. M. Laird; 3rd, Clovernook Stock Farm.

Ram, shearling.—1st, —. M. Laird & Son; 2nd, J. M. Laird & Son; 3rd, Clovernook Stock Farm.

Ram Lamb.—1st, J. M. Laird & Son; 2nd, J. M. Laird & Son; 3rd, J. M. Laird & Son.

Ewe, 2 shears.—1st, J. M. Laird & Son; 2nd, J. M. Laird & Son; 3rd, Clovernook Stock Farm.

Shearling Ewe.—1st, Clovernook Stock Farm; 2nd, J. M. Laird & Son; 3rd, W. Illingworth.

Ewe Lamb.—1st, Clovernook Stock Farm; 2nd, J. M. Laird & Son; 3rd, J. M. Laird & Son.

Pen.—1st, J. M. Laird & Son; 2nd, Clovernook Stock Farm.

Pen (Lambs).—1st, J. M. Laird & Son; 2nd, Clovernook Stock Farm.

Fat Sheep

Ewe, 1 year.—1st, Cephas Nunn; 2nd, J. M. Laird & Son; 3rd, R. A. Snowball.

Cotswolds

Ram, 2 shears and over.—1st, W. T. Craig, Nashwaaksis.

Ram, shearling.—1st, W. T. Craig.

Ram Lambs.—1st, 2nd and 3rd W. T. Craig

Ewe, 2 shears and over.—1st, 2nd and 3rd, W. T. Craig.

Eewe, shearling, 1st and 2nd, W. T. Craig.

Ewe Lamb.—1st and 2nd, W. T. Craig.

Pen.—1st, W. T. Craig.

Pen.—1st, W. T. Craig.

Shropshires

Ram, 2 shears.—1st, G. L. Boswell; 2nd, John H. King, Sussex, N. B.; 3rd, G. L. Boswell.

Shearling Ram.—1st, A. Ayre, Hampton, Ont.; 2nd, J. H. King & Son; 3rd, Geo. L. Boswell.

Ram Lamb——John H. King & Son; 2nd, A. Ayre; 3rd, George L. Boswell.

Ewe, 2 shears.—1st, George L. Boswell; 2nd, George L. Boswell; 3rd, J. H. King & Son.

Shearling Ewe.—1st, J. H. King & Son; 2nd, George L. Boswell; 3rd, A. Ayre.

Ewe Lamb.—1st, George L. Boswell; 2nd, J. H. King & Son; 3rd, A. Ayre.

(Continued on page 896)

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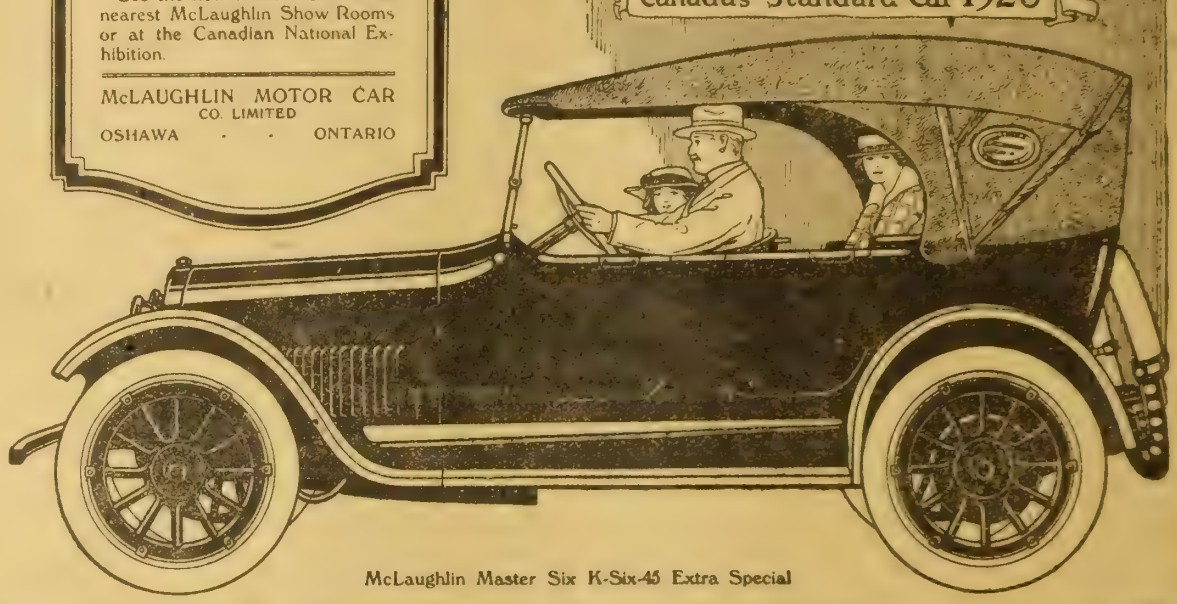

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The McLAUGHLIN MASTER SIX

"See the New McLaughlin Models at the nearest McLaughlin Show Rooms"

Gleanings From the N. S. Agricultural College

AGRICULTURAL SHOWS

The explosion at Halifax wiped out the possiblity of a Provnicial exhibtion by demolishing the buildings. To offset this there is an unusual number of County sows, and so far there is more than the usual interest taken in them. There have been or will be exhibition at the following points this Autumn—Caledonia, Bridegwater, Little Brook, Digby Shubenacadie, Musquodobit, Oxford, Antigonish, Guysborough, Inverness, Sydney and the Maritime Winter Fair at Amherst,

The distribution of these shows makes it possible for the farming population ol the Province to take in one or more during the season. The agricultural exhibition, with all its varied side lines along the lines of Domestic Science, etc., is an institution which should be patronized by every lover of home and country. It is one of the great means of advancement, through the dissemination of the most expert knowledge, and the demonstration of the best types of stock, vegetables, grains, etc. Besides, those who attend these will have an opportunity of meeting a representative of the Department of Agriculture, with benefit to both. It is a gratifying fact that Exhibitions throughout Canada this year have a record attendance.

DAIRY NOTES

The Co-operativeCreamery idea is taking hold and spreading into new communities. Two companies have recently been organized in Hants Co. one, known as the Avon Creamery, Ltd., embracing East Walton, Walton, Kempt, Burlington, and adjoining communities; the other, the East Hants Creamery Co., covering the Gore, Rawdon, Pleasant Valley, Nine Mile River, Kennetcook River and adpacent districts. Both organizations have made a good start, with an authorized capitailization of $10,000 each. The whole movement is largely due to the efforts of the Dairy Division, Nova Scotia Department of Agriculture, which was represented at the various meetings held by the Superintendent of this department, Mr. W. A. McKay.

The record made by Nova Scotia Creamery men at the Toronto Exhibition, Canada's Nationl Fair, is one to be proud of. Last year's showing was quite creditable, but this year's was better. There were four classes of entries, and from forty to fifty entries in each class. The highest score made in the exhibition was 97.50. Brookville Creamery came within the smallest possible fraction of this record with a score of 97.49 for unsalted butter, taking first place in this exhibit. Brookfield also stood high in other classes.

The Pictou County Dairy Co., at Stellarton, and the, Antigonish Dairy Co., at Antigonish, were both well up in the prize list while the Scotsburn Creamery and the La Have did not score so high, they had fine exhibits, and made a creditable sowing.

The results of this competition, entered on fair terms with dairy producers and products from all over Canada, should be encouraging to the farming interests of the East, and should stimulate dairy production in Nova Scotia. It has been demonstrated that this Province can compete with the world in the quality of her dairy products and that she can enter the markets with the best, confident of holding her own and of commanding the highest prices.

The standard obtained by the N. S. Creamery men, who have received their training at our own instiution in Truro, should convince young farmers who are ambitious to excel in this line that there is no better place to learn how than the N. S. Agricultural College. Drop a card to the Principal and get prospectus.

WOMEN'S INSTITUTES

The new Superintendent of Women's Institutes for Nova Scotia, Miss Helen Macdougall, has entered upon her duties, with headquarters at the Agricultural College, Truro. Miss Macdougall comes well prepared by training and experience. She took the regular course at the Provincial Training school under Miss McCall, and studied subsequently at Columbia University, New York. After several years of teaching in her chosen subject, she was appointed Supervisor of Home Economics for the Province of Manitoba. She now returns to her native Province to continue much the same line of work.

"For Home and Country" is the motto of this fine organization, and its activities are as varied, its ideals as high as the motto suggests. It has proven so effective an organization in the Old Country that 1,000 societies were started in England alone during the war. In this country our women's war activities were largely carried on under other names, Red Cross, Patriotic Leagues, etc., and it was thought best not to push the Institute organizatio nas such until th estrain of war should be over.

Happily the time has now arrived when women are disbanded very largely from these specific war activities, and the time is ripe for a big expansion along Institute lines. The great problems, some of them old and some new, which are more in evidence now than ever, are, for the most part beyond the reach of legislation. They lie too near to the very heart of our life to be dealt with by law. There can be no question that those fundamental institutions in which women have traditional and undisputed rights and powers, such as the home and the public school, are the spheres in which most can be done to mould our national iedals.

All this constitutes a call to women to rally to such an organiation as the Women's Institute. In this Province there are, at present, some fifty Institutes. A large number of districts are contemplating the formation of societies. The Annual meeting has been postponed from June until October so that the new Superintendent could be present. Any community which is thinking of organizing would do well to correspond wth Miss Macdougall at an early date, so that a representative may be sent to assist.

A GOOD OFFER TO SHEEP BREEDERS

The Live Stock Branch, Dominion Dept. of Agriculture, has recently issued a pamphlet, known as No. 19, giving information of a new policy for the encouragement of sheep breeding. To put it in a word—on application to this Branch any farmer who has never before used a pure bred ram, and who will undertake to secure one for the current year, will be paid a bonus of $10.00 in two instalments. This is a fine opportunity for farmers to improve their flocks, and many should take advantage of so generous an offer. The pamphlet, giving full information, may be had from the Live Stock Branch at Ottawa, or from the College at Truro .

FALL PLOWING

We have, at various times, advocated different measures to help overcome the shortage in mill feeds which have prevailed for three years past. Among these the improvement of pastures so as to ensure high production in milk and beef during the summer months is very important. The silo for winter feeding is also a big factor; but there is really nothing to take the place of grain feeds.

It must be borne in mind that we have looked and looked in vain for improvement in the feed situaton year by year, and that the outlook for the present year is even less promising than at any previous time, and prices have reached the highest level yet attained. There is little probability of any marked relief for at least a year or two yet.

In view of this situation there is one evident measure to be taken by every farmer, and now is the time to set about it, i. e., to plow for a large grain crop next year.

Fall plowing on nearly all farms in Nova Scotia has proven much better than Spring plowing for the growing of practically all kinds of crops. In some seasons it is impossible to get much done owing to the hard condition of the soil. The unusually heavy rain fall has removed this difficulty, and much of our soil is in good condition for plowing. Everything; therefore, points to the wisdom of keeping the plow going at every opportunity from this time until the winter frosts.

POLICIES ADOPTED FOR ENCOURAGEMENT OF SHEEP-RAISING

New Brunswick Department Makes an Important Announcement in this Regard—Supplements Dominion Bonus on Pure Bred Rams

The Province of New Brunswick is especially adapted for sheep-raising and the Department of Agriculture are putting forth every effort to encourage the extension of this industry. While it is highly desirable to have many more sheep in the Province, it is also of importance to work toward improving the quality of the breeding stock, so that a superior class of sheep will be raised.

Plans of a very practical nature have been decided upon to encourage both pure-bred breeders and breeders of grade stock within the province. In order to encourage the man who has never before used a pure-bred ram to purchase one this fall, the Department are supplementing the ten dollar premium offered by the Dominion Live Stock Branch to the extent of Five Dollars, this amount payable as soon as the ram is purchased and evidence submitted that a pure-bred ram has been purchased. Through this cooperation with the Dominion Live Stock Branch, it is expected that many farmers will be induced to purchase a pure-bred ram for the first time. The Fifteen Dollars received as a premium will bring the price down more nearly to the level of that of a grade. Under these circumstances, there will be every inducement for a man to purchase a pure-bred.

Another policy decided upon, embodying a plan which has never been attempted by any Province in Canada, is the grading of all the pure-bred rams offered for sale in the Province. The services of an outside man will be secured. This person will be a qualified sheep judge, who will visit each pure-bred breeder in the Province and classify the rams for sale into three grades—Superior, Average and Common. These rams will be marked acocrding to their grade. A farmer can write to a breeder for any grade that he desires and be sure of getting a ram up to the standard of that particular grade. The number for sale in the different grades, together with the price that the breeder is asking for each, will be listed with the Department at Fredericton. Information can thus be furnished to anyone wishing to make a purchase where he can secure a ram of the breed and grade required. This purchase can be made by mail practically as satisfactorily as by a personal visit.

The pure-bred breeder will get a cash premium of three dollars for each three star ram and two dollars for each two star ram produced. No premium will be given for the one star or common ram. This cash premium is expected to encourage better breeding methods on the part of pure-bred men and will be an incentive for them to pay a higher price and secure a better ram to head their flocks, in order that they may get as many of their rams in the higher grades as possible.

Boys' and Girls' Sheep Clubs are also being organized. Arrangements have been made through the Bankers' Association so that any Bank in the Province will provide credit to bona fide members of the Provincial Clubs. Two grade Shearling ewes will be the number allotted to each member. They can get twelve months' credit at six per cest interest at the Banks. The Department will supply a pure-b red ram to any Club with ten or more members. The ewes will be bred before being distributed. Special Club Fairs will be held, at which prizes will be given on lambs and sheep. It is expected that returns in wool and lambs will enable the boys and girls to meet their note when it falls due.—E. P. Bradt, Secretary for Agriculture.

FERTILIZERS FOR THE SEASON OF 1919-20

N. B. Agricultural Societies Will Supply New Brunswick and the Maritime Farmer Will Look After Nova Scotia

As predicted by the Maritime Farmer in its last issue, fertilizer prices will be lower in 1919-20 than they were a year ago. There is an appreciable difference in the cost of mixed and unmixed goods, except in acid phosphate which will be as high or higher than last season. There has been a strike in Florida among the rock phosphate workers, and production has been greatly curtailed. Then there has been a big demand for overseas shipment. Ammonias, nitrate of soda and sulphate of ammonia are much cheaper than a year ago, but the price has been going up and will be higher in the spring, if present indications mean anything. Potash will be available at half the price of last season or even less. The outlook, at one time, was for sufficient European potash to fill all requirements in America, but this promise is now discounted.

The New Brunswick Agricultural Societies United will be on hand this year with supplies of nitrate, acid phosphate and potash in mixed cars. It is also proposed to handle mixed goods in the same cars for those societies who want them. The average farmer can save a large sum of money by buying co-operatively. By mixing his own goods he can save many dollars as compared with the charges for mixed goods. But if he wants mixed goods, he can also cut his costs by a large margin, if he buys in car lots.

In Nova Scotia, the Maritime Farmer, will look after the interests of farmers who wish to buy in car lots. Get your neighbors together and arrange to buy straight unmixed goods or mixed. The prices will provide for cash payments and it will be necessary to have your local bank, that your draft be protected on presentation. If you are interested, write either organization, AT ONCE. Address all communications to either organization, N. B. Agricultural Societies United, Sussex, or The Maritime Farmer, Sussex, N. B.

HORTICULTURE.

N. S. ORCHARD FIELD DAY

On August 20th, upwards of three hundred enthusiastic fruit-growers of the Annapolis and Cornwallis Valleys enjoyed an Orchard Field Day, under the direction of Mr. Geo. E. Sanders and Prof. W. H. Britain, who have done so much to show the fruit growers of Eastern Canada how to combat their orchard enemies with a minimum of labor and expense, and with a high degree of efficiency. The procession consisted of sixty-one automobiles, as they went from orchard to orchard, where particularly interesting experiments could be noted. The party inspected a total of 150 acres of orchard—areas that were dusted according to the suggestions offered by Messrs. Sanders and Britain, in their 1919 spray calendar.

Among others the party included such noted fruit growers as S. B. Chute, W. W. Pinneo, John Buchanan, S. C. Parker, J. Elliott Smith, Fred and Ernest Johnson, Joseph Kinsman, Mrs. Sangster, Ray Clark, Geo. McLean, E. I. Loomer, Stanley Banks and Kenneth Pinneo.

Another interested member of the party was Prof. H. H. Whetzell, head of the Department of Plant Pathology for New York State, who having heard of the success that the fruit-growers of Nova Scotia were attaining in the growing of clean apples by the use of the new dust spray, discovered by Mr. Geo. Sanders, came to see the results of the experiments at first hand, so that he might be able to pass the ideas on to the fruit-growers of his State.

Starting from J. Elliott Smith's orchard near Wolfville, the party next visited Ernest Johnson's orchard, where he had used the new Bordeau dust in a large commercial way, and succeeded in getting one of the cleanest crops of Gravensteins in the Valley. In the Dexter Collins' orchard, the fruit growers compared the results procured by the use of various spray calendars, after which the next point of interest was in the Experimental Station orchards, Kentville, where the new copper-lime-arsenate dust was tested on potatoes as well as the new stock solution method for using white arsenie in liquid Bordeaux. In both cases the insect and blight control was perfect with no foliage injury in evidence. From the Experimental Station the party proceeded to J. Howe Cox's orchard at Cambridge, where a number of spray calendars were tested, and thence to S. B. Chute's orchard at Berwick, where fifteen acres had been dusted. Here the dust was checked against the 1919 spray calendar. Here again the new copper-lime-arsenate dust gave as good, if not better, results in growing a clean crop of Gravensteins than did the liquid spray, while the unsprayed check trees carried a 95 per cent. scab infested crop.

At the Senator W. B. Ross orchard in Middleton, various spray calendars were compared and it was there again demonstrated that the fourth spray of lime-sulphur removes from the trees a large portion of the crop of apples in Nova Scotia. This injury is estimated to have caused a loss of at least 200,000 barrels of apples a year in Nova Scotia since 1912.

This year the Nova Scotia fruit growers have gone back to Bordeau and soluble sulphur and consequently have the first big crop since 1911, when the crop was 1,700,000. This year's crop is estimated at at least one and one half millions of barrels. The crops intervening between 1911 and 1919 ran much less than one million barrels.

Again at the Elvin Schaffner orchards, Lawrencetown, liquid spray calendars were compared, and the injury wrought by lime-sulphur demonstrated.

The Everett orchards, Bridgetown, were next visited and there lime sulphur versus no spraying and Bordeau was compared.

From the remarks made by the apple growers on the trip it would appear that they are all going to follow the practice of dusting as rapidly as they can change over. It looks now as if second hand spray rigs could be bought very cheaply in the Valley.

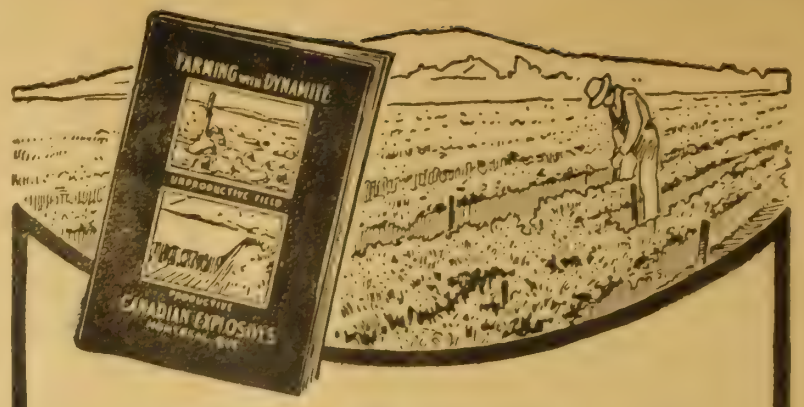
The supremacy of the 1919 spray calendar over all its predecessors was amply demonstrated and was acclaimed as the first absolutely satisfactory calendar.

Dusting as carried on gives the best results when aplied on early damp mornings on still, damp days and may be applied about ten times as fast as liquid spray, so that in treating an orchard with dust one may use time which cannot be otherwise used for any other field or farm purpose to advantage.

With the low cost of the copper-lime arsenate dust, invented by Mr. Geo. Sanders, dusting will be a great deal cheaper than liquid spraying and it has this year shown itself to be equally effective. It will also enable fruit growers to carry on farm work and care for their orchards, a practice which is almost impossible where liquid spraying is conducted.

Prof. Whetzell was delighted with this, his first visit to Nova Scotia. He found the tree heavily laden with an uniformly good crop. He considered the fruit in the dusted orchards of higher grade and better finish and was ready to acclaim that Bordeaux dusting is certainly as good as spraying. He considers however, that Bordeau dusting rusts the apples a little more than does sulphur dusting. Prof. Whetzel was delighted with the enthusiasm evidenced by the Valley fruit growers in the dusting proposition and forecasted a heavy demand for dusting machinery in the near future. He returns home to report what he saw to the fruit growers of his state. He was also very much interested in his visit to the United Fruit Company's headquarters, where Manager McMahon gave him an insight into the possibilities of co-operation and the success it is attaining among the fruit growers of Nova Scotia.

The tools and facilities required for keeping harness in repair are comparatively simple and inexpensive. A considerable portion of the repair work on harness can be performed by the aid of tools required for other purposes, but these are a few special devices that are desirable.



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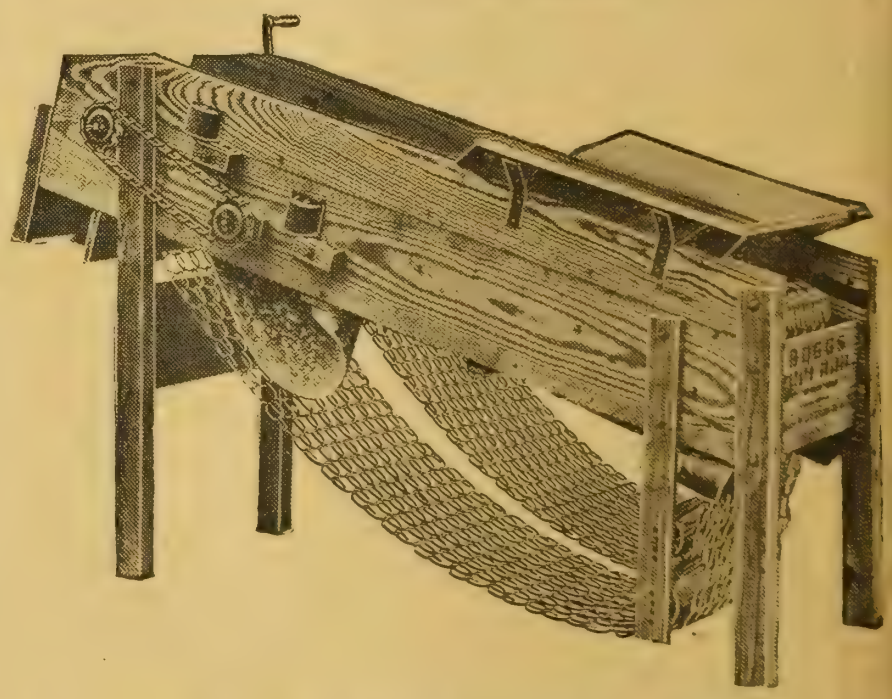

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HOEING PAYS IN CORN AND ROOTS

The introduction of improved methods of agriculture and the use of labor-saving implements in Canada can be dated back to the time this country was captured from the Indians, and while development has been steady, their use was greatly accentuated by the war. Help was scarce and hand labor reduced to the minimum, during the past four years, consequently the only alternative was to use machinery wherever possible. The success of that change can be judged best by the crops obtained, facturers. In many cases the substitution of implements for hand labor had a beneficial effect, largely because the work was done more frequently, but there was on every farm, an apparent lack of hand hoeing.

It may be all right to plant hoed crops in elevated ridges, check rows and cultivate both ways, but there is nothing that can replace the hand hoe. No horse drawn implement can go as close to the plants, and no implement has as yet been devised that will remove weeds that grow between the plants and keep the ground stirred except between the rows. But such work is essential if a maximum crop is to be expected, and it cannot be done without more or less hand hoeing.

The work of hoeing may seem very simple, but there is a great "knack" in doing it, in fact there are very few men who are real experts at the job. However, hoeing is not hard to learn; it requires common sense and patience and cannot be done at "break neck" speed as many people suppose. The best hoers in the world are the men of the British Isles, and it is most interesting to watch them doing the work. Going at it in a systematic way they work very easily and cover a great area in a day.

They stand sideways to the work, one row across, and by so doing every stroke counts. They use hoes with blades set at right angles to the handle instead of the acute angle of those sold in Canada. Furthermore, they have both ends of the hoe sharp, thereby giving them three sharp edges instead of one as is the case with the Canadian hoes. With this hoe it is much quicker and easier to do the work, as it can be used both ways, pushing away from the operator and drawing towards him. It is not uncommon for men using such a hoe and working in land free from stones to weed or thin from half to three-quarters of an acre per day, and some can do even more. The position of the operator and the shape of his hoe are the deciding factors between easy and difficult, fast and slow work, and every man who intends to do any amount of hoeing should readjust his hoe to fit the work. It is a simple matter and can be done by any handy man or blacksmith by first squaring the ends of the hoe with a cold chisel and filing them as sharp as possible as well as the face. Then place the neck of the hoe in the fire and heat it until the blade can be bent back till it is at right angles with the handle. It will only take a few minutes to do this, but it will save many hours of work as well as the tiresome task of back-bending to remove weeds or surplus plants.

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COMPARISON OF THE DIFFERENT KINDS OF WINTER STORES FOR BEES

(Expermental Farms Nate.)

In the experments with bees at the Experimental Farms it was early recognized that the nature of the winter stores is an important factor in successful wintering, and the experiments have confirmed this. Experiments at the Central Experimental Farm indicate that clover honey (alsike and white clover) makes reliable stores for wintering, but poor results have followed the use of stores that granulate hard during the winter. A colony wintered on dandelion honey came out in spring very weak; the honey had granulated hard and the bees had uncapped it but could use very little of it. In some years a mixed honey that comes largely from clover, sweet clover, and other plants granulates hard with the same result and causes heavy loss. Buckwheat honey has been found wholesome, but some of the other honeys gathered in the fall have been found unwholesome, especially in marshy places in Nova Scotia, and have caused dysentery and death. In one season in Northern Ontario, the fall honey was not capped over and failed to ripen and soured, causing dysentery and heavy loss. Honey containing juices collected by the bees from over-ripe fruit killed a colony before spring, so also did cane syrup used as an exclusive food for wintering. Syrup made from refined sugar, two parts of sugar to one of water, fed to the bees in the early fall, has given fairly good results as an excluise winter food, and has been found to be the best practical corrective for stores that are slightly unwholesome. Year after year at the Central Farm, colonies on natural stores that have been fed liberally with this syrup come out stronger in spring than those that have wintered on the natural stores alone. Syrup made from raw cane sugar has given less satisfactory results than that made from refined sugar.—F. W. L. Sladen, Apiarist, Dominion Experimental Farms.

UNFIT SEED PROHIBITED

Regulations are now in force which prohibit the importation into Canada, in lots of ten pounds or more, of unfit seed of clovers, grasses, vetches, rape, other forage plants, field root and garden vegetables.

Unfit seed is described in Pamphlet S-12 of the Seed Branch of the Department of Agriculture at Ottawa, and obtainable from the Publications Branch, as that which does not comply with the Seed Control Act requirements respecting the sale of seed in Canada, or if it has been refused admittance into any other country on account of low vitality.

The regulations governing this matter are fully described in this pamphlet which shows that unfit seed that has arrived in Canada shall be deported under Customs supervision. Penalties are attached to infractions of the law in this regard.

DAIRYING

COOLING CREAM PROPERLY BEFORE IT LEAVES THE FARM

Every dairy farmer who makes a business of selling cream during the summer months has, from time to time listened to all kinds of advice and instructions, on the why and how of cream cooling. While no doubt some of this advice has been acted upon, still a great deal of it has received very little attention from dairymen generally. There are reasons of course, why the cream producers do not seem overly anxious to go to any more trouble with the cream while it is in their hands than the law calls for. One good reason is, that the parties inclined to give advice as to the necessity of properly cooled cream, have failed to present reliable concrete facts and figures to bear out their statements, that such cream makes higher-scoring butter which brings larger returns from the market than that made from poorly cooled cream. This together with the unwillingness displayed by the manufacturer to pay for cream on a quality basis, largely accounts for the half-hearted interest which the dairy farmer has shown in the subject.

Facts and Figures

To remove the air of uncertainty about this matter, and to show reasons why cream should be properly cooled, an experiment was conducted recently at the Government Agricultural Experiment Station, Purdue, Indiana. Two cream routes with twenty patrons each were selected. Each route was divided into two parts; half of the patrons received cream cooling tanks, and the other half took care of their cream without the use of special tanks. The patrons with the tanks were instructed as to how they should be used, and a member of the staff visited these farms weekly to see that instructions were being carried out.

The cream was hauled to the creamery twice a week, that received from the patrons using the tanks being carefully kept separate from the cream sent in by the no-tank patrons. Both sorts of cream were scored by tasting and smelling, tested fo racid and bacteria, as well as for fermentation and sediment. Butter was made from the two kinds of cream in exactly the same way to the very last detail.

The records of this experiment bring out the following facts:—

Quality of the Cream

In every case the cooling tank cream, tested on reaching the creamery contained less acid than the no-tank cream; the average being .35 per cent, and .52 per cent. acidity respectively. This difference represents a reduction of acid, due to the use of of the acid contained in the no-tank cream. Furthermore the records show, that in every case the cooling-tank cream scored higher than the no-tank cream, the average scores being respectively 91.25 points and 88.75 points. In the case of tank cream the flavor was uniformly clean, while the uncooled cream had in most cases an unpalatable flavor; sometimes it was cheesy; at other times yeasty.

It was also shown that the use of cooling tanks reduced the bacterial count of the cream by 35 per cent., and cut down the number of yeasts and molds by 75 per cent. When it is considered that yeasts and molds are the causes of most of the unpleasant flavors, and the rapid deterioration of butter, the importance of this item is quite apparent.

Quality of the Butter

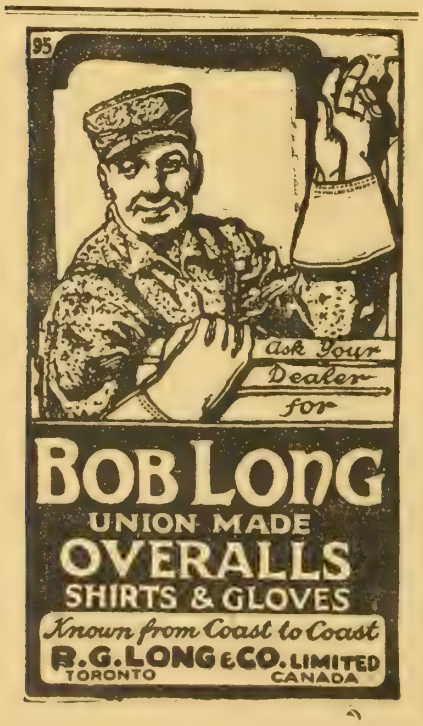
The butter made from the cooling-tank, and the no-tank cream, was carefully scored by two sets of competent judges. The important and convincing feature of this part of the experiment was, that in all cases, except one, the tank cream butter scored uniformly higher than the no-tank product. The average of all scores was 90.69 points for tank cream butter, and 88.36 points for no-tank cream butter—a clear difference of 2.33 points in favor of the tank cream butter. A difference of two points in the quality of butter, may not seem like a big item, but it means more than would appear at first sight. An 88 point butter is no longer considered good butter. It is disagreeable to the palate of the rank and file of the consumer, and so retards demand and invites competition from butter substitutes, and imported butter. Butter scoring 90 points or better such as even the dairy farmer can produce by properly cooling his cream, on the othe rhand, meets with the approval of the bulk of the consumers, and is considered good butter. In short this experiment has shown that proper cooling of the cream can readily make all the difference between butter which can be classed as good, and an inferior product.

In the matter of market returns, the average price received for tank butter proved to be a clear cent better than the average price for the no-tank product. This difference would undoubtedly have turned out to be greater, but for the fact that the month chosen for the test—August—proved to be exceptionally cool.

Cream Cooling Tanks

Providing a cream cooling tank on the farm need not be a very elaborate operation. A perfectly satisfactory cooling tank, big enough to accommodate two cans may be made out of an ordinary pickle or vinegar barrel which has first been thoroughly washed. A simple bit of a frame made out of three small boards at the top of the barrel, and a similar frame at the bottom of the barrel will answer to hold the cans upright. It is a very simple and convenient arrangement, to place this barrel between the pump and the tank or vat used for watering the stock, whether inside or outside of the stable; in this case all the water pumped for the stock is first used for cooling the cream.

To make a long story short, almost any farmer can, with very little expense, contrive some sort of an arrangement that will do the job satisfactorily. One other point should be noted, and that is, the tank provided should be big enough to take care of the cream from at least two milkings. If this is not the case, it will be found necessary to mix warm cream and cold cream—a practice which cannot be condemned too strongly, as cream so mixed will ferment very rapidly, with the inevitable result of giving an inferior product.



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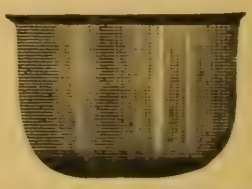
PURCHASE OF CANADIAN CHEESE BY BRITISH BUTTER AND CHEESE IMPORT COMMITTEE

Following the recent collapse of the cheese market, a representative of the British Ministry of Food (Mr. F. Warren) and the Chairman of the Butter and Cheese Import Committee (Sir Thomas Clement), associated with the Ministry of Food, London, England, were in Canada last week for the purpose of arranging for the purchase of 20,000 tons of Canadian cheese. They met the producers at Brockville on Thursday and offered 25 cents per pound delivered at Montreal. Sir Thomas Clement announced that a local committee to represent the British Butter and Cheese Import Committee would be formed in Montreal to arrange for the export of the cheese. The Canadian merchants who handle the cheese are to be paid a commission of 1½ per cent plus ¼ cent per pound to cover handling charges.

Taking advantage of his presence in Ottawa today, Mr. Warren was asked for a statement as to the reasons for the purchase and why they are unable to pay more than 25 cents per pound. His answer was as follows

"The maximum retail price of "cheese in Great Britain, including "the home production, has been fix-

PORTABLE



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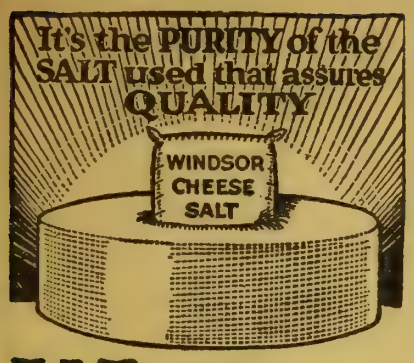

Windsor Cheese Salt
Made in Canada
THE CANADIAN SALT CO. LIMITED.
270

"ed by the Ministry of Food at 1/6 "(36c) per pound and there are sufficient reasons why the maximum "cannot be raised.

"The cost of handling the cheese "from the time it is delivered by the "Canadian producer at Montreal until it reaches the consumer in Great "Britain at the present time amounts "to 10.95 cents per pound made up "of the following items:

	Cents per lb.
"British retailers' profit (which includes loss in weight in cutting up).....	5.
"Commission paid to British Wholesalers and British Importers (average).....	1.5
"Inland transport in Great Britain	.5
"Storage and handling in Great Britain.....	.5
"Interest in carrying stock..	.5
"Loss in weight.....	.33
"Ocean freight and landing charges	1.75
"Discount	.25
"Commission paid Montreal Exporters	.37
"Montreal handling charges.	.25
Total $10.95	

"In addition to these charges the "British Committee will have to bear "the loss on account of the low rate "of exchange, which at the present "time is equivalent to about 2 cents "per pound.

"The British Committee will lose "on the Canadian cheese purchased "at 25 cents and this loss will have "to be met from the profits on pur"chases in other countries, or be"come a charge on the British Trea"sury.

The foregoing figures are confirmed by Dr. Jas. W. Robertson who has just returned from England.

There is no "fixing" of price and the Dairy Produce Commission will not be revived. Producers are free to dispose of their cheese through any other channels and at a higher price if that should be possible.

J. A. RUDDICK,
Dairy & Cold Storage Commissioner.
Ottawa, Ont.

DOES SELLING WHOLE MILK PAY?

Why is the farmer who sells whole milk to a condensory, or supplies it to the city trade, entitled to more money for his product than the dairyman who disposes of his cream only or patronizes a cheese factory? To answer this question satisfactorily several factors, such as convenience, roads, etc., all of which have a direct bearing on the matter, must be considered; but in a general way it may be said that selling whole milk off the farm entails a great loss in fertility, to replace which costs considerable at prevailing costs.

It should not be the aim nor desire on the part of any farmer to go on year after year mining his farm of fertility, leaving behind him rundown, worn-out land for those who follow in his footsteps. On the contrary, his ambition all through life should be to make an honest living and acquire from time to time what money may be required to clothe, feed and give his family what education may be necessary; moreover, to increase through his efforts greater value and fertility of his soil, so as to be able to hand down a more valuable heritage when he is through with it. To do this is not by any means an impossibility, in fact it is being done every year on many farms right here in Central Canada. However, this cannot be accomplished by the farmer who continues in selling whole milk year after year without spending money to buy fertility, either in millfeeds for his cows or commercial fertilizers for the land. The amount of fertility lost in selling whole milk in preference to cheese or cream means a difference of several hundred dollars annually in the case of a twenty or twenty-five cow dairy, for, according to investigations carried on by foremost chemists, the amount of fertility sold in cream is very small, and only about 50 per cent. in the case of cheese as compared with whole milk.

Another argument against selling whole milk off the farm is that the practice requires too much specialized work on the part of the farmer, for, as pointed out in the report of the Dundas County Survey, no farmer makes the maximum labor income without the use of side lines such as hogs, poultry, etc., to carry on which is rather difficult for the man who is shipping whole milk. All this tends to decrease the net profits and demand a certain percentage of the extra money obtained also is the question of raising calves, for whole milk. Coupled with that also is the question of raising calves, for there is a great loss sustained by the whole milk shipper in not being able to supply his calves with dairy by-products, which results in either the calves not being fed to the best advantage, and consequently not develop into choice dairy animals, or having to be fed whole milk. In the case of the latter, unless they are very they are actually worth. The outvaluable, their feed bill is more than they are actually worth. The outcome of the whole thing is that the farmer whose herd consists of grade cows, becomes careless about raising calves, preferring to buy milkers as needed.

That brings up another great difficulty, which costs the whole milk shipper considerable money during a period of say five or ten years. Good cows are very expensive and short-lived, but coupled with that is the great risk of buying animals affected with tuberculosis and contagious abortion. True, these dreaded diseases are not confined to herds producing milk for city trade only, but it is easy to understand that in the case of a home grown herd, where the animals are healthy, their calves raised stand a good chance of being the same, while another herd of equally healthy animals may be ruined by bringing in a few cows that carry disease. Tuberculosis can be detected if the cows are tested, but that is not always done with grades, but on the other hand contagious abortion cannot be detected before it is too late. It is a most serious situation and one that requires a great deal of careful thought before beginning, for, above all things, farmers cannot afford to court either of these diseases.

Any business which thrives must be continually improving, and it is very difficult to improve the milking qualities of the dairy herd if the cows are brought in as needed. Few farmers will sell their best cows, and once a certain standard of production is reached the yield becomes almost stationary. With a herd where young animals are being raised annually, the average yield can be brought to a higher level. By using a good, pure-bred sire the profit per cow can be doubled, as was proven by the Oxford and Dundas Counties survey. These things cost money, which must be met in the difference in price received for whole milk as compared with either cream or cheese.

The foregoing are a few of the obstacles confronting the farmer who forsakes the cheese factory or creamery, and in making that sacrifice he should receive increased remuneration. The loss of fertility, the difficulty of utilizing side lines, of growing hogs, calves, etc., the danger of bringing in diseases, the difficulty of increasing the production of the herd, must all come out of the price of the whole milk. And remember it is not all profit, as many farmers think, when they hear that their neighbor received a dollar per hundred more for his whole milk than they got at the cheese factory.

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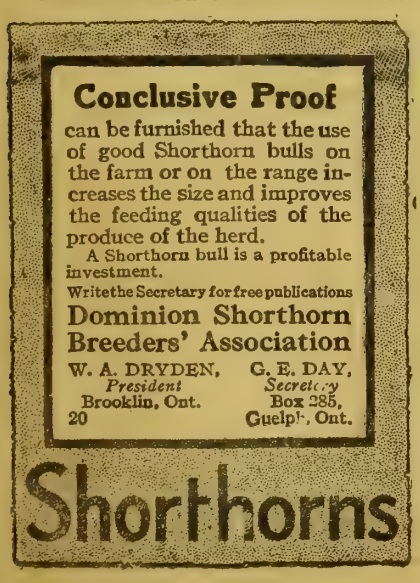
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Encouraging the Sheep Industry

INDUCEMENT TO USE A PURE BRED RAM AT THE HEAD OF YOUR FLOCK OF SHEEP

The New Brunswick Department of Agriculture are Co-operating with the Dominion Live Stock Branch in Encouraging the Use of Pure Bred Rams

Persons Eligible

Any sheep raiser who purchases a pure bred registered ram and who has not before at any time used a pure bred ram in his own flock shall be entitled to a premium of ten dollars the first year; Five of which will be paid by the New Brunswick Department of Agriculture and five by the Dominion Live stock Branch, and an additional premium of Five Dollars the second year, payable by the Live Stock Branch. Applications for premiums to be sent in to Live Stock Division, Department of Agriculture, Fredericton, not later than December 1st.

Co-operative Purchasing of Pure-Bred Stock

The Dominion Live Stock Branch will pay the travelling expenses to any point east of Fort William, Ontario, of any accredited man appointed by a Society, group of Societies or group of farmers who have orders to purchase at least twenty-five pure bred rams for farmers never having used a pure bred before. This same person has the privilege of making purchases of other live stock or rams for any farmer while on the trip, so long as the minimum of twenty-five rams are purchased as outlined above.

Grading of Pure Bred Rams in New Brunswick

The services of Professor Sackville of Ontario Agricultural College, have been secured to visit each pure bred breeder in the province and classify the rams offered for sale into three grades, superior—average and common. By purchasing your rams in the province, farmers can write any breeder of pure breed sheep and be sure of getting the class of ram he applies for. New Brunswick is the first province to adopt this classification system. Breeders and Purchasers stand to gain by it. The number of rams for sale together with the price and grade will be listed with the local Live Stock Division.

Boys' and Girls' Sheep Clubs

In order to create a deeper interest among our farm boys and girls in the business of sheep raising, arrangements have been completed to organize Sheep Clubs in the province. Members must be between ages of ten to eighteen years. Ten members will constitute a Club. Two grade Shearling ewes will be the number alloted to each. Members can get credit from any bank for purchase price of sheep for one year at 6% interest. The Department will arrange a fair at which prizes will be given. The Department will loan a pure-bred ram to any Club with twenty ewes.

For information on any of the above policies, write

Hon. J. F. Tweeddale,
Minister,
FREDERICTON, N. B.
Live Stock Division,
Department of Agriculture,
FREDERICTON, N. B.

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LIVE STOCK.

THE RESULTS OF CROSSBREEDING

The meaning of "crossbreeding" is not always definitely understood. As generally understood it means the mating of animals of entirely different breeds. The use of purebred sires upon scrubs or grades of the same breeding is usually spoken of as "grading up." There are always definite reasons assigned for this practise, but after all the underlying reason for crossbreeding most often is a curiosity to see what the result will be. Many times a breeder has a theory that the product obtained will combine the good qualities of each breed. Crosses of Jerseys are made with Holsteins in the hope that the resultant offspring will produce milk as rich in butter fat as that of the Jersey and in as large quantities as that of the Holstein. Crosses of hogs are expected to possess the prolificacy of one breed and the size of the other, and crosses of fowls are expected to possess the laying qualities of one breed and the size of the other. The result is just as probable that the heifers produced will give milk possessing neither the richness of the Jersey milk nor the flow of the Holstein, the hog produced be low in prolificacy and small in size, and similar results may follow with fowls.

The Usual Low Standard Practice

That crossbreeding is a continual experiment may be shown by observing the general practice of communities. The usual practice of those who crossbreed is, as soon as the theoretical result is not obtained, to try a cross with some other breed. The man who practices improvement by grading up ascribes the fault to the sire, when unsatisfactory results are obtained, and he straightway purchases a new sire of the same breed and thus his breed grows better from year to year. When poor results are obtained by the man who practices crossbreeding, a change of breeds is made in order to make the results conform with his theory. The live stock of communities where crossbreeding is practiced is always of low standard.

Grading up effects improvement. continued crossbreeding causes live stock to degenerate. Crossbreeding for the purpose of securing an intermediate between two breeds is unwarranted at the present time. Today there are many breeds of live stock representing practically all possible types. Some of these breeds have required over 200 years of selection to bring them to their present standard of perfection. In fact, those breeds are most perfect that have been selected for the greatest number of generations. The same principles that have been used in effecting breed improvement should be employed in improving the live stock upon each farm. The man who employs the grading up method of improving his live stock can have in three generations of breeding as good live stock of any particular breed for market purposes as are purebreds of the same breed. The first generation would be one-half purebred, the second three-fourths and the third seven-eights. A seven-eighths pure bred, whose parents and grandparents were selected for their desirable qualities, is as good for market purposes as pure-bred animals of the same breed. Such animals can not be recorded as pure breds, however.

Increased Vigor Without Crossing

It is true that increased vigor is very often obtained by cross-breeding but the fact should not be overlooked that the same vigor is obtained in pure breeds of live stock, That increased vigor is secured by crossbreeding has been proven by numerous experiments with grains by scientists, yet no greater vigor has been obtained than has been effected by mating unrelated plants and animals within varieties and breeds. Experiments that have been made in crossbreeding have not proven that crossbred animals are more vigorous than matings that may be made within the breed.

A close study of the different breeds of live stock will show that there are quite unrelated types within breeds where the differences of characteristics in conformation, quality and temperament are as great oftentimes as are the differences between breeds. If one wants to obtain increased vigor, then why not mate animals of the same breed but of different types and relationship? A cross will as truly be made as where animals of entirely different breeds are mated. Strong vigorous offspring will be obtained without the disadvantages of having them of broken colors and broken breeding.

Until the last few years it was not known why, when cross-bred animals were mated, the resultant offspring possessed a great variety of digerent characteristics. We now know that offspring from unrelated parents of dixerent types tend to be uniform in characteristics and also that when such cross-bred oxspring are mated they will be represented in the offspring, if they are numerous enough, by all of the characteristics that made up each of the breeds represented in the original cross. The fact should be borne well in mind that continued cross-breeding is always disastrous to

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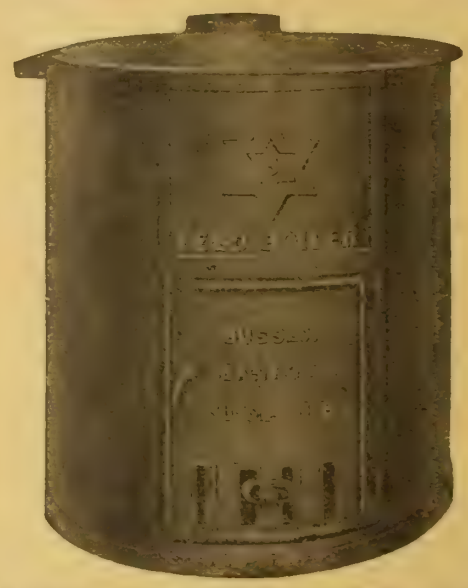

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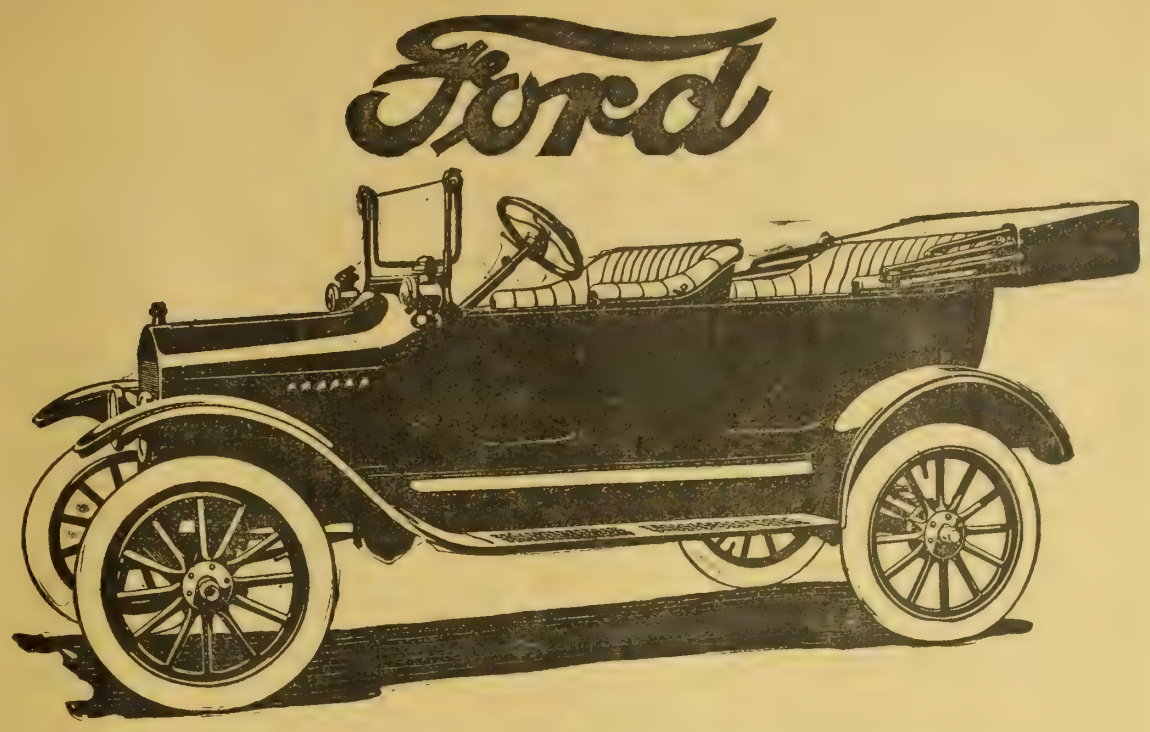
the live stock of any community. Uniformity of breeds is broken up and instead of progress being made the live stock of the community will represent the types of animals that existed two centuries ago. N. E. D.

GRADING UP THE FARM FLOCK
(Experimenta Farms Note)

In 1910 and 1911 a flock of Western range ewes was established on the Brandon Experimental Farm to be used as foundation stock in a grading up experiment. They were the usual type of range ewe, small and mean looking, showing a great mixture of breeding but with Merino blood showing up rather strongly throughout. These ewes were bred to a good pure-bred Oxford Down ram. When their lambs came to breeding age, another ram of the same breed was used and this line of breeding kept up consistently. The flock was increased about 50% in numbers at first, then bred at a uniform number each year. Each fall the least desirable of the ewes were culled out and the remainder kept for breeding. In the fall of 1916 the last of the original ewes were disposed of, and in the fall of 1917 all first cross eyes that showed in their appearance any sign of their mongrel origin were disposed of. Consequently the breeding flock in 1918 consisted of a lot of Oxford Down grades of uniform size and shape, all with dark brown faces and wool of uniform type. This complete change in the appearance of the flock was accompished in this short time simply by using each year a pure-bred sire. In this time the average size of the sheep was increased nearly 50% and the average wool clip about 30%. The first cross of Oxford on the range blood produced a sheep of decidedly Oxford character with an increase in size, but they were not uniform in appearance and many showed signs of the dam's breeding or lack of breeding. The second cross was a great improvement over the first, and the third cros resulted in a sheep that was practically indistinguishable from a pure-bred.

While the Oxford Down breed was used in this experiment, it is not the purpose of this article to recommend that breed above others. The range ewes were conspicuously lacking in size, and the Oxford was chosen particularly to increase the size. Other breeds that might have been used for that purpose are the Hampshire or the Suffolk of the Down breeds, or the Leicester, Cotswod or Lincoln of the long wools. Or, if breeding up is to attain more compact form, with earlier maturing, the Southdown or Shropshire might be used.

The results obtained in this experiment have been duplicated by many practical sheep raisers throughout the West. There is no reason why many others should not attain similar successes, changing their present nondescript mongrel flocks to fine, uniform, handsome flocks closely resembling pure-breds of the breed they choose to use sires from . The process is very simple, choose a good breed, buy good individual sires of that breed, stick to the one breed and reject the culls. This, with good general care, and feeding, will very quickly accomplish the desired result.



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SHE withstood everything in the field and above all was, and still is, the last and only car to survive until the cessation of hostilities"—Extract from letter received by Ford Motor Company from a British Soldier, in Africa.

Over shell-torn roads, through water soaked fields, second only to the tanks in its power to climb debris and crater holes, the Ford car made a world famous record in the fighting area of the great war. In press despatches, in field reports, in letters, in rhyme and song the praises of the Ford were sounded.

In France	-	700 cars out of 1,000 were Fords
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The Ford power plant that established this world-wide record in every theatre of the war remains the same. It will be in the Ford you buy.

Ford Runabout, $660. Touring, $690. On open models the Electric Starting and Lighting Equipment is $100 extra. Coupe, $975. Sedan, $1,175 (closed model prices include Electric Starting and Lighting Equipment). Demountable rims, tire-carrier and non-skid tires on rear as optional equipment on closed cars only at $25 extra. These prices are f. o. b. Ford, Ont., and do not include War Tax.

Buy only Genuine Ford Parts. 700 Canadian Dealers and over 2,000 Service Garages supply them. 119

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COST OF SHIPPING LIVE STOCK TO FOREIGN COUNTRIES

Data on the cost of shipping cattle to foreign countries is furnished by the Market Department of the Bureau of Animal Industry at Washington. The cost of a shipment to Antwerp, Belgium, amounted to $125 per head, of which $100 went for transportation, $8.50 for insurance, $13.50 for feed and $3.00 for transportation and meals of attendants. The animals were grades intended for slaughter. Another shipment sent in June showed a total expense of $129.75 per head. South American shipments cost considerably more. A June shipment of Shorthorns to Uruguay figured $180 per head for the cow, for transportation alone, $105 for insurance, $75 for fittings, $20.25 for feed and $25 for attendants. The same transportation charge was made for a shipment of Shorthorns to Argentina, cows and heifers being figured at $180 per head while calves were taken at $90 each. From these figures it will be seen that grade Holsteins being purchased for foreign shipment will have cost considerable money before they reach their final destination on the farms of France.

GROUND GLASS NOT HARMFUL

Experiments recently carried out by the Army Medical Corps have entirely disproven the popular belief that ground glass is harmful to the digestive tract.

Glass was ground and sifted to secure varying degrees of fineness and considerable quantities of the material were incorporated in fresh meat the same being fed to hungry dogs. This was repeated in some instances on a number of days after which the dogs were killed and the digestive tract examined both with the naked eye and by the aid of the microscope and no injury whatever was perceptible. Before being killed the dogs apparently suffered no inconvenience and appeared normal in every way.

These findings should eliminate for all time the idea of glass being the cause of death in animals maliciously poisoned.—W. H. Feldman, Colorado Agricultural College, Fort Collins, Colorado.

The boy with a pig of his own today is the livestock man of tomorrow—provided his father does not beat him out of the money the pig brings.

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OR PAIN KILLER FOR THE HUMAN BODY
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IT HAS NO EQUAL
For the Human Body —It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Exterior Cancers, Boils Corns and Bunions, CAUSTIC BALSAM has no equal as a Liniment.
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We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.
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THE HORSE

DEFECTIVE EYESIGHT IN HORSES DUE TO DARK AND BADLY VENTILATED STABLES

Many of the diseases that afflict the eye of the horse are due to the conditions in which horses, as a general rule, are subjected to in their domestication. If there is a strong preidsposition to disease in the eye of the horse, it is generally assisted by the heated and poisoned air of many stables. The heated air has a great deal to do with the production of eye troubles, especially inflammation, but poisoned air has a great deal more; for everyone must observe on entering a close stable early in the morning strong fumes of ammonia, which are painful to the eyes and make them run with water. It can be easily recognized what the constant action of this state of air has upon the horse's eyesight. The manure and litter of the barn often become heated and in odd corners of the stalls they get putrid through neglect in cleaning them out thoroughly every day, thus giving off fumes that encourage the rapid development of eye diseases. Very soon after the urine of the horse has been voided and where there is not immediate drainage away, it also gives off a pungent gas that is detrimental to a horse's general eyesight. If we are scarcely able to bear it when we stand in the stable for only a few minutes we need not wonder at the difficulty of abating inflammation in the eye of the stabled horse while it continues to be exposed to such painful conditions.

Eye Disease From Dark Stables

Horse owners may not be aware of another cause of inflammatory disease to the eye which horses are particularly exposed, viz., confinement in a dark stable.

Many barns in which horses are confined have no adequate provision to ensure sunlight into every corner, and horses are subjected to almost total darkness all the time when once the door is shut on them. Consider what are the horse's sensations when he suddenly emerges from a dark room into the full glare of the light he is dazzled and bewildered, and some time passes before his vision is distinct.

Let this be repeated several times a day, in bright sunshine of the summer or the glare of the winter's sun on the snow, and what will be the consequence? The sight will be disordered and the eye irreparably injured. This is happening to many horses day after day and year after year, where total darkness prevails in the stable.

It is a well known fact that most of the diseases that arise among all domesticated animals is due mostly to the housing conditions they are subjected to. Tuberculosis, the dreaded scourge among humanity and cattle, is fostered and spread through crowded and badly lighted homes and barns, and to the same degree can be assigned the causation and spread of eye disesases and influenza among horses.

The propogation of eye diseases from sire to his progeny, has also not been sufficiently considered by breeders. Let a stallion that is blind, or whose sight is defective, possess every other point and quality that can be wished, yet he is worse than useless; for a very considerable proportion of his offspring will almost assuredly inherit his weak eyes, or become totally blind. This is a fact established beyond doubt.

White Spot on the Eye

For cloudiness or white spots on the lens, which generally follows inflammation, ignorant owners and horsemen often resort to barbarous customs to remove it with chalk, salt, sugar, and even pounded glass, have been introduced into the eye mechanically to rub off the film. Such harsh and cruel treatment only recalls the inflammation, and immediately inflicts excruciating pain. The film is not on the surface of the cornea, and therefore not capable of being rubbed off.

The pupil fo the horse's eye is seldom black, like that of the human being, and its greyish hue conceals the recent film which may be spreading over the lens. In many instances in which the sight has been evidently affected or almost lost a different opinion of the condition of the eyes has been given by very fair judges. A soothing eye wash for chronic cases of sore eyes is made up as follows: laudanum, two drachms; extract of belladonna, one drachm; water, one pnt. Do not use the common eye wash, sugar of leod and water, as it leaves a dull leaden deposit on the eye ball, which is a permanent blemish.

Shying

Shying in a horse is very often more a symptom of defective eyesight than it is the result of a vicious habit. This has been proved beyond contradiction. A horse will manifestly mistake the nature of the object before him; he will run against that which he should have seen; or he will be terrified by a tree or bird, which should not have caused alarm. Against the misconception of a shying horse there is no defence. Horses grow shy as they grow old, and no intelligent person will be slow in attributing it to the right cause, a decay in the organ of vision through loss of convexity in the eye. There is a striking difference in the convexity of the cornea in the colt and ahe old horse; both of whom shy from opposite causes; the one from cornea too prominent and the other from one too flat.

In the treatment of shying, it is of importance to distinguish between that which is the consequence of defective sight, and that which results from affectation or skittishness. In any case severity is out of the question. If the horse is forced, by lashing of the whip, up to the object, the dread of punishment will afterwards

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be associated with that object, and on the next occasion, his shying will be more dangerous. On the other hand a horse if handled in a humane manner will come to have confidence in the man who drives or rides him. But it should be remembered, however, that although a horse that shies from defective eyesight—may be taught considerable reliance on the man who is guilding him, he can never have the cause of the habit removed. The human sight can be artificially strengthened, but the horse's must be left to itself. Selection in breeding, and well lighted and well ventilated barns are the preventative measures to insure horses against eye disease and defective eyesight.

HORSE CARE CALENDAR.—NAIL IT TO STALL OR POST

Do not fail to provide clean, warm quarters in which your mares can bring forth ther young. Naval ill comes from dirt.

It is dangerous to expose young stock, especially foals and colts, to spring rain storms. A day's exposure if not fatal, may stop a month's growth.

It is bad policy to turn the stock to pasture before the grass has well started—bad for the pasture and bad for the stock.

When the pasture season begins, turn the stock out at night, instead of in the morning. Then they will feed through the night, and not lie down untl the sun has warmed the air and the ground.

Get your horses into conditioon for spring work, the young horses especially. Many a colt has been ruined by being put to hard work without preparation. It is the same with green horses.

In warm weather thorough grooming is almost as important as feeding. Without it, dried sweat, dead skin, and dirt cog the pores, make the horse uncomfortable, and affect his health.

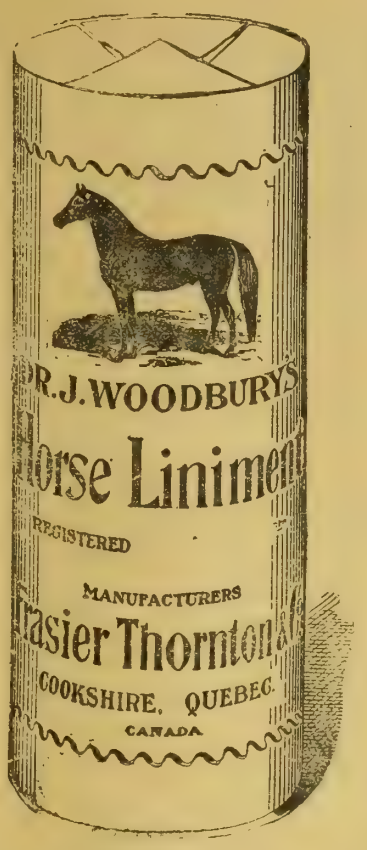
Look out for sore shoulders and backs, especially in plowing. Be sure that the collars fit. A collar too big is as bad as one too small. If the collar rides up, use a martingale, or a girth running from trace to trace, back of the forelegs.

When the horses are at work on a warm day, lift up the collars now and then to cool their shoulders, and wipe off the sweat and dirt with a bunch of grass.

Wipe off the harness marks on your horse when you stop work at noon and at night, and clean the inside of the harness, the collars especiallq. The salt sweat, drying on the skin and on the harness, is what makes the trouble.

If the skin is wrinkled under the collar or saddle, bathe it with diluted vinegar or witchhazel. If the skin is broken, bathe it with clean, warm water containing a little salt. Fix the collar, with padding or otherwise, so that it will not touch the sore spot the next day. A little carlessenss at the beginning may cause a lot of trouble to you and suffering to the horse.

Clean your horses at night, water them, give them a good bed, and water them again after they have eaten their hay so that they will not be thirsty all night. Let them rest an hour or more before they are grained. The observance of these simple rules will not cost you a cent, and will make a big difference in their condition.



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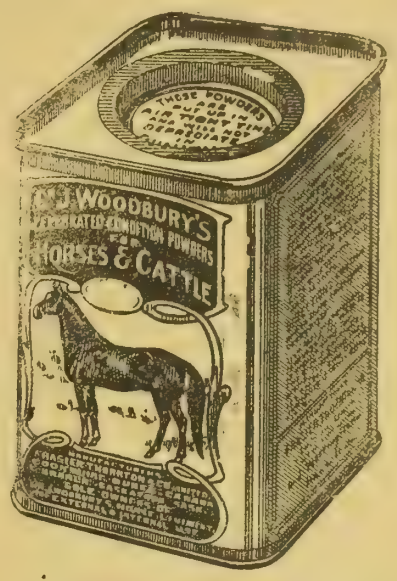

REARING ORPHAN FOAL

I had a mare that died from sunstroke and left a young colt. It is one month old and it eats hay and a little oats. I give it milk with a little water in it. Am I treating it in the right way?—S.

Cow's mlk furnishes the most logical substitute for mare's milk, and the only available in most cases, but it is well to realize that as the composition is somewhat different, certain changes and modifications have to be made in order that the substituted diet shall not be too dissimilar from the natural mare's milk. The following table of percentages gives the average composition of the two kinds of milk:

	Milk from Cow Per cent.	Mare Per cent.
Water	87.17	90.78
Protein	3.55	1.99
Fat	3.69	1.21
Sugar	4.88	5.67
Ash	.71	.35

To make milk from the cow as near like that from the mare, the milk should be taken fresh from the cow and diluted with about one-fourth of pure water. A tablespoonful of lime water shoud be added to each pint of the diluted milk and the mixture should be given the orphan foal at about body temperature.

In feeding a young foal that loses its mother at birth, one-half of a teacupful of the milk should be given each half hour, the quantity being increased slightly and in the intervals lengthened gradually as the foal grows older. When the cot is about two months old, skimmed or separated milk may be substituted for the whole milk, and by this time one of the following rations should be fed alone with it:

1. One part of linseed meal boiled to a jelly and mixed withe two or three parts of bran.

2. Two parts of ground oats and one-half part of linseed meal, the latter boiled to a jelly.

3. Two parts of bran, two parts of oatmeal, and one part of oilmeal.

A double handful a day should be fed to start with and gradually increased. The foal should have company, and a calf is good for this purpose. A grassy paddock to run in must also not be forgotten.

CURRYING HORSES

Every healthy horse delights in rolling on the ground after a hard day's work, as soon as the harness is off. He is tired and sweaty, and his nerves ache for a touch of the ground, soothing to the skin and muscles.

A good roll is helpful and restful, but it does not do all it should do to rest a horse after his hard labor. It can easily be improved upon by using a good brush and currycomb. If he is sweaty and lathery, have a rubber similar to a window washing rubber, and rub him nearly dry. Then curry him and bursh him, and when he rolls, he will feel almost like a new horse.

We all know how a good bath rests us after a hard day's work. Currying a horse has practicall the same physical effects upon him as a bath upon a man. It soothes the skin, rests the nerves, cleans his coat and stimulates his circulation, so that his heart lungs and muscles can take full advantage of the night's rest.

HOOFS ARE BRITTLE

I have a horse, five years old, with very brittle hoofs, that will not carry shoes. What can I do for them?

This condition of your horse's hoofs is often found in diseased feet or where the peripole has been rasped off the hoof wall at shoeing. For diseased, brittle feet, a hoof ointment is very useful. Liquid tar, beeswax, honey and glycerine, of each an ounce lanoline and vaseline, three ounces each, is a useful preparation. The grawth of the hoof will be stimulated by repeated mild blistering. Liquid contharides is a very useful preparation for this purpose and should be rubbed into each coronet for about three minutes. The coronet is that part of the foot where the hoof and hair meet. In order to obtain good results, it is essnetia to anoint the part daily, after the blister has been applied with colza oil. The blister may be repeated after a month.

REMEMBER THE TIRED HORSE

When a horses' strength has been overtaxed, he must on arriving at the stable, receive special attention or wors etroubles may be in store. The first thing after he is unharnessed is to clothe him an dif possible, quickly have some gruel prepared. As soon as he has taken this, or while it is being prepared, if the ears are cold and drooping these must be gotten warm by friction. It is wonderful what an effect this will have in restoring a horse, a moderately tired horse wil soon become a different animal, showing evident appreciation of the process by holding his head down to receive the rubbing. No attempt at grooming should be made until the gruel has been taken and the ears are warm. In the course of an hour the grooming may generally be completed but not time should be lost in it, and the skin must on no account be allowed to chill. After it has ben been done the usual feed of oatts and hay can be given.

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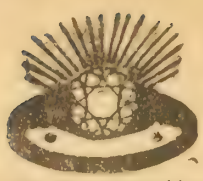

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POULTRY.

WHAT GOOD SHOW BIRDS ARE

Having assumed that the farmers of Maine, who have been raising some good poultry this year, or even last year, the question arises, what are the birds that are suitable to show and stand a chance of winning prizes where there is sharp competition? In the smaller fairs it is likely that very little attention is paid to standard methods, but at the larger fairs the judges will likely to adhere pretty closey to the rules laid down in the Standard of Perfection for those varieties included in that book.

Show birds the not necessarily the best breeders or the best layers, but they are the birds which best conform to the type which they represent, as laid down in the standard. For instance, the bird must be of proper shape and color, must have a perfectly formed comb, is single, except in one or two of the breeds rare in Maine, there must be five distinct points and no more. The legs, beaks, wattles and ear lobes must be of the proper shape, size, and color, or the bird is likely to be disqualified or at least subejct to score cutting for so many slight defects that it will stand no chance of winning. One or two small feathers or sprigs on legs where there should be none, are sure to throw the birds out altogether, as also do one or two colored feathers on a white bird. This does not mean that such feathers can be plucked, for indications that such feathers have been removed will just as surely disqualify the bird. There are so many little things that either disquaify or at least count against birds that are really fine birds, that each breeder before exhibiting single birds or pens should make a careful study of the requirements for his particular breed or breeds, so that he may be able to pick the birds most likely to win, which he cannot do without accurate knowledge of the requirements of the standard.

Shape, weight, color and comb may be singled out as the four cardinal points in determining the qualities of a bird for show purposes. Shape is of great importance, and means proper form for the breed in all sections. A bird of Wyandotte type cannot hope to win in the Plymouth Rock class, no matter how beautifully it may be barred or colored. It is just as true that a bird which is considerably under or over weight cannot win where there is much competition, and, ordinarily speaking, birds scoring under 90 points out of the 100 must be discarded, even though the best birds in the class shown. Color is also of the utmost importance, and unless the birds are of solid color, the right arrangement of color must exist in all sections to assure any degree of certainty of obtaining even honorable mention, for breeding for colors is so carefully done nowadays that properly colored birds are not too rare to be found in competitions almost everywhere.

As to comb, that too, must conofrm to the rules as to size, shape, number of points, smoothness, spike, and general qualities and birds, especially male birds, with poor combs, however good otherwise, are often discarded altogether at the start, and if not really disqualified, are at once looked upon with disfavor by the competent judge. What every breeder needs to do is to study the standard and then breed as closely to its requirements, buying only birds that are close to it, and breed for improvement wherever he can see the need of, particularly making it a point to observe the superior points of the birds which win over his. But every farmer who has good birds will gain by showing them, whether he wins any premiums or not. Experience is the best teacher.—H.L. Goodwin in the Maine Farmer.

THE WATER GLASS METHOD

The watre glass method is the easiest and cheapest way to peserve eggs for home use. Water glass is a somewhat alkaline substance that can be bought at a feed or drug store. When diluted it will not injure the hands. A gallon will preserve from 80 to 85 dozen eggs.

Use infertile eggs preferably, and preserve within 24 hours after laying if possible. The fresher the egg, the better the result. Use clean eggs, but do not wash them.

A five gallon jar will hold about 15 dozen eggs. Sterilize the jar with hot water. Mix the water glass with water that has been boiled and then cooled to an ordinary temperature. some receipes call for one part of water glass to nine parts of water. A proportion of one to 14 has been found to be successfu, and is cheaper. Be careful to mix thoroughly, since failure often comes from careless mixing. If the jar is about half full of the diluted water glass, a few eggs may be added each day until the jar is full. Have about two inches of water glass above the top layer. Keep in a cool, dry place like a preserve closet.

CANADIAN EGG LAYING CONTEST

The Egg Laying Contests throughout the Dominion are attracting considerable interest. Already the entries are being rapidly filled by birds from all classes of poultry breeders. The fancier and the commercial man are being represented as are also the backyarder and the farmer, the old breeder and the amatur. Canadians are not going to have it all their own way either for both the United States and England are going to be represented.

The Dominion Experimental Farm is conducting no less than seven contests this year reaching from Prince Edward Island on the East to Alberta on the West. At Ottawa will be held the "Canadian" open to the world. Other contests will be conducted at six of the Branch Farms throughout the Dominion. The farms selected are Charlotteown, P.E.I.; Nappan, N. S.; Cap Rouge, Que.; Brandon, Man.; Indian Head, Sask., and Lethbride, Alta.

All contests start November first and continue for 52 weeks. Application must be made to Dominion Poultry Husbandman, Experimental Farm, Otawa. The time of receiving applications has been extended to October 15th.

MANGELS AS GREEN FEED

Mangels make one of the best winter "green" feeds for poultry. They are easy to store in any place suitable to the storage of other vegetables. Pits are good, but are often hard to get at when the ground is frozen. A root cellar is best. When to be fed, the mangel should be split or cut and hung on a stout wire just above the heads of the fowls so as to encourage exercise. It is better to give only what will be eaten up clean each day rather than to clog the fowl's appetites by having too much and having part spoil or freeze.

If you are not raising good chickens don't blame the birds, but find out where you are at fault.

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Heart and Nerves So Bad

Walked Floor All Night.

Nature intended women to oe strong, healthy and happy as the day is long, instead of being sick and wretched. The trouble is that they pay more attention to the work they have to do than to their health, therefor they become run down, weak and miserable. Milburn's Heart and Nerve Pills are the remedy that these nervous, tired-out, weakly women need to restore them to perfect health and happiness.

Mrs. Fred Lee, Almonte, Ont., writes: "My oldest daughter was so bad for over a year, with her heart and nerves that she was compelled to give up her work. I was very discouraged about her, as I had her to two doctors, but they did her no good. She could not sleep at night; would have to walk the floor, and felt as it she would go out of her mind. One day a friend told me to use Milburn's Heart and Nerve Pills, and I cannot speak too highly of them. She used three boxes and is feeling fine. She started back to work two months ago."

Milburn's Heart and Nerve Pills are 50c. a box at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

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LEG WEAKNESS IN CHICKENS

Leg weakness in chicks may arise from more than one cause. One of these may be improper feeding. Another is keeping them too warm. Another is bottom heat in a breeder. Contrary to general opinion, chicks are not very delicate under natural conditions. I have known a hen to lead chicks through snow up to their bodies. Where hens steal their nests and hatch, the chicks get to the ground the first thing after they leave the nest. Little chicks should be kept where they can run on the bare ground at least a part of the time. They need sunshine also an da chance to get out in the open air.

We have never taken any particular pains to keep our chicks very warm. From the very first they are allowed to run out of doors as much as they wish. When they are raised in brooders they can have an outdoor run where they can get to the ground, and are out every day unless the weather is story. It is a pretty cold day when when chicks will not run out a good part of the time. If they get cold they run into the brooder and cuddle around the tank, but not longer than until they feel warm again, when they will be out digging in the chaff in their open run.

Well-fed chicks can endure quite cold weather and thrive. For many years we have fed prepared chick feeds and milk to our chicks with perfect success. Last spring was not a very warm one with us. We did not use incubators last year, and we allowed the hens that had chicks to run out with their broods every day after the chicks were four or five days old. If we lost as many as half a dozen chicks during the whole season we never discovered the fact.

We use prepared feeds because they are carefully mixed and made up of a larger variety of grains than are available with us.

At one time I made my own feeds. Taking the tables of feed analyses that I found in farmers' bulletins I found that a mixture of 45 pounds of cracked corn, 45 pounds of cracked wheat and 10 pounds of meat-scrap made a perfectly balanced ration for young chicks or laying hens. For two o rthree years I used this. We are now using prepared foods, and we have never found any difference in the feeding value of the different feeds.

We give our little chicks milk from the first day, all they will take. Sometimes the milk is sweet and sometimes sour, and sometimes it is buttermilk. We give them grit from the first and about our place there is always plenty of oyster shell lying where all the fowls can get it. We feed meat-scrap al lthe time to all our birds, old and young, and usually have a hopper full of bran where it can be got at. No matter how well fed a flock of little chicks may be, they will dig and scratch all day around the grass roots if they are allowed to run out. I have never been able to determine what they find that keeps them busy and have sometimes thought they pick up minute bits of sand. Whatever it is, they keep picking and digging and the exercise is certainly good for them. A good many young chicks are killed by mistaken kindness.

MILLER PURVIS.

CHICKS FIRST FEED

Much of the trouble often found in brooding chicks is due alone to feeding too early, or in excess during the first few days. In nature's way of brooding very little feed is secured by the mother hen for the first two or three days. Just here and there a weed seed, a morsel of tender grass, or, perhaps a worm. The chicks are contented, for they are almost continuously hovered by the mother hen, because natural instinct tells her that her babies should be carefully brooded until they have become strong enough to chase about. This, usually, is at least two or three days. But with the brood of chicks in the brooder it is natural for the attendant to wish to see them picking at the feed so easily scattered, and, fearing lest they should become hungry, in nearly every case they are fed too much at the beginning. We have never known a brood of chicks to be damaged from withholding the feed.

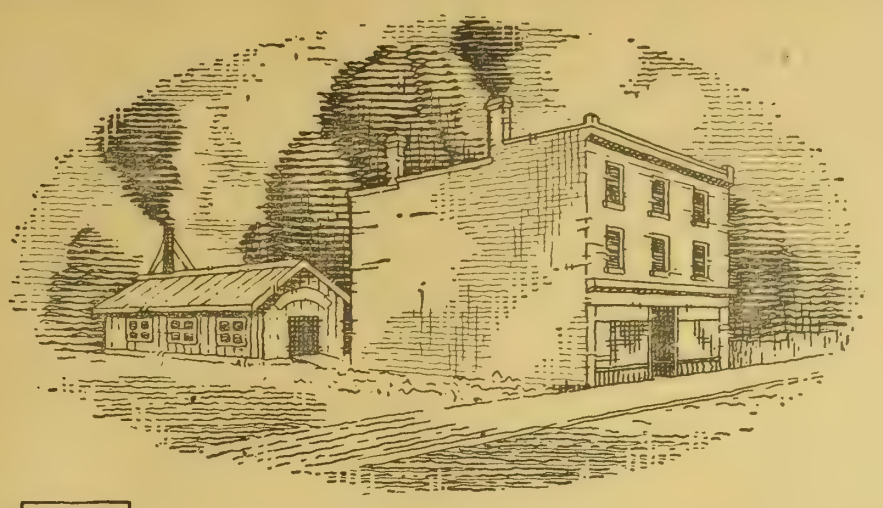
MARKET THE COCKERELS

Poultry keepers will find it more profitable to market young cockerels when they reach a weight of 2 lbs. rather than to feed the birds until late fall or early winter. Experiments show that at least 10 pounds of grain must be fed to produce a pound of gain and it is doubtful whether grain should be utilized for meat production through poultry.

On the average the feed necessary to grow birds to maturity will cost four cents a pound; thus unless the poultry producer has a special market for the heavier birds the price secured next fall may not pay for the feed given the fowls. Young cockerels marketed now as broilers generally bring an attractive price; then the flock may at once be fed with a view of developing winter-egg producers.

SKIM-MILK IS GOOD FOR CHICKS

According to on Ohio Experiment bulletin, the value of skim-milk as a food for growing chickens cannot be overestimated nor its cheapness and efficiency questioned. The reason is that skim-milk is a complete food in itself, and contains all nutrients in an easily digested form, which is very important for young growing animals. It promotes growth and insures a heavier increase in weight in a given time than could be otherwise obtained.



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using every practical form of fuel—electricity, gas, oil, coal and wood.

This success—this healthy growth over such a long period of years—could come only from fair dealing with the people. On any question regarding heating or cooking appliances, what better source of advice could you seek than McClary's.

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"Service from the Kitchen"—About the Kootenay Steel Range.

"Magic of the Pandora"—About the Pandora Cast-Iron Range.

"Comfort in the Home"—On heating with the Sunshine Furnace.

"Satisfaction"—Dealing with McClary's Gas Ranges.

"McClary's Electrical Appliances—On cooking with electricity describing McClary's.

"Household Helper"—Describing Florence Automatic Oil Cook Stove.

"The Story of a Range"—McClary's Simplex Combination Coal and Gas Range.

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N B. solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

What is the grandest work of all—
Is it winning Heaven some day?
No. and a thousand times say no.
It is making this old world thrill and glow
With the sun of love until each shall know
Something of Heaven here below,
And God's "Well done!" for our pay.

JANET GROWS UP

(By Montayne Perry)

"You're quite sure you're through with the paper I want to talk to you," said Janet, "but don't let me hurry you."

Frederick Reeves flung the sporting edition to the floor, and surveyed his wife amusedly.

"Do I detect a tinge of irony in those last words?" he asked. "I've been only fifty minutes over that paper—and when you think of the number of yards of printed matter in a Sunday edition, that's not so bad. Oh, but I love the Sabbath day, Janet: late breakfast, and a house-coat and laziness and—you."

"That's an artful finish," declared Janet, "but as I said before, I want to talk to you."

"Oh, very well," resoignedly. "Of course a husband and father must expect to bear some responsibility, as you remarked the other night when the electricity went off without warning. Is this something that I'm as much to blame for as I was for that unilluminated evening?"

"Don't be silly," she laughed. "This is nothing you've done, or failed to do—it's about me."

"Then I'm interested!" he affirmed promptly. "Out with it—why keep me in this agony of suspense, woman?"

To his surprise her laughter did not respond. She perched herself on the arm of his chair, looking down at him with eyes that were wistfully serious.

"Fred," she began, "what was there about me that you loved, at first? Why did you fall in love with me?"

"Because your hair was curly!" he respondeed without a second's hesitation.

"Oh, but that isn't a reason—you don't love a girl just for curly hair!"

"You don't continue to love her just for curly hair. But you fall in love with her for exactly that reason—curly hair, or dimples, or the way she wrinkles up her nose when she laughs. Of course, love won't abide unless the girl's character has—has curls and dimples."

"And wrinkles!" she finished scornfully. "Well, then why did you continue to love me?" Without waiting for a reply she went on, rather breathlessly, answering her own question: "It's because your mind's in a rut—that's why. I'm—I'm just a habit!"

"A habit. Heavens, Puss, don't speak of yourself in that tone, as if you were some sort of a drug. What's it all about?"

"I ought to be doing something—broadening out, and keeping up with you," Janet declared, brushing away his levity with a little impatient gesture. "I shoud be making a place for myself in the world. 'Frederick Reeve's pretty wife' is what folks call me."

"Well, it's what you are. What's the matter with that? Don't you want to be my wife? Isn't that occupying a perfectly good place in the world?"

"Being your wife doesn't give me a place in the world, or it shouldn't. Being a wife isn't a profession, it's a—a—condition. Is being a husband your work in the world? Then why didn't you give up the practice of law when you married me? How would you like to be called just Janet Reeve's handsome husband? I've got to be an individual, an—an economic factor!"

"For the love of Mike!" Reeves murmered inelegantly. He stared up into his wife's pretty face, with unaffected wonder. "What's that, Puss? An 'economic factor'? Now where did you learn such expressions, young lady? You've been reading something!"

"Well, why shouldn't I read something? Do you think I have no b-b-brains? To his utter consternation her voice broke in a sob.

Swiftly he gathered her in his arms kissing the wet eyes, smoothing the beloved curls contritely. "I didn't know it was serious, sweetheart," he soothed. "Now begin all over again. What's happened to upset you like this?"

"It's been coming on for quite a while, I guess," she confessed. "You see, it's in the very air now, all this talk about woman being independent and making her own place in the world, and holding a man's affection because she can do the same thing he can, and not being just a Mrs. Somebody. And, of couse, I always read Molly's magazine, and that's full of new-womany stuff, and altogether I've come to see that I'm not doing what I ought to do, really, dear. I should be standing on your level."

"Heaven forbid!' interpolated Frederick fervently, but Janet went on, regardles of the interruption: "So I've thought it all out, and I know just what I'm going to do, and it needn't interfere with our home in the least."

Through the man's mind danced visions of Janet as a feminist; Janet bent on studying medicine, maybe, or or law, or going in for politics, Janet with an office in town, rushing for the seven-fifteen with the commuting mob; Janet in tailored suits and stiff linen waists, swallowing her breakfast with one eye on the clock, instead of dallying over her coffee in distracting negligee; Janet and business—could anything be more incongruous?

"I'm going to be a writer, because I can do that at home—I'd hate going to town every day. I shall keep office hours, and tell Marie never to disturb me except for something of life-and-death importance—like Junior swallowing a button or having croup. Writing is a dignified profession and one of great financial possibilities, and lifts a woman far above the petty details of every-day life," her voice became a bit stilted on the last words as if she were quoting "Molly's magazine."

A vast relief flooded the husband's soul. A writer with a studio at home! The disquieting visions fled. Instantly there sprang into action the tact the broad vision, the ability to understand and to guide human emotions which had placed Frederick Reeves in the front rank of the legal profession. A lesser man would have told Janet that home-making was a dignified calling and that the bearing and training of Frederick, Junior, established her status as an economic factor; that her busy, happy, love-filled days were far from fruitless; but none of these things did he suggest. He patted the curls and cried enthusiastically:

"The very thing! Let's fix up your studio right now! Then you can begin to-morrow morning."

"Oh, Fred—you're the darlingest! Do you think I can write?"

"Why not? Look at Molly! Aren't you her sister?"

"Oh, but Molly's so clever. And she's always been doing things, you know. I'm perfectly sure she will say I can't write."

"We'll show her!" he declared. "If she discourages you, we'll sell your first story to her deadliest rival!"

For an hour they worked in the big room on the top floor, until rugs, desk, books, pictures, even pens and blotters were in proper places. Then, as Janet hurried away to her small son, Reeves went into the library. He closed the door carefully before he lifted the telephone receiver.

"Hello," he said presently, "that you, Molly? You're coming to dinner, aren't you? Well, I just wanted to tip you off, before Janet springs anything on you—see? She's got the queerest freak! Been reading your magainze too much, I guess. Janet has decided to become an economic factor—her self-respect demands it. What's that? Well, it's your own fault. She's going to be an author. What? No, you mustn't settle that—you'll agree to it—get me? Where's your judgment? Don't you know that opposition is meat and drink to a woman's hobby? That is a perfectly safe and sane proposition, one that she can play with at home, all safe and comfy, until it wears itself out. All right—'by."

"She wants to write!" she murmured. "Janet wants to be an author! Now what does the child think she could write about? What does she know about life? Didn't I guard her from everything until Fred took the job off my hands? But hasn't he a lot of tact and judgment—for a man! Of course his plan is right. Let her little flurry of ambition die its natural death."

So when Janet rather tmidly approached the subject of her heart's desire that evening, she found, to her surprise, that her gifted sister was something more than sweetly sympathetic; she was distinctly encouraging.

"You're just a dear," Janet declared, with joyous relief. "I thought you'd try to squelch me. I expected you to say, 'Why can't you be satisfied with your home and Frederick and Junior? That's enough for you to do.' For you know, Molly though you do print all those things about women having economic independence, you've always made just a regular old-fashioned clinging vine of me."

Molly colored a little, hearing Freds appreciative chuckle. Inwardly, this clever and efficient young woman was always conscious that Mary Slade Mason, editor, was a distinctly different person from Molly Mason, sister—but she was surprised to hear Janet voice a knowledge of the fact. She spoke quickly to cover her confusion:

"I quite understand, dear. You've been married five years, and Junior is three years old, so you have had time to get your home affairs to running smoothly. Having a maid and a nurse, you find yourself with a lot of unoccupied time which might as well be put to some real purpose."

"And you think I can write stories?"

For an instant, Molly the sister, struggled with Mary the editor. It was a sisterly answer tempering of editorial judgment:

"Of course you understand that it takes a lot of work, and practise, to produce anything which is salable. I don't believe I'd try stories just at first—short stories are the most difficult things to write, you know. One has to work up to them."

"But I certainly couldn't write anything except stories, Molly. I'll have to write about men and women and—and—oh experiences, you know. Marriage problems and things like that."

"But those stories are written by folks who have some knowledge of life's problems. You know, Janet, you've had no real experience with the big issues of life. One has to know about things in order to write convincingly. But I wouldn't bother about that part yet. When you have learned to tell a story, you can decide what particuar kind of things you will do."

"I thought the way to tell a story was just to tell it," stated Janet, a trifle rebelliously.

Molly's ready laughter cleared the air, "I wish all my contributors thought the same thing, little sister," she declared; and the discussion closed amicably.

Mary Slade Mason, editor, began on a heap of unread manuscript with a sigh. She glanced at the opening sentence of one, turned to the end and

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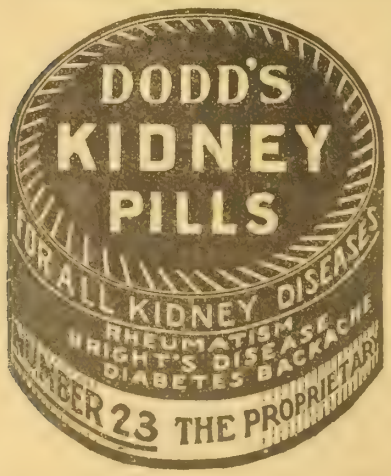

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skimmed the last page; threw it down with a gestture of hopelessness. The next met a like fate, and the third, and the fourth. But on the fifth one she re-read the last page, dipped into the middle for a paragraph or two, and turned back to the beginning and read the whole slowly.

"There's the feature story for my fiction number!" she exclaimed. "It's the best thing that has fluttered in here this year!"

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DAVID HENDERSON,

Belleisle Station, Kings Co., N. B., Sept. 17, 1904.

The phone beside her whirred sharply.

"Yes—who? Oh, Mr. Reeves? Certainly, send him in."

"What's happened to bring you away from the office at this hour?" was her greeting to her brother-in-law, a moment later. "There's nothing wrong at home?"

"No. That is, nothing really wrong, but I feel a bit uneasy about Janet. No, she's not ill. But this story writing is getting on my nerves."

"I thought that had died a natural death. She hasn't mentioned it to me for weeks.'

"Nor to me—that's just it. She writes and writes and writes. Hannah says she spends six hours up there in her studio every day. And she doesn't say a word about it. I'm afraid she's laying up an awful disappointment for herself."

"Writing a book, I suppose—and imagining it a best seller!" Molly laughed, but her eyes were both tender and worried. "Well, I don't know what we can do. You wouldn't let me discourage her in the start, you know."

"I know. And now I can't bear to think of her working so hard all for nothing. Molly, you couldn't buy a story of her, and then have it fixed up and print it with her name——"

"I could not!" snapped Mary Slade Mason, editor. "Anyhow, can't you see it would only make things worse? She'd write them by the dozen after that."

"I'll tell you," he said finally, "you must do a lot of talking in Janet's hearing about how difficult story-writing is, and how long it takes to get anywhere, and how exacting magazines are."

"Which is all quite true," she finished. "I've gone through more than a hundred manuscripts this week hunting the story I wanted, and I discovered it just as you came in. It's a real find."

"Why not bring it over tonight and read it to us," he suggested. "It might give Janet an inkling of how far she has to climb."

So Molly Mason went to dine with her sister with the favored manuscript tucked away in her bag. Dinner was over when she mentioned the story.

"Such a fine story came in today," she said, with careful carlessness. "It's in my bag—maybe you'd like me to read it to you?"

"Yes, do," said Janet eagerly. "Is it a love-story?"

"A story of married love—a problem story, but an unusually good one. Wholesome and sane and humorous, yet it goes straight to the heart of one of the biggest things in life."

"I suppose it is by a very famous writer," said Janet.

"No—in fact it is signed with a name which I never heard before. I'm quite curious about the writer. She must be new in the fiction field."

"Begin," said Janet; I'm so anxious to hear it." She curled herself up in a great leather chair, looking absurdly childish in her soft white dress.

It was a simple story of a wife who met, faced and finally conquered one of the delicately complex problems which all wives encounter. It brought to a world-old theme the light of sane, modern thought, flecked here and there with dashes of whimsical humor.

It was after one of these bits of humor that Reeves straightener himself suddenly, and began to stare at his wife. But Janet's head was bowed on her slender hands, and she was apparently absorbed in the story. Molly read on.

" 'A man falls in love with a girl because of her curly hair, or her dimples, or the way she wrinkles up her nose when she laughs—' " read Molly, and paused in astonishment as Reeve's joyous shout filled the room.

"Janet! You little wretch—you imp!" Somehow, he was occupying the big chair with Janet, laughing and blushing and sobbing, all at once, settled firmy on his knee, her radiant face held in the hollow of his hand, while he stared at her with eyes full of pride and wonder. "Why didn't you tell me?"

"I—I was going to wait until it came out in the magazine. I—I thought you and Molly'd be surprised."

"What—what—I don't know what either of you are talking about!' declared Molly. "Have you both lost your senses?"

"Madame, Editor," said Frederick Reeves, rising and leading Janet to her bewildered sister's side, "perimt me to introduce to you the author of your wonderful story. I suspected it before you'd read three pages; I felt sure of it when you reached that part about the kid with the croup—and when that sentence about the curly hair came out I knew it!"

But Molly was staring at her little sister as though she had never seen her before.

"Janet!" she gasped, at last. "How could you? How could you say those things—how could you think them—how could you know them? You've had no experience——"

She broke off helplessly, and Janet looked at her with a new expression—a look of mingled affection and amusement and tolerance.

"After all," she said sweetly, "you know I am twenty-seven years old; and I have been married five years, and I have borne a child, and brought him through his three years of babyhood. Just what do you think life's great experiences are, Molly?"

"Why, little sister—you're—you're grown up!" stammered Molly dazedly.

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OPEN KETTLE CANNING

The old fashioned method of canning, especially of fruits and tomatoes, was by the open kettle methor. This consisted of cooking the fruit in an open kettle, transferring it, boiling hot, to a sterilized jar and sealing it immediately. Mould frequently appeared on the top of the jar often causing complete loss. Bulletin No. 93, Preservation of Fruit and Vegetables for Home Use, which may be had on application to the Publications Branch of the Department of Agriculture at Ottawa, states that foods decompose or spoil because they are attacked by living germs which are minute forms of plant life. Three types of these tiny organisms cause the spoilage in foods,—moulds, yeasts and bacteria. Every household is familiar with moulds in their growing satte. They thrive in dampness and darkness, require moisture and warmth, and feed upon sugar and starches. Moulds are easily killed by moist heat, and when the open kettle method of canning is used the jars should be sterilized at least ten minutes after being filled.

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New Brunswick Lady Tells of Dodd's Kidney Pills

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McGivney Junction, York C., N. B., Sept. 29th, (Special)—From all over New Brunswick reports are coming telling of the continued popularity of Dodd's Kidney Pills as a remedy for all forms of kidney trouble. No place appears to be too small to furnish at least one person who is prepared to say that she owes her health to the great Canadian kidney remedy. Miss Carrie E. Ferguson, a well-known resident here, is one of them.

"I am happy to say that I found a great improvement in my health after using Dodd's Kidney Pills," Miss Ferguson states. "They are the best medicine I can find for lame back. I advise anyone who is troubled with weak kidneys to try them. I tell everyone that Dodd's Kidney Pills are good."

Dodd's Kidney Pills have become a family remedy all over the province because people have tried them and found them good. They are purely and simply a kidney remedy. They help Rheumatism, Lumbago, Diabetes, Lame Back, Heart Disease and urinary troubles because all of these are either Kidney Diseases or are caused by the kidneys failing to do their work.

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LAMPS

For perfect lamp light, the first requisite is good lamps; those with central-draft burners are far and away the best. The student's lamp with the Rochester burner is as near perfect as anything likely to be made in lamp shape. The price of such a lamp runs all the way from two and a half to twenty dollars. The difference is one of finish and ornamentation. Choose a lamp with a broadish solid base rather than one top-heavy, and given to oversetting. Look also at the size of the burner; unless it is big enough to hold without packing a good sized wick, the lamp will give a poor light. The oil reservoir had better have no other opening than that which admits the wick. Those with a special cap for pouring in oil are convenient, and, in careful hands, safe. But the mas of folk are in dange rof being tempted by them to fill up a lamp already lighted, or else to leave wck and burner for so long undisturbed, both become clogged and gummy.

Do not let a lamp stand with a little oil in the bottom. Do not even light one that has stood partly empty for a week. The best oil vapourises under some conditions, and the vapor is highly explosive. Every burner ought to be supplied with an extinguisher, but where the extinguiser is lacking, do not blow down a chimney to put a flame. Especially not if the lamp has been burned for several hours. Ninety-nine times in the hundred the lamp may come in contact with gas and do no end of damage.

Turn down a lamp flame one-half before moving it from one room to another. But do not leave it low enough to smoke or smell. It will do both if left with flame showing dim. If the light must be moderated, either take the lamp outside or shade the flame, half-shrouding it, rather than turning it too low.

The vtal thing about a student's lamp is to set and keep it level. If the oil-tank is for even a minute a little higher than the burner, the burner will be overflowed, with disastrous results. In filling such a lamp, be sure not to leave air-bubbles upon the top of the oil. Such bubbles have a knack of choking up the narrow supply pipe, and making the light dim and yellow.

Next to good lamps comes good oil, properly kept. The best oil is as white and clear as spring water, and will evaporate after a while, leaving no stain.

Oil keeps in glass, at a temperature between fifty and sixty degrees. Tin cans are light, but in steady use given to springing a leak at the most inconvenient seasons. There is a glass oil-can in an open-work tin holder, with bail and handle, and coming in various sizes, that answers admirably in careful hands, or where it has only to go to the corner grocery for filling. Folk who must fetch home their oil supply in a farm wagon, and presumably over rough roads, will find nothing else quite so good for holding it as a five-ballon demijon, with its wicker work still staunch. The demijon is of manageable size, does not overset nor break easily, and never, never leaks. With reasonable care it will last a life time, and still be a heritable asset.

Get the very best wicks, soft, or loose, rather coarse mesh, and big enough to fill the burners without any crowding or packing. A wick too small admits air into the oil-tank, thus setting up vaporisation. Further, it leaves a space for the passage of flame downward is a lamp is improperly blown out. The proper way, be it said, is across the flame, not from over head. Buy, in bunches, wicks of sizes to fit every lamp in the house. Put all the bunches in a porcelain kettle, cover them with strong ivngear, bring the vinegar to a boil, and set where the kettle will keep warm for three hours. Drain out the wick buiches, dry thoroughly, and keep away from dust. Wicks thus soaked and kep tclean, both before and aftef going in the burner, almost never smoke. In use trim the wicks once a week, but always very lightly and evenly, taking off the snuff—the burned part—but never any charred wick. Some excellent housekeepers, indeed, never put scissors upon a

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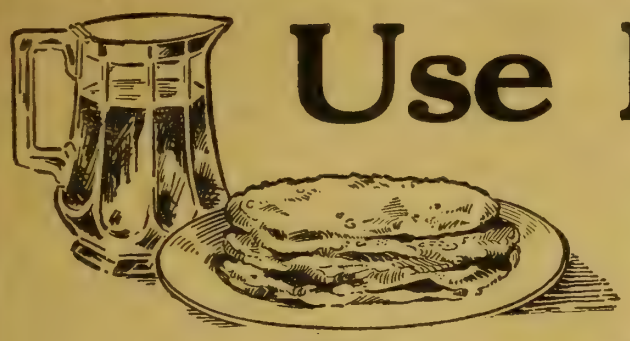

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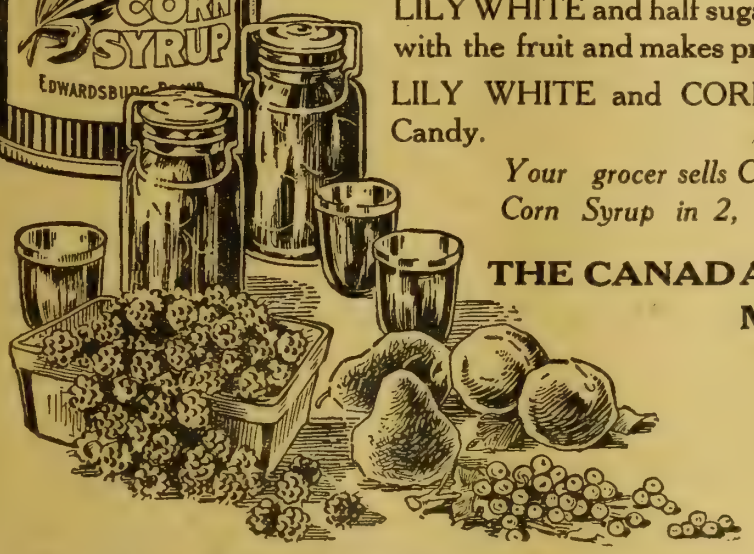

LILY WHITE *Write for Booklet on Receipes* **CROWN BRAND**

wick. Instead they turn the wicks up an inch, then, with a coarse cloth held over thumb and forefinger, rub and pinch off the snuff. Whether cut or pinched, the main thing is to leave the wicks withouot tag ends or jagged places. Tag ends and jags mean always smoked and broken chimneys.

There are chimneys and chimneys—all breakable. ome are supremely so in the hands of the average maid-servant. Luckily they are also cheap; especially when bought by the dozen or the gross. If all the lamps of the household take chimneys of the same size, the gross is possible, and a sensible economy. After buying thus in quantity, put some hsavings in the bottom of a wash boiler, pack the chimneys snugly wodn in it, stew a handful of salt over them, then almost fill the boiler with cold water, and set it where it will come very slowly to a boil. Let it simmer for two hours, then take from the fire and cover so thickly it will be at least three hours in cooling. When it is cold, wash the chimneys in clear hot water with a suspicion of soda in it; rince, also in hot water, wpe dry, and store on the hghest shelf in the closet. There the warmest air in the kitchen will still further toughen them. Nine chimneys in ten break through unequal heating. Boiling this way, and keeping it a warm place afterward, seems to effect some molecular change which makes the glass much less liable to break.

Boil all the movable metal parts of lamp burners once a month, rinse well with boiling water, and either dry in eth sun or on top of a hot stove. If the burners are clogged and gummy, scour them lightly before putting on toil. A clean burner is nearly as essential to good light as a clean chimney. Wash the chimney also in hot soda water, rinse well, wipe dry, and polish with crumpled newspaper.

For filling lamps one needs a small glass funnel and a length of glass pipe open at both ends. et the funnel in the lamp-mouth, and pour in oil steadily until it comes in view at the bottom of the funnel. If by chance it stands so high the wick would make it overflowing, plunge the glass tube down inside the funnel, clap a finger over the open end, and draw it back. The surplus oil will come with it, and may be held there by keeping the finger in place until the funnel is shifted. Lamps burn better for being full, but should not be too full; invariably then the oil oozes all over the top, and eithe runs down on the foot or vaporises, and makes the whole room smell.

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HOT BREADS FOR COLD DAYS

(By Mrs. Emily Grant.)

With the coming of frosty mornings, the fragrance of hot breads, mingling with the aroma of well-made coffee, gives a fillip to appetite.

Muffins or biscuit made with soda or baking podwer usually require about fifteen minutes for their baking in a hot oven. Muffins or biscuits made with yeast require from tyenty minutes to haf an hour in a moderate oven.

Cornmeal, graham, rye or wholewheat muffins take from five to ten minutes longer to bake than those of the plain wheat, which require intense heat to develop the sugary portions of the wheat.

It is usually considered best to put muffiins, biscuit and the other small breads on the bottom of the oven first so tha tthey will rise to their full height, then set them on the upper grate to finsh baking and browning.

Graham Gems

Sift together one cupful of graham flour, one cupful of pastry flour, two level tablespoonfuls of baking powder, a rounded tabespoonful of sugar and a salt spoonful of salt. Add three tablespoonfuls of melted butter, an unbeaten egg and a cupful of sweet milk or milk and water. Beat all together until smooth and "bubbly" on top. Grease a dozen muffin molds, your in the abtter and set in a slow oven until the muffins rise to the top of the pans, then increase the heat to brown and crisp them.

Corn Muffins with Sour Milk

Sift together one cupful of cornmeal, one-half cupful of flour, one-half teaspoonful of salt and three-quarters teaspoonful of soda. Beat one egg thoroughly, add to it one and onehalf cupfuls of sour milk, and combine with the dry ingredients.

Add one and a half tablespoonful of butter or shortening melted, mix thoroughly, then pour in hot, well-

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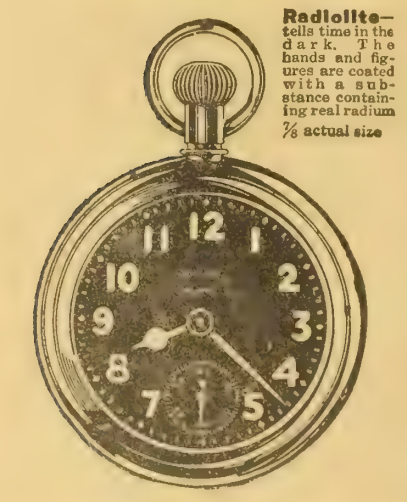

Radiolite—tells time in the dark. The hands and figures are coated with a substance containing real radium ⅞ actual size

greased pans and bake twenty-five minutes in a moderate oven.

Rice-Flour Muffins

Sift together one and one-half cupfuls of rice flour, two cupfuls of wheat flour, half a teaspoonful of salt and a tablespoonful and a half of baking powder. Add one pint of sweet milk, a tablespoonful of melted butter and a well-beaten egg, beat smooth and bake in gem-pans or muffin rings.

Hominy Muffins

Take a cupful of warm boiled hominy cooked to the proper consistency for breakfast mush and mix with it a tablespoonful of butter, a half teaspoonful of salt and a cupful of milk.

Sift together a cupful and a half of pastry flour and teaspoonful and a half of baking powder and add gradually to the hominy mixture. If the boiled hominy is rather thin, a little more flour may be needed.

Lastly, add two well-beaten eggs and bake in a hot oven for half an hour.

Breakfast Bread

Take four slices of baker's bread, cut off the crust and lay them in a pan; pour boiling water over them, just enough to soak them, then cover When the bread has stood for an hour drain it and stir until it is a smooth mass; add two tablespoonfuls of sifted flour and half a pint of milk. Beat two eggs and stir them into the mixture gradually. Grease some muffin-rings and place them on a hot griddle; fill them and bake brown.

Serve hot and break open to butter.

STORING APPLLES FOR WINTER

Most farm families are now laying in a stock of apples for winter use. It is one of the best and most approved customs of rural life. There are very few families, however, that find themselves provided with strictly modern refrigerated storage houses. Most of the apples kept for home use muse be held in storage of a more or less makeshift character. ome of these substitutes are good and some very inefficient. The commonest home storage place is the cellar under the dwelling house . This may be a very good apple storage or it may be almost worthless. It should be cool and moist, not warm and moist. If it is cold enough it is hardly likely to be too moist. The cooler the better, too, up to the point of actual freezing. The ideal apple storage should maintain a uniform temperature as near as possible to 32 degrees. The great majority of house cellars are too warm. For this reason a shed room, the granary or an old harness room is often better than the cellar.

The old theory was that the apples should be put on shelves or trays in shallow layers and frequently sorted, those which were beginning to decay being removed as soon as possible. The fruit is better off if it is not handled at all during the storage peroid. It can be placed in bushel boxes or in barrels. If in barrels they may be headed up or left unheaded.

Regulating the Temperature

Other substitutes for storage besides the cellars are well worth considering. It was the old custom in certain neighborhoods to store apples in the haymow, and if the mow keeps a temperature steadily near the freezing point the results are bound to be excellent. A still older practice consists in burying the apples in pits. This also is a good substitute storage if properly managed. The pit should be dug in a gravelly, well-drained spot and perfect drainage away from the pt provded. It may be arranged to hold any quantity from ten to one hundred bushels of fruit. The pit is lined with clean straw or even hay and the apples piled in and heaped up into a tall cone. They are allowed to cool thoroughly with the coming of fosrty nights. Along in November, when there is danger of actual freezing such as would spoil the fruit, a layer of straw is covered evenly over the whole. As the cold increases this straw covering is reinforced with a thin layer of earth. This earth covering is not put on all at once; the botom of the cone is covered first, leaving the residue of heat which the apples contain to pass off through the apex of the pile. The top is finally covered, however, and the earth protection is gradually thickened by putting on successive layers. By the time the ground freezes up so as to stop these preparations the apples are thoroughly cooled and the pit is sufficiently covered to last through the winter.

On godd, well-provded, up-to-date farms regular fruit storage rooms should be constructed. These need not be provided with artificial refrigation, but must be free from the varying and uncertain influences of the common cellar. They require chiefly good insulation for the walls and good, easily controllable ventilation. The ventilators are opened at night and closed during the day. This cools the fruit down until the freezing point is approached, when the ventilators are kept closed all the time; or if there is danger of freezing the fruit the process is reversed, the ventilators being opened during the warm days.

SWEEPING

To sweep a carpet which is not to be taken up house cleaning time, sprinkle the floor well with clean sawdust lightly damp. This, if it is matted or carpeted—rugs must be removed before dusting the walls. Sweep up the saw dust with a stiff broom wet in hot water, and washed clean as soon as it shows much dirt. Take up the saw dust and sweep again with a softer broom, barely dampened. If the carpet is not to come up, go over it after second sweeping with a cloth dipped in hot water and ammonia—a tablespoonful of ammonia to a quart of water. Wipe a yard or so at a time, then wash out the cloth in plain water, so as tot keep the ammonia clean to the last. The cloth is, of

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course, dipped in it after washing and wrung as dry as possible.

The tidy house keeper always wears a dust cap on sweeping and dusting days, and before starting to sweep she should half raise the lower sash and put down the upper ones an equal distance, so that there is a good current of air circulating through the room, and instead of just "stirring up" the dust as is often done, the good circulation will carry away the dust. It is well to use moist dust cloths.

To avoid raising much dust when sweeping, besides useing damp sawdust, the housekeeper may sprinkle her carpets with scraps of dampened newspaper or moist tea-leaves. Some use slightly dampened coarse salt, but this is difficult to get thoroughly out focarpets and has been known to rot them when allowed to stay in them any length of time.

To properly clean a floor after the carpet has been removed, sprinkle the floor tackly wth cleaan, damp saw dust and sweep with a stiff broom. Take long, sweeping strokes and keep the broom low, so as not to raise dust. Follow the sweeping with a good washing. Do not splash water on the floor; it is sure to mar the base board, and likely to damage the ceiling underneath. Use a soft, coarse cloth, and warm water with a handful of soda in it, and finish by wiping with a cloth wrung very dry out of clear hot water. Dry the floor and air the room thoroughly . If possible to leave the room unoccupied over night, let the upper sashes of the windows stay open until twelve o'clock next day.

MOTION PICTURES OF MATAPEDIA VALLEY

While on the C. N. R. special train from Halifax to Quebec recently, carrying newspaper men and moving picture operators, who were following the Prince of Wales on his tour, some of the motion picture men secured views of the Matapedia Valley. They mounted the deck of the locomotive and operated their cameras while the train sped through the Morrisey Rock Tunnel and across the Restigouche Bridge. At a point beyond Matapedia station the train was stopped and several group pictures were filmed.

These pictures will be shown in connection with the news films of the Prince's tour.

HEAVY PASSENGER TRAVEL ON C. N. R. LINES

Passenger travel is remarkably on sections of Canadian National Railway Lines, and particularly so in the Eastern section where trains between St. John, Halifax, Sydney and Montreal are every day filled to capacity. The popularity of the Maritime Express and Ocean Limited is amply demonstrated by the many applications for sleeping car reservations on these well equipped through trains.

Requests for space are so numerous that extra cars are being caried and often trains run in two sections. With the rush of travel from troop steamers arriving at Halifax and Quebec this means considerable of a strain on the railway for equipment.

Passenger business which has been very brisk all summer, is likeyl to continue through the fall.

PARABLE OF THE SOWER

Up to Date

H. L. Krum, Deering works, found this parable in the Chicago Health bulletin, and intimates there may be something of interest to others, who may not be exactly aware of dangers in careless coughing.

1. Behold the cougher went forth to cough.

2. And when he coughed, some germs fell upon the sidewalk and the feet of the pedestrians came and gathered them up and carried them into their homes.

3. Some fell into nostrils that were hard and unfruitful and forthwith a slight cold appeared. It was not worse because there was much opposition to them on account of the sterility of the soil.

4. And when the sun was up these colds were scotched, and because they had no root these colds withered away.

5. And some fell in thorny places, such as those that have an immunity, and in this wise they were choked out.

6. But others fell into good ground for them, and brought forth much disease; some an hundred-fold, some sixty-fold, and some thirty-fold.

7. Who hath ears to hear let him hear and go forth to the health department and view the great harvest of pneumonia, tuberculosis, lagrippe and bronchitis, all of which is on record in the archives of the department.

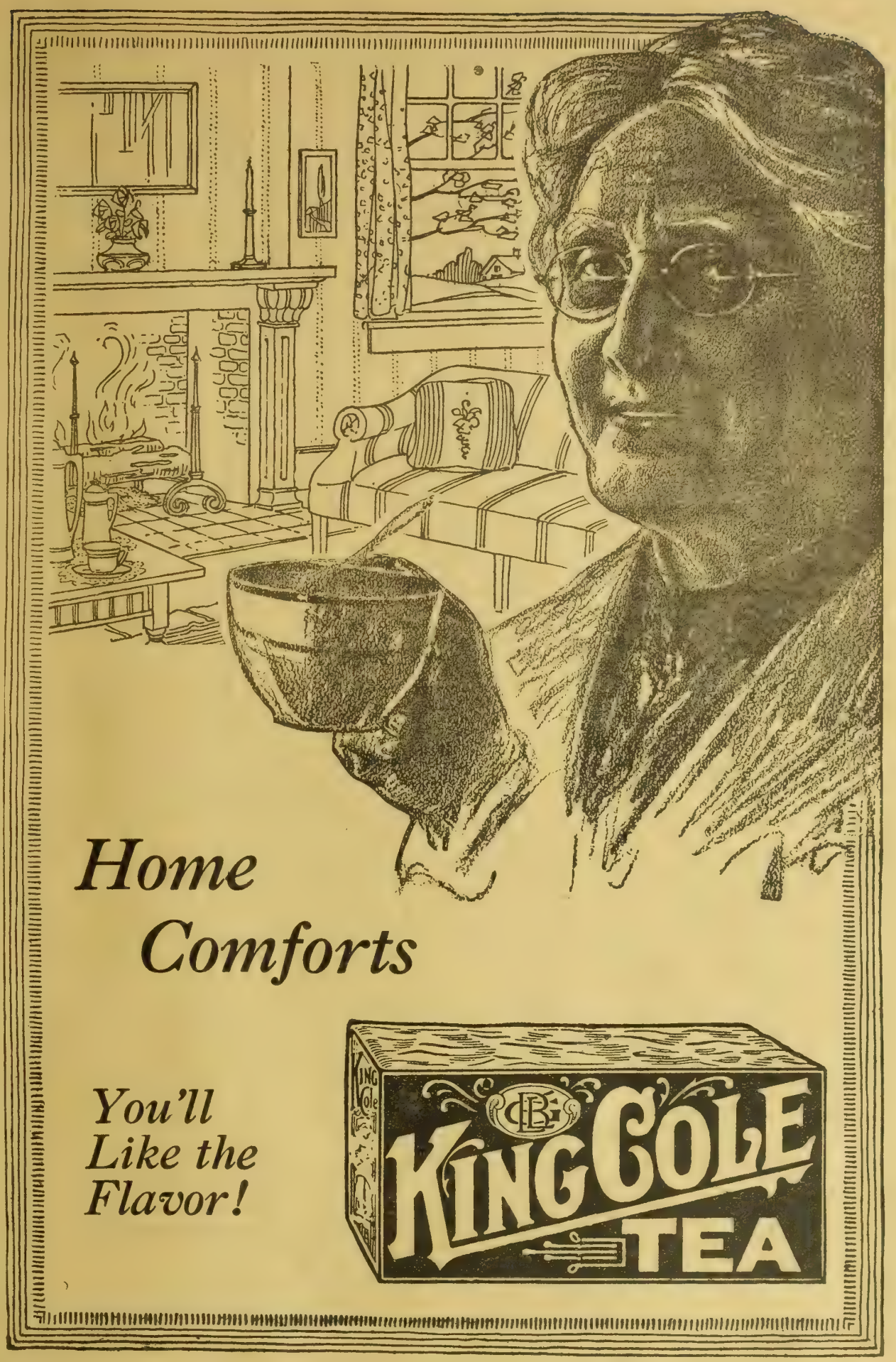
8. Who hath ears to hear, let him hear that over 10,000 of our people were garnered during the year of our Lord 1917, from the seed of the cougher and sneezer, and now sleep with their fathers in their untimely sepulchres.

9. Be ye not of those who, having ears, hear not, and who, having eyes, see not those things which we have herein set forth that so nearly concern their temporal health and salvation.

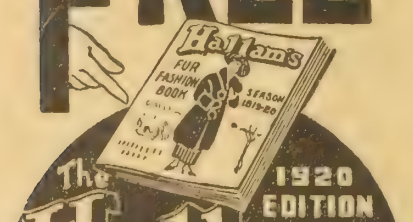
10. Muffle the cough, smother the sneeze and expectorate not in public places to the end that divers and grievous disorders come not unto thee, nor unto thy neighbor.

12. And remember now the teachings of the health department that thy days may be long in the land which the Lord, thy God giveth thee.

Glad to know that the altitude record is held by an American aviator and not by the cost of living.



FREE



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FERTILIZERS

It is now nearing the time when farmers will be placing their orders for their commercial fertilizer requirements for 1920.

There is no one subject of greater importance to farmers than the maintenance of the fertility of the soil.

Fertilizers should be employed in addition to and not in place of other good soil management practices. Legumes in the rotation, the use of manure or other organic matter, drainage and liming where needed are all prerequisites to the most satisfactory use of fertilizers.

The kind of fertilizer to use depends upon the soil type, the way the soil has been cropped and the system of farming practiced. It has been shown repeatedly that the conservation and application to the soil of all manures and crop residues and a more generous use of legumes to provide further supplies of nitrogen and organic matter, are practices of prime importance and should be foremost in any place of soil management. On some soils, however, these practices are not enough for maximum yields and something more must be done. Investigations by Experiment Stations and practical, progressive farmers have demonstrated that most soils aer deficient in one or more elements of plant food, and that generally some kind of a fertilizer may be used to advantage.

In the choice of fertilizers farmers have been confronted with such a vast array of formulas, mostly low grade, that intelligent selection has been made unnecessarily difficult.

Low grade fertilizers contain small amounts of plant food and usually made from low grade materials of low availability, have always been more expensive per unit of plant food contained than high grade mixtures containing large amounts of plant food of better quality. Rich mixtures must necessarily contain better materials of higher availability and will produce better results. The farmer who buys mixed fertilizer on the basis of low price per ton pays most for the available plant food he actually gets. The cost of mixing, transportation and handling of low grade fertilizers are all higher per unit of plant food contained than in the case of high grade mixtures, and the consumer has to bear the extra expense. Fertilizers should always be purchased on the basis of composition and quality, and not on the basis of price per ton.

All fertilizers should be bought and sold by formulas and not by brand. Brand names should not be used except in connection with the formula, so that there may be no confusion in the mind of the purchaser as to the composition of the fertilizer he is buying.

Fertilizer values are usually compared on the basis of price per unit of plant food contained. A "unit" of plant food is 1.0 per cent per ton. To calculate the price per unit, the price per ton should be divided by the per cent of plant food contained. Thus, for example, if it is desired to determine what 16 per cent acid phosphate selling at $24.00 per ton is worth per unit, divide $24.00 by 16, which gives $1.50 as the price per unit.

To determine the price of potash in an O-12-4 fertilizer, selling at $34.00 per ton, first deduct the value of the 12 units of phosphoric acid, which at $1.50 per unit, is $18.00. This leaves $16.00 as the price of the four units of potash. Divide $16.00 by 4 gives $4.00, as the price per unit of potash.

If, next, it is desired to know the price of nitrogen in a 2-12-4 fertilizer selling at $46.00 per ton, deduct first the value of the 12 units of phosphoric acid and four units of potash, which is $34.00. This leaves $12.00 as the price of the two units of nitrogen. Dividing $12.00 by 2 gives $6.00 as the price per unit of nitrogen. To get the value of plant food per pound, divide the price per unit by 20, which is the number of pounds in a unit. Thus nitrogen at $6.00 per unit is worth 30 cents per pound.

Any particular mixed fertilizer formula may be prepared at home in any desired quantity from fertilizer raw materials, which may be purchased separate, such as Nitrate of Soda, dried blood, acid phosphate, bone meal and various potash salts. Home mixing is advantageous where the raw materials can be purchased as is clearly set forth in a letter, the heading, "A Plumper for Home-mixed Fertilizer". The amount of fertilizer to use per acre will depend upon the condition of the particular field and the treatment given to preceding crops. On ordinary soils, enough phosphorus should be applied in the course of the rotation to return all of this element that has been removed in crops. In the case of the non-acid mucks, potash is the element most in need of replenishing. The fertilizer needs of clover and grass grown in rotation with grain crops should be provided for by increasing the amounts used on the grain crops. On soils deficient in nitrogen, wheat and timothy may often be profitably top dressed with nitrate of soda in the spring. This system is extensively followed by farmers in some parts of the Maritime Provinces.

Light colored soils are quite frequently deficient in organic matter and nitrogen. The only practical means of supplying the bulk of the nitrogen needs of crops on these soils is the production of legumes, which can secure nitrogen from the air, or the use of large amounts of manure. These soils require special and constant attention to their organic matter and nitrogen supplies and provision should always be made to have abundance of organic matter, especially legumes, to plow under. The black soils are relatively well supplied with organic matter and nitrogen, and seldom respond to nitrogen in fertilizer.

On acid soils, lime must be applied before the best results can be secured. It must be remembered, however, that lime cannot take teh place of fertilizer nor can fertilizer take the place of lime. Lime should always be purchased separately. Gypsum or land plaster is not a fertilizer nor a corrector of soil acidity. It is merely a soil stimulant and while it sometmes ncreases crop yields, it does so at the expense of the plant food already in the soil. By its use the soil will become poorer.

The most satisfactory results from the use of fertilizers will be secured when they are used in connection with otherwise good systems of soil management, including legumes in the crop rotation, the careful use of manures and crop residues, tile drainage and liming where needed and the practice of good cultural methods generally. Realizing the value of thorough cultivation in procuring good results in crop production, the farmers of the Maritime Provinces carried out last season, the most thorough systems of cultivation that we have ever seen practiced in Maritime Canada, and hundreds of them are wakening up to the lime requirements of their soils.

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SPECIFIC INSTANCES OF VALUE OF CO-OPERATIVE EFFORT

Aroostook Farmers Hot-Foot For Potato Tariff

In a recent issue of The Maine Farmer, Geo. V. Brown, Secretary of the Aroostook Federation of Farmers, heralds the good news to potato growers that the embargo on foreign potash has been lifted. This transpired through the efforts of the Federation, who urged through the American Senate, upon the War Trades Board the necessity fo rthe removal of the embargo. Mr. Brown points out in this respect the value of concerted effort. He says labor unions, have reached the position where they almost dominate political affairs by keeping men on the job all the time to look after their interests, and if the farmers are ever to get a square deal at their federal or local capitals, they must organize, and when they want anything, go after it.

In regard to a tariff on potatoes entering the United tSates, Mr. Brown says that the Federation has been assured that if the farmers of Aroostook want said tariff they should have some practical farmers present at the hearings on the Agricultural Schedule of the new tariff bill to testify as to the actual cost of raising potatoes in Aroostook as compared with Canada, as the basis of a protective taric would be the dicerence in the cost of production.

It would be a good idea for the New Brunswick Potato Growers' Associa-

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tion and the United Farmers of the potato growing counties to get authentic figures on the cost of production in New Brunswick to submit through the proper channels, as an effort against any attempt to discriminate against the Potato Growers of Canada.

The Federation is hot foot after a protective tariff, and is calling upon farmers and business men of every description to come to their assistance.

The Federation ships potatoes for its members on practically the same basis as the United Fruit Companies of Nova Scotia handle apples. They are planning to make four grades of potatoes and establish a trade mark. Every sack of potatoes will be stamped with the trade mark and an extensive advertising campaign carried on. This plan has worked splendidly in the sale of fruits of various kinds, all over the world. The United Fruit Companies find the uniform pack and grade brings repeat orders. The question of grading potatoes in New Brunswick was discussed at the annual meeting of the New Brunswick Potato Growers Association last winter, and grading will undoubtedly be practiced in the near future.

FARM EQUIPMENT

When there is a little spare money to spend for equipment that is very useful on the farm, some of the following articles might be considered. Four thermometers can be used on every farm to good advantage; one for the churn, one for the cellar, one for the living-rooms in the house and one to suspend near the most frequently used door-step. It is quite necessary to have a thermometer to use in churning in order to do the most satisfactory work. If there is any danger of vegetables in the cellar freezing during severe weather, the thermometer will act as an indicator when danger approaches and immediate protection can be furnished in the nature of lanterns or oil stoves to keep the temperature up to a safe level.

Frequently farm homes are overheated and there is no attempt made to regulate the temperatuer during the winter. A thermometer to aid in keeping the temperature around the comfortable and healthful sixty-eight degrees, will be very desirable for the health of the family. There is nothing more interesting than occasionally following the trail of the mercury on the porch. In spite of the fact that it is a commonplace subject, there is nothing much more important or interesting than the weather on a farm.

Farmers who never own an alarm clock manage to get up early from a force of habit, but when city helpers appear on the farm a little jingling on the gong is necessary to start business going at the right time. The alarm clotk can be used by the housewife to time the cooking and baking of various household necessities. When running an incubator or looking after sick live stock the alarm clock may be used to arouse the farmer at a certain hour during the night when attention to the work may be necessary to avoid serious losses.

The electric flash-lights possibly have more practical uses on a farm than in the city. The driver of an automobile will never wish to light any matches around the machine, either in the garage or at any stop on the road. If an examination of the car is necessary it is very dangerous to use a lighted match to help in determining the trouble. The flash-light is safe and furnishes an abundance of bright light just where it is most needed. When quick trips to the barn are necessary at night, the handy flash-light is less bulky and safer than the oil lantern. During sickness a light may be needed quickly in the home without electric lights and it will save time to have a flash-light by the bed. A substantial flash-light may save serious accidents on the farm while working around horses at night, and it is a great convenience and safeguard in the home whenever fire or thieves are suspected. It is just one of the handy farm helpers which are not absolutely necessary but yet very useful.

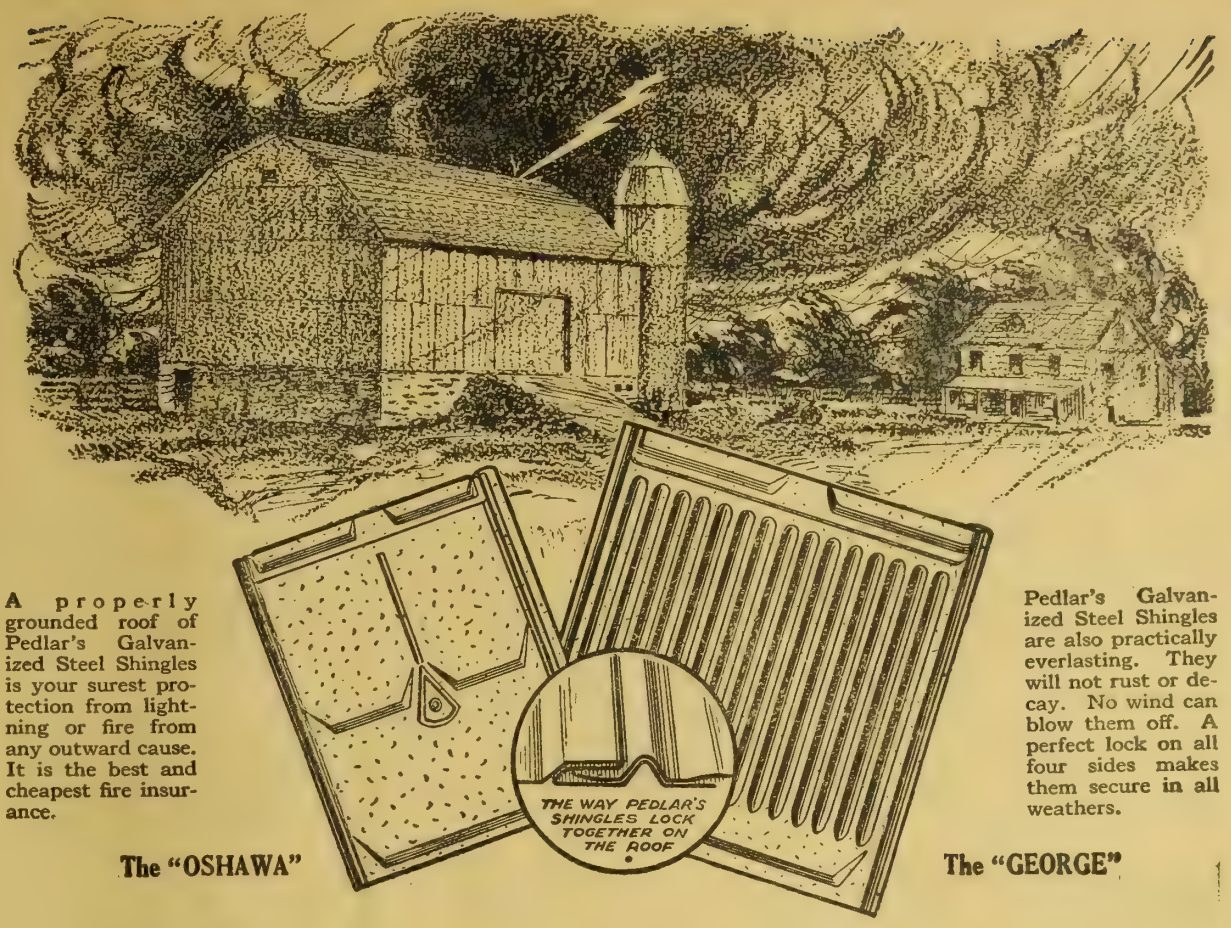
The keeping in repair of wire fences is necessary on the stock farm and so the wire stretcher is a handy tool, both in repairing and building new fences. Not many farmers own wire stretchers and they would be able to keep their fences in better condition if they had ready access to this handy tool. In many communities a substantial wire stretcher might be purchased in co-operation with several neighbors. It is not a tool that is needed frequently and yet it is very necessary in keeping the farm fences in repair and in building new fences. Tools of this kind last almost indefinitely and a farmer with a fair sized acreage can afford to own one as the yearly expense of owing such a tool can be spread over a large number of years.

Windows are often broken in the house, barn or poultry houses, and there is no glass cutter, putty, or glazier's points handy, the window may stay broken for a long time, even though there are plenty of pieces of glass on the farm that might be cut to fit the space formerly filled by the broken pane. The glass cutter and the putty knife are handy tools for the farmer and needed at the most unexpected time at any season of the year.

Both the step-ladder and the high ladder are necessary equipment that will be needed frequently. The step-ladder will be handy in picking fruit, pruning and repair work around the house and barn. The high ladder is valuable in fire protection. If a barn catches on fire it is very handy to have a quick means of getting upon the house to protect the roof from the sparks. In case of a small chimney fire spreading to the roof of the house, the farmer with a high ladder available might be able to save his home, even though the house might have burned if a trip to the neighbor's to borrow a ladder had been necessary.

The portable fire extinguishers are practical and may save much trouble due to fire on the farm. In the barn, the auto garage or in the home they can sometimes be used quickly to stop a fire that might cause serious damage to life and property. The presence of a fire extinguisher will give an added safety to many farm homes. There is a limit to the purse and the above mentioned articles are not absolutely necessary, but they are a practical investment and worth all they cost to the farmer.

It is the character of the men that make a cooperative asosciation and nothing else can or will. Our kickers are the men who bring to us everything that grows in the trees or fell on the ground and then kick because they have not as many No. 1's as the other fellow who is honest.—Elmer Lick, Oshawa, Ont., before Ontaria Fruit Growers.



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(Continued from page 876)

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Pen (Lambs).—1st, George L. Boswell; 2nd, A. Ayre; 3rd, J. H. King & Son.

South Downs

Ram, 2 shears.—1st and 2nd, A. Ayre.

Shearling Ram.—1st and 2nd, A. Ayre.

Ram Lamb.—1st and 2nd, A .Ayre; 3rd Cephas Nunn.

Ewe, 2 shears.—1st and 2nd, A. Ayre.

Shearling Ewe.—1st and 2nd, A. Ayre.

Ewe Lamb.—1st, 2nd and 3rd, A. Ayre.

Pen.—1st A. Ayre.

Pen.—1st, A. Ayre.

Hampshire Downs

Ram, 2 shears.—1st, Cephas Nunn; 2nd, Lorne Nunn.

Shearling Ram.—1st and 2nd, Cephas Nunn; 3rd, Lorne Nunn.

Ram Lamb.—1st, Cephas Nunn; 2nd, Lorne Nunn; 3rd, Cephas Nunn.

Ewe, 2 shears.—1st and 2nd, Cephas Nunn; 3rd, Lorne Nunn.

Shearling Ewe.—1st, Cephas Nunn; 2nd, Lorne Nunn; 3rd, Cephas Nunn.

Ewe Lamb—1st, Cephas Nunn; 2nd, Lorne Nunn; 3rd Cephas Nunn.

Pen.—1st, Cephas Nunn; 2nd, Lorne Nunn.

Pen (Lambs).—1st, Cephas Nunn; 2nd, Lorne Nunn.

Cheviots

Ram, 2 shears.—1st and 2nd, A. Ayre; 3rd, George A. M. King.

Shearling Ram.—1st and 2nd, A. Ayre; 3rd, George A. M. King.

Ram Lamb.—1st and 2nd, A. Ayre; 3rd, George A. M. King.

Ewe, 2 shears.—1st and 2nd, A. Ayre; 3rd, Robert Furness.

Shearling Ewe.—1st and 2nd, A. Ayre; 3rd, George A. M. King.

Ewe Lamb,—1st, George A.M. King; 2nd and 3rd, A. Ayre.

Pen.—1st, A. Ayre; 2nd, George A. M. King; 3rd, Robert Furness.

Pen (Lambs).—1st, A . Ayre; 2nd, George A. M. King; 3rd, Robert Furness.

Dorset Horns

Ram, 2 shears.—1st, George L. Boswell; 2nd, A. Ayre; 3rd, Clovernook Stock Farm.

Shearling Ram.—1st, A. Ayre; 2nd, M. Smith, Bathurst; 3rd, R. A. Snowball.

Ram Lamb.—1st and 2nd, George L. Boswell; 3rd, A. Ayre.

Ewe, 2 shears.—1st, A. Ayre; 2nd and 3rd, George L. Boswell.

Shearling Ewe.—1st, A. Ayre; 2nd, George L. Boswell; 3rd, Clovernook Stock Farm.

Ewe Lamb.—1st, 2nd and 3rd, Geo. L. Boswell.

Pen.——1st, A. Ayre; 2nd, George L. Boswell; 3rd, Clovernook Stock Farm.

Pen (Lambs).—1st, George L. Boswell; 2nd, A. Ayre.

Suffolks

Ram, 2 shears.—1st, J. R. Horne, Winslow, P.E.I.

Shearling Ram.—1st, A. P. Horne, Winslow, P. E. I.

Ram Lamb.—1st(J. R. Horne; 2nd and 3rd, A. P. Horne.

Ewe, 2 shears.—1st, A. P. Horne; 2nd, J. R. Horne; 3rd, A. P. Horne.

Shearling Ewe.—1st, A. P. Horne, 2nd, J. R. Horne; 3rd, J. R. Horne.

Ewe Lamb.—1st, J. R. Horne; 2nd, A. P. Horne; 3rd, A. P. Horne.

Pen.—1st, J. R. Horne; 2nd, A. P. Horne.

Pen (Lambs.)—1st, A. P. Horne; 2nd, J. R. Horne.

Grades—Long Wool

Pair Ewes, 2 shears.—1st, Albert Boswell; 2nd, Burpee & Smith; 3rd, W. T. Craig.

Pair Shearling Ewes.—1st, Albert Boswell; 2nd, W. T. Craig; 3rd, Burpee & Smith.

Pair Lambs.—1st, Albert Boswell; 2nd, Burpee & Smith; 3rd, W. T. Craig.

Pens.—1st, Albert Boswell; 2nd, W. T. Craig.

Grades—Medium Wool

Pair Ewes, 2 shears.—1st, George L. Boswell; 2nd, J. M. Laird & Son; 3rd, R. A. Snowball.

Pair Shearling Ewes.—1st, George L Boswell; 2nd, R. A. Snowball; 3rd, Z. R. Estey, Fredericton, N. B.

Pair Lambs.—1st, George L. Boswell; 2nd, J. M. Laird & Son; 3rd, Z. R. Estey.

Pen—1st, George L. Boswell; 2nd, J. M. Laird & Son; 3rd, R. A. Snowball.

SWINE

Berkshires

Boar, over 2 years.—1st, Shaw Bros. Hartland, N. B.

Boar over 1 year and under 2.—1st, J. R. Semple & Son; 2nd, Shaw Bros.; 3rd, H. R. Parent, Douglas, N. B.

Boar, over 6 months and under 1 year.—1st, J R. Semple & Son.

Boar under 6 months.—J. R. Semple & Son; 2nd, Shaw Bros.; 3rd, H. Ray Parent.

Sow, over 2 years.—1st, J. R. Semple & Son; 2nd, J. R. Semple & Son; 3rd, J. R. Semple & Son.

Sow over 1 year and under 2 years.—1st, Shaw Bros.; 2nd, H. Ray Parent; 3rd, J. R. Semple & Son.

Sow under 6 months.—1st, J. R. Semple & Son; 2nd, J. R. Semple & Son; 3rd, H. Ray Parent.

Partridge
Tires
Sentenced to do 10,000 miles
They will long outlive their term
Made by The F.E. Partridge Rubber Company Limited Guelph Ont.

Breeding Sow with liter.—1st, J. R. Semple & Son; 2nd, Shaw Bros.; 3rd, Burpee & Smith.

Herd, boar and three females.—1st, and 2nd, J. R. Semple & Son; 3rd, Shaw Bros.

Yorkshires

Boar over 1 year and under 2 years.—1st, Fowler Bros., Welsford, N. B.; 2nd, Alphonso Kelly.

Boar under 6 months.—1st, Joseph Ellick, Nashwaaksis, N. B.

Sow, over 1 year, under 2.—1st, Geo. Long, Mouth of Keswick, N. B.; 2nd, Justice R. Griffiths, Fredericton.

Sow, over 6 months, under 1 year.—1st and 2nd, Joseph Ellick.

Sow, under 6 months.—1st, Gordon Patterson, Greys Mills, N.. B.; 2nd, Joseph Ellick.

Breeding Sow with litter.—1st and 2nd, Fowler Bros.

Herd, boar and three females.—1st, Fowler Bros.

Tamworth

Boar over 1 year.—1st, Clovernook Stock Farm.

Boar, under 6 months.—1st, Clover Nook Stock Farm.

Sow, over 2 years.—1st, Clovernook Stock Farm.

Sow, under 6 months.—1st, Clover Nook Stock Farm.

Breeding Sow with Litter.—1st, Clovernook Stock Farm.

Herd.—1st, Clovernook Stock Farm.

White Chester

Boar over 2 years.—1st, John R. Jewett.

Boar, under 6 months.—1st, Bertrand Goodspeed, Penniac, N. B.

Sow, over 2 years.—1st and 2nd, John R. Jewett.

Sow over 1 year.—1st, Jarvis Seaman; 2nd, Glen Patterson; 3rd, John R. Jewett.

Sow, under 6 months.—1st, Clovernook Stock Farm; 2nd and 3rd, John R. Jewett.

Herd.—1st, John R. Jewett.

Poland China

Boar, over 1 year.—1st, Ralp H. Libby.

Boar, under 6 months—1st,Ralph H. Libby.

Sow, over 2 years.—1st, Ralph H. Libby.

Sow, over 1 year.—1st, Ralph H. Libby.

Sow, under 6 months—1st, Ralph H. Libby.

Herd.—st, Ralph H. Libby.

Fat Pigs

Fat Hog.—1st, Bertrand Goodspeed.

Grades

Sow, over 1 year.—1st, W .Illingworth.

Sow, under 6 months.—1st, John R. Jewett.

Breeding Sow, with Litter.—1st. W. Illlingworth.

Boys' Club—Chesters

Sow, over 1 year.—1st, Jarvis Seaman, Hoyt Station; 2nd, Justice R. Griffiiths, R. R. No. 3.

Sow, over 5 months.—1st, Gordon Patterson, Greys Mills; 2nd, J. Stanley Tripps, Mouth of Keswick.

Barrow, over 5 months.—1st, J. Stanley Tripps.

Berkshires

Sow, over 5 months.—1st, Roland R. Shaw, New Maryland, N. B.;2nd, Wm. H. Morgan, New Maryland, N. B.; 3rd, Charles Charters.

DAIRY PRODUCTS

Butter, box 56 lbs.—Diploma and 1st prize, Farmers' Co-operative Creamery, Moncton, N. B.; 2nd, Ben. Gallant, Albertine, N. B.; 3rd, C. M. Johnson, Central Bedeque, P.E.I.

Butter, Box of Prints, 20 lbs.—1st and Diploma, Farmers Co-op. Creamery Co.; 2nd, C. M. Johnson; 3rd, Ben Gallant.

Butter, Tub or Crock, 15 lbs., Dairy.—1st and Diploma, Charles Parent, Douglas, N. B.; 2nd, C. N. Goodspeed, Penniac, N. B.; 3rd, Mrs. W. Illingworth, Fredericton.

Butter, Box Prints, 10 lbs.—1st and Diploma, Charles Parent; 2nd, Elwood Allen. Burtts Cor.

Cheese

Factory Cheese, August.—1st and Diploma.—J. A. Northrup, Millstream, N. B.; 2nd, Harry H. Parlee, Colina, N. B.; 3rd, L. J. Murphy, Tignish, P. E. I.; 4th, Ben Keith, Butternut Ridge, N. B.; 5th, Corn Hill Cheese Co., Corn Hill, N. B.

Factory Cheese, September.—1st and Diploma, J. A. Northrup; 2nd,

Harry H. Parlee; 3rd, Corn Hill Cheese Co.; 4th, L. J. Murphy; 5th, Fred Fawcett, Hammond Vale, N. B.; 6th, Ben Keith.

HORTICULTURE

3 boxes Duchess.—1st, St. John Valley Nurseries, Oromocto, N. B.; 2nd, R. D. W. Hubbard, Oromocto.

3 boxes Dudley.—1st, St. John Valley Nurseries; 2nd, J. W. Stephenson & Son, Maugerville, N. B.; 3rd, S. B. Hatheway, Fredericton, N. B.

3 boxes Wealthy.—1st, St. John Valley Nurseries.

3 boxes A.O.V.—4th, J. W. Stephenson & Son.

Box Alexander.—1st, S. B. Hatheway; 2nd, J. W. Stephenson & Son.

Box Duchess.—1st, St. John Valley Nurseries.

Box Dudley.—1st, F. E. & H. G. Smith, Long Reach, N. B.; 2nd, S. B. Hatheway.

Box Fameuse.—1st, St. John Valley Nurseries; 2nd, S. B. Hatheway.

Box Wealthy.—1st, St. John Valley Nurseries; 2nd, R. D. W. Hubbard

Box A.O.V.—1st, W. P. & T. H. Fox, Lr. Gagetown; 3rd, J. W. Stephenson & Son.

Barrel Apples.—1st, F. E. and H. G. Smith; 2nd, J. W .Stephenson & Son; 3rd, H. Ray Parent, Douglas, N. B.

Five eight qt baskets.—1st, F. E. & H. G. Smith; 2nd, S. B. Hatheway; 3rd, H. Ray Parent, Douglas, N. B.

Apples—Single Plates

Plate McIntosh Red.—1st, Thos. Chatfield & Son, Fredericton; 2nd, Robt. M. Gray, Fredericton; 3rd, W. T. & F. L. Fox; 4th, S. B. Hatheway; 5th, Alex. J. Dunphy.

Plate Alexander.—1st, Alex J. Dunphy; 2nd, Robert M. Gray; 3rd, S. B. Hatheway; 4th, Thos. Chatfield & Son; 5th, Guy Hawkins.

Plate Wolf River.—1st, Edwin Parent; 2nd, R. D. W. Hubbard; 3rd, H. Ray Parent; 4th, S. B. Hatheway; 5th, J. W. Stephenson & Son.

Plate Fameuse.—1st, Alex J. Dunphy; 2nd, F. E. & H. G. Smith; 3rd, W. T. & F. L. Fox; 4th, R. D. W. Hubbard; 5th, S. B. Hatheway.

Plate Dudley.—1st W T. & F. L. Fox; 2nd, F. E. & H. G. Smith; 3rd. Thos. Chatfield & Son; 4th, S. B. Hatheway; 5th, Guy Hawkins.

Plate Duchess.—1st, Alex J. Dunphy; 2nd, T. W. Gregory; 3rd, J. W. Clark; 4th, F. E. & H. G. Smith; 5th, J. W. Stephenson & Son.

Plate Wealthy.—1st, Thos. Chatfield & Son; 2nd, Robert M .Gay; 3rd, H. Ray Parent! 4th, Aex. J. Dunjhy; 5th, St. John Valley Nurseries.

Plaee Princess Louise.—1st Robert M. Gray; 2nd, H. Ray Parent; 3rd, Edwin Parent.

Plate St. Lawrence—1st Alex J. Dunphy; 2nd, S. B. Hatheway; 3rd, Edwin Parent.

Plate Gravenstein.—1st, F. E. and H. G. Smith; 2nd, W. T. and F. L. Fox; 3rd, Allen Bezanson.

Plate Red Astrachan.—1st, Alex J. Dunphy; 2nd, F. E. and H. G. Smith; 3rd, Robert J. Shaw.

Plate Bishop Pippin.—1st, W. T. & F. L. Fox; 2nd, F. E. and H. G. Smith; 3rd, Alex J. Dunphy.

Plate Bethel.—1st, Alex J. Dunphy; 2nd, Robert M. Gray; 3rd, Alphonso Kelly.

Plate Baxter.—1st, Edwin Parent; 2nd, St. John Valley Nurseries; 3rd, J. W. Stephenson & Son.

Plate Canada Baldwin.—1st, W. T. & F. L. Fox.

Plate Pewaukee.—1st W. T. and F. L. Fox; 2nd, Alex J. Dunphy; 3rd, F. G. Dingee & Sons, Lr. Gagetown.

Plate Tolman—1st, Alex J. Dunphy; 2nd, St. John Valley Nurseries; 3rd, W. T. and F. L. Fox.

Plate N. W. Greening.—1st, Alex J. Dunphy; 2nd, Robert J. Shaw.

Plate Golden Russet.—1st, F. E. & H. G. Smith; 2nd, W. P. & F. L. Fox; 3rd, Allen Bezanson.

Plate Northern Spy.—1st, F. G. Dingee & Son; 2nd, W .P. & F. L. Fox; 3rd, F. E. & G. H. Smith.

Plate Milwaukee.—7st, Harry R. Duplissia; 2nd, Edwin Parent; 3rd, H. Ray Parent.

Plate A.O.V.—1st, Allen Bezanson; 2nd, J. W. Stephenson & Son; 3rd, W. P. & F. L. Fox; 4th, F. G. Dingee & Sons.

Crab Apples

Hyslop.—1st, F. E. & H. G. Smith; 2nd, J. W. Clark, Fredericton.

Transcendant.—1st, Alex J. Dunphy.

A. O. V.—1st, Harold Estey; 2nd, H. P. Baird.

Pears, Plums and Grapes

Pears, any named variety.—1st, Alex J. Dunphy; 2nd, Allen Bezanson.

Moore's Arctic Plum.—1st, Alex J. Dunphy.

A. O. V. Plum.—1st, Allen Bezanson.

3 bunches Grapes.—1st, Miss Jean Mitchell.

Maple Products

Maple Sugar, in glass.—1st, John R. Jewett.

Collection of Apples

Collection six varieties.—1st, W. T. & F. L. Fox; 2nd, S. B. Hatheway; 3rd, F. E. and H. G. Smith;; 4th, Alex J. Dunphy; 5th, F. G. Dingee & Sons.

Collection Apples A. O. V., grown on any farm.—1st, Alex J. Dunphy; 2nd, W. T. and F. L. Fox; 3rd, F. E. and H. G. Smith; 4th, R. D. W. Hubbard.

FLORICULTURE

Stove and Greenhouse Plants.—1st, J. Bebbington, Fredericton .

Collection Foilage Plants.—1st, J. Bebbington.

Exotic Ferns.—2nd, J. Bebbington.

Oriental Begonias.—1st, J. Bebbington; 2nd, T. W. Gregory.

Roses, distinct varieties.—2nd, J. Bebbington.

Coleus.—1st, J. Bebbington.

Geraniums, 6 blooms.—1st, J. Bebbington.

English Ivy, trained.—1st J. Bebbington.

Palms, varieties.—1st, J. Bebbington.

Tuberous Rooted Begonias.—1st, J. Bebbington.

Specimen Begonia, Rex.—1st, Mrs. John Jewett; 2nd, Mrs. Nehemiah Keirstead.

Specimen Canna, bloom.—2nd, J. Bebbington.

Best Display, class 13.—1st, J. Bebbington.

Cut Flowers, Bouquets, Etc.

Collection Carnations.—2nd, J. Bebbington.

Collection Hollyhocks.—1st, T. W. Gregory; 2nd, J. Bebbington.

Colelction Asters.—1st, J. Bebbington.

Collection Gladiola.—1st, J. Bebbington.

Collection Sweet Peas.—1st, J. E. Page, Fredericton; 2nd, J. Bebbington.

Collection Phlox.—1st, T. W. Gregory; 2nd, J. Bebbington.

Cut Flowers

Bridal Bouquet.—2nd, J. Bebbington.

Table Bouquet.—1st, J. Bebbington.

Hand Bouquet.—2nd, J. Bebbington.

Floral Ornament.—2nd, J. Bebbington.

Funeral Design.—1st, J. Bebbington.

Collection Cut Roses.—J. Bebbington.

Collection Pansies.—1st, T.W. Gregory; 2nd, J. Bebbington.

Amateur

Display Cut Flowers.—1st prize.

Burpee's Special

Sweet Peas.—1st, J. E. Page.

Field Grains

Wheat, Red Fife or Marquis.—1st, McIntyre Bros.; 2nd, R. A. Snowball.

Wheat, Fife.—1st, Donald Innis.

Oats, Banner.—1st, Robert Shaw.

Oats, A. O. V. white variety.—1st, R. A. Snowball; 2nd, Donald Shaw; 2rd, Robert J. Shaw.

Oats, Black.—1st, Allen Bezanson; 2nd, McIntyre Bros.

Barley (2 rowed.)—1st, Allen Bezanson.

Barley (6 rowed)—1st Robert Shaw, 2nd, Clovernook Stock Farm.

Buckwheat (rough.)—1st, McIntyre Bros.

Buckwheat.— (smooth)—1st, Robert J. Shaw.

Rye.—1st, Clovernook Stock Farm.

Field Peas (large.)—1st, Frank Bezanson; 2nd, Allen Bezanson.

Field Peas (small.)—1st, Allen Bezanson; 2nd, Clovernook Stock Farm; 3rd, Frank Bezanson.

Beans (colored) — 1st, Bertrand Goodspeed; 2nd, Miss Amelia J. Kirk.

Corn, any variety.—1st Allen Bezan-

(Continued on page 900)

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"Heavy Stone"
B 13, ½ in.
B 43, ⅞-18.
B53, ⅞-Long.
Price $1.25

Ball terminal when specified ; otherwise regular knurl nut

You may have the best motor in the world, but it cannot produce maximum power without efficient spark plugs.

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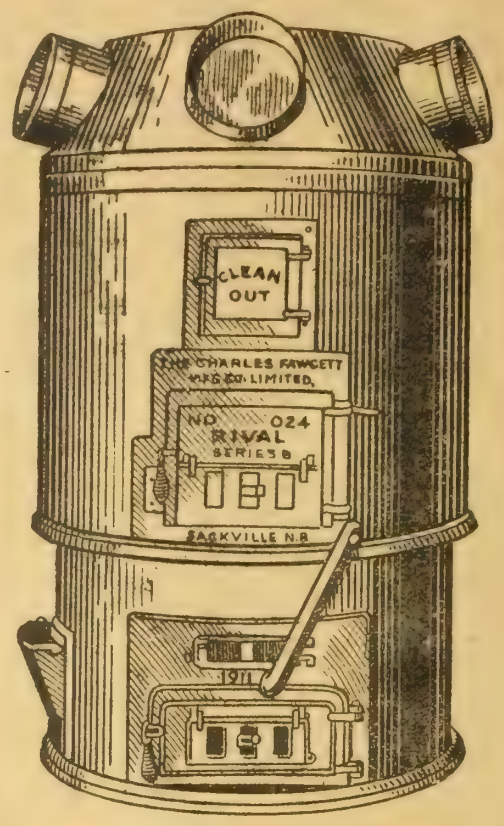

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Features:—Fire pot, sectional; radiator of heavy gauge steel; triangular grate; extra large feed door; deep ash pit; check damper; draft regulator; clean-out door, evaporating pan, joints cupped, packed with asbestos, cement and rope, absolutely gas tight. It burns hard and soft coal with equally satisfactory results. Fawcett New Rival has stood the rigid test of time and use. Insist on getting a Fawcett New Rival if you would heat your home comfortably, economically and satisfactorily.

Ask for circular on Warm Air Furnaces.

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FANNING-MILL SELECTION

(Experimental Farms Note)

The true function of the fanning-mill is to remove weed seeds, light grain and any coarse material that may be present. For this work it is indispensable; no seed should be sown which has not been thoroughly cleaned and graded. There are, however, certain limitations to this method of selection which are not always appreciated by the grain grower.

All impurities cannot be removed by the use of the fanning-mill as is sometimes claimed. It is true that a large part of them will be removed, but there are always kernels of wheat, oats and barley that cannot be separated. A short, plump, pin oat cannot be removed from wheat nor can a long, plump kernel of wheat be removed from oats. Barley and oats present a very difficult problem and the per cent of impurities remaining is much larger.

Fanning-mill selection maintains the yield of a pure variety, but does not increase it as many suppose. The constant increase in yield that some have obtained from year to year has been due to the fact that originally their seed was impure, and the larger seeds happening to be the most productive, were selected to the exclusion of the smaller and less prolific grains. Also, by the accidental mixture of a few large seeds of another sort, it can be easily understood how the type of variety may be altered if fanning-mill selection alone is practised. However, this possibility can be avoided, and should not deter any person from the use of the fanning-mill. Unless the grain is thoroughly selected by this method, seeds that are low in vitality will be sown, the result being either a defective germination or else weak plants that are handicapped throughout the season by a poor start. Grain from such plants is inferior in size and plumpness and reduces the quality and yield of the general crop.

To grow pure grain of strong vitality, the fanning-mill must be used in conjunction wtih the seed plot. In this way fanning-mill selection reaches its highest point of efficiency. All plants that are different in type can be removed before harvesting and this leaves to the fanning-mill only the work of rejection of the weed seeds and inferior grain. This combination ensures pure grain and maximum production.

CONGRATULATIONS TO PRINCE EWARD ISLAND'S NEW MINISTER FOR AGRICULTURE

Hon. W. M. Lea, of Victoria, P. E. I., has been appointed Minister of Agriculture and Provincial Secretary-Treasurer for his province. The Maritime Farmer takes this opportunity of congratulating Mr. Lea on his appointment, which is well merited.

Mr. Lea has been a consistent advertiser and frequent writer in the columns of the Maritime Farmer for many years. He is one of the best and most practical farmers of the Island Province and as chief of the Agricultural departmet should prove an able administrator. His Holsteins have been leading prize winners at all our Maritime shows. He represented his constituency during the last term in the Island Parliament on the opposition benches. His precept and example should inspire the utmost confidence in his department. We know the many breeders and exhibitors who associated with him at the fairs will join with his many other friends in wishing him every success in his offical capacity as Minister for Agriculture of the Island Province.

A PLUMPER FOR HOME MIXED FERTILIZERS

Editor the Maritime Farmer:

I was very much interested in an article which appeared in the September 4th issue of the Maine Farmer, over the signature of Geo. V. Brown, Secretary of the Aroostook Federation of Farmers.

I am forwarding an extract to you for publication as I feel the subject matter will be much interest to many of the readers of The Maritime Farmer.

"Now that digging has begun, the "falsity of the claims made by the "fertilizer agents last spring are be-"coming daily more apparent. Not a "poor piece of potatoes out of over "2000 acres planted on home-mixed "goods that cost $35.00 or more a ton, "less than ready mixed commercial "fertilizers. Hundreds of acres ruined "by the use of commercial ready-mix-"ed fertilizers.

"Fertilizer agents stated last spring "that the chemicals sold by the Fed-"eration would cake and could not be "used in the planters, that they would "rot the seed, and that they were in-"ferior goods and wouldn't raise a "crop, etc., all of which was absolutely "false. No fertilizer ever worked any "better in the planters, no better stand "of plants could be found than where "these goods were used. All summer, "where used side by side with the best "of the ready-mixed goods, the home-"mixed showed their superiority, and "now at digging they are in every case "equal, if not better, than fertilizers "costing $35.00 per ton more.

"Are you going to believe those "agents when they come around this "fall with honey words and specious "promises of what their goods will do, "and what they know about fertilizers?

"Mr. Brown goes on to say that the "Federation will be in position to sup-"ply chemicals this fall at a price that "will sound good to the potato grower "—chemicals that will be better goods "than any ready-mixed fertilizer com-"pany will sell and that will not con-"tain anything injurious and no use-"less material such as hair, wool "waste, horn and hoof meal and other "sources of nitrogen used in a great "deal of commercial fertilizers. Don't "patronize anyone who has fooled you "in the past and who is knocking "farmers' organizations."

The results procured by the farmers of Maine through the use of home-mixed fertilizers is identical to the results procured by New Brunswick farmers which they have for a number of years been purchasing co-operatively through their agricultural societies and the New Brunswick Agricultural Societies United.

The canvasses used against home-mixed fertilizers in Maine bear the same ear marks of the canvasses used in New Brunswick by men who have an axe to grind. Our farmers are, however, staying with the game. Once a user of home-mixed fertilizer, always a user is the history in this province. They are getting satisfactory results at a minimum cost.

In regard to the damage done by ready-mixed fertilizers in Maine during the past season, not all brands of commercial fertilizers gave such disastrous results. While motoring in Aroostook County last July I met and talked with farmers who were loud in their complaints against certain brands of fertilizer they had used. In one district I learned that indignation meetings had been held to institute damage actions against the manufacturers who had placed injurious goods on the market.

I did not hear of any damage from ready-mixed fertilizers on the Canadian side of the line.

FERTILIZER USER,
Carleton County, N. B.

NEW WORLD'S RECORD

Little Gift of Spring Valley, an American bred Holstein cow owned by W. S. Moscrip, of Lake Elmo, Minn., has just broken the world's record for one day's milk production, producing 155.44 lbs. milk in one day, which takes the record away from the Canadian champion, May Echo Sylvia. The latter still holds the championship for 7, 30, 60, 90 and 100 days. Little Gift is now on semi-official test, and is expected to add new honors to her already illustrious name. It will be remembered that she made, a few years ago, a two-year-old record of 18,205 lbs. milk, containing 742 lbs. butter, and dropped twin calves sixteen days after her year was up.

Rolla Mercena DeKol, the world's champion 51.93 lb. butter cow, sold for $26,000 at Moyer's sale of Holsteins, held at Philadelphia, Pa., last week. She was consigned by J. B. Hanmer, of Norwich, Ont., and purchased by Cold Streams Farm, Lexington, Ky. A daughter of this cow, Glenotter Rolla DeKol, brought $7,100.

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We will send you a FREE SAMPLE of Hallam's Paste Animal Bait

This is an entirely new and much improved form of Animal bait—it is made in a paste form and put up in tubes (like tooth paste).

While possessing all the excellent qualities of the liquid bait it lasts longer and is unexcelled for attracting all flesh eating animals, such as Mink, Fox, Wolf, Lynx, Skunk, etc.

It is easy to carry, economical and handy to use, (simply squeeze out enough for your set each time)—not affected by snow or rain.

You can have a FREE sample for the asking (enough for 2 or 3 sets).

We will also send you Hallam's Trappers and Sportsmens Supply Catalogue, 48 pages, (in English and French) showing traps of all kinds, guns, rifles, ammunition, fish nets, shoepacks etc., at very moderate prices.

Hallam's Raw Fur News contains latest information on Raw Fur prices and market conditions, sent free on request.

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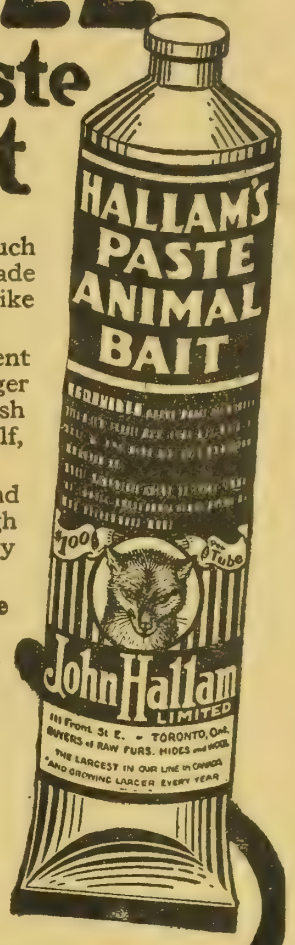

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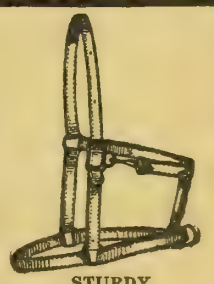
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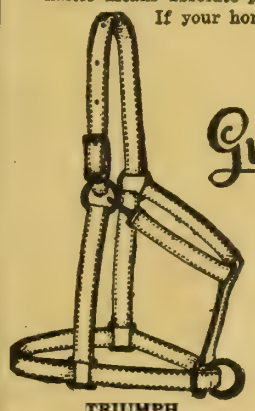
Griffith Guaranteed Halters


TRIUMPH

within a year from date of purchase just send it to us with ticket attached and we will send you a new one without charge. Triumph Halters are sold by all dealers at $2.50 ($2.75 in the West).

Here is another wonder, made from chrome leather,—the Sturdy—Price only $1.75 (In the West $2.00). Look for the Griffith Guarantee Tag.

If your dealer does not keep these halters, send direct to us giving dealer's name. Ask for our free Halter Booklet.

G. L. Griffith & Son
64 Waterloo St., Stratford, Ont. 50

87 Years of Service

The foundation stone of any Bank's success must be service to the public.

The 87 years of steady growth of this Bank, its steady increase in assets and resources, are a measure of the sound, consistent, friendly service it extends to its customers.

May we not serve you, too?

Paid-up Capital $ 9,700,000
Reserve Fund 18,000,000
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We invite your account. Special facilities for banking by mail. Thirty-three branches in New Brunswick. Head Office, Halifax, N.S.

87A

Two Cents a Word

PRIZE CHESTER WHITE and Berkshire Pigs, Turkeys, Ducks, Dogs and Hares, Black and Grey Flemish Pigeons.—SUNSHINE POULTRY EXCHANGE, Dept. 12, 85 Munroe St., Hoboken, N. J.

WANTED—Two Toulouse Ganders as breeders. One year old if possible, and For Sale—One pair African Geese, five years old a noble pair. L. W. NIXON, Sewellville, Glou. Co., N. B.

500 Fine Barron 240 strain, S. C. W. Leghorn Pullets, now laying, $2.00 each in 100 lots; less $2.25 each; Reds, $2.25 each; Rocks, $2.50 each. Order from this adv.—SUNSHINE POULTRY EXCHANGE, Dept. R, 85 Munroe St., Hoboken, N. J.

Chester White Pigs
FOR SALE

I have a splendid litter of pure bred Chester White pigs farrowed Sept. 16th, which I am offering at four weeks at $7.00 each F. O. B. our station; price to include reg.

These pigs are backed by best Ontario strains and are a good type for breeding purposes.

FRED K. BROWN
Lower Brighton, Car. Co., N. B.

Advertise in the Farmer

THE FREDERICTON EXHIBITION

(Continued from page 897)

son; 2nd, John Scott, Sr.,; Hayward Hawkins.

Timothy Seed—1st, McIntyre Bros.; 2nd, Robert J. Shaw; 3rd, Roland B. Shaw.

Sheaf Grains

Wheat, any bald variety.—1st, Donold Innnis; 2nd, Allen Bezanson; 3rd, Frank Bezanson.

Wheat, any bearded variety.—1st, Allen Bezanson; 2nd, Frank Bezanson.

Oats, Banner.—1st, Donald Innis; 2nd, Allen Bezanson; 3rd, Frank Bezanson; 4th, Bertrand Goodspeed.

Oats, Horsemon type.—1st, Bertrand Goodspeed.

Oats, A.O.V., white variety.—1st, Donald Innis; 2nd, Allen Bezanson; 3rd, Frank Bezanson; 4th, Bertrand Goodspeed.

Oats, Black.—1st, Donald Innis.

Barley (2 rowed)—st, Frank Bezanson; n2d, Allen Bezanson; 3rd, Donald Innis; 4thEdwin Parent.

Barley (6 rowed)—1st, Donald Innis; 2nd, Edwin Parent; 3rd, Allen Bezonson.

Rye.—1st, Allen Bezanson; 2nd, Donald Innis.

Field Grains—Special

Wheat, selected, sheaf.—1st, Donald Innis.

Oats, selected, sheaf.—1st, Donald Innis.

Collection of grain.—1st, Donald Innis.

Forage Sheaves

Forage Sheaf, Red Clover.—1st, Allen Bezanson; 2nd, Frank Bezanson; 3rd, Donald Innis.

Forage Sheaf, Alsike Clover.—1st, Allen Bezanson; 2nd, Frank Bezanson; 3rd, Donald Innis.

Forage Sheaf, Timothy.—1st, Allen Bezanson; 2nd, Donald Innis; 3rd, Frank Bezanson.

Potatoes, Field Roots

Green Mountain Group.—1st, Robert Shaw; 2nd, Allen Bezanson; 3rd, Charles McAdam; 4th, McIntyre Bros., 5th, A. E. Killburn; 6th, Alphonso Kelly.

Irish Cobbler.—1st, Allen Bezanson; 2nd, F .L. Traer, Chatham; 3rd, McIntyre Bros.; 4th, Roland B. Shaw; 5th, Bertrand oGodspeed; 6th, Sandy Estabrooks, Barker's Pt.

Any Long Variety, white.—1st, Allen Bezanson; 2nd, Bertrand Goodspeed; 3rd, Frank Bezanson; 4th, John G. Neill.

Any Rose Variety.—1st, Frank Bezanson; n2d, Allen Bezanson; 3rd, Pat Burns, Fredericton; 4th, Samuel Baird

Any Red Variety.—1st, Charles McAdam; 2nd, Allen Bezanson; 3rd, Bertrand Goodspeed; 4th, Frank Bezanson.

Any Dark Skinned Variety.—1st, Roland B. Shaw; 2nd, Bertrand Goodspeed; 3rd, John S. Knox; 4th, J. B. Kileen, Fredericton.

Swedes.—1st, Jas. D. Ballanyer, Fredericton; 2nd, A. E. Kilburn; 3rd, George Hayes, North Devon; 4th, F. L. Traer.

Turnips.—1st, Allen Bezanson; 2nd, W. Illingworth; 3rd, Emille Winch, Minto, N. B.; 4th, Frank Bezanson.

Mangels.—1st, F. L. Trear; 2nd, Bertrand Goodspeed; 3rd, W. Illingworth; 4th, Allen Bezanson.

Sugar Mangels.—1st, Alphonso Kelly; 2nd, Frank Bezanson; 3rd, F. L. Fuller; 4th, W. Illingworth.

Carrots, red.—1st, Earl McKay; 2nd Samuel Baird; 3rd, Allen Bezanson; 4th, F. L. Traer.

Carrots, white.—1st, Allen Bezanson; 2nd, F. L. Traer; 3rd, Bertrand Goodspeed; 4th, Frank Bezanson.

Pumpkins.—1st, Sandy Estabrooks; 2nd, Allen Bezanson; 3rd, Edward Allen; 4th, John D. Ballanger.

Sheaf Fodder Corn.—1st, Frederick D. Parent; 2nd, Roland B. Shaw; 3rd, Bertrand Goodspeed; 4th, Arthur Illingworth.

Collection Field Roots.—1st, Allen Bezanson; 2nd, Frank Bezanson; 3rd, Bertrand Goodspeed; 4th, Arthur Illingworth.

Garden Vegetables

Brussels Sprouts—1st, Allen Bezanson.

Beets, Blood Long.—1st, Allen Bezanson; 2nd, Frank Bezanson; 3rd, F. L. Traer; 4th, J. Bebbington.

Beets, Egyptian.—1st, Allen Bezanson; 2nd, F. L. Traer; 3rd, Earl McKay.

Beets, Eclipse.—1st, Frank Bezanson; 2nd, Allen Bezanson; 3rd, Alfred Keen.

Beans, Wax Podded.—1st, Charles McAdam; 2nd, J. Bebbington; 3rd, Allen Bezanson.

Beans, Green Podded.—1st, Fred R. Haines; 2nd, Walter Estabrooks; 3rd, J. Bebbington.

Cauliflower.—1st, J. Bebbington; 2nd, F. L. Traer; 3rd, J. B. Kileen.

Cabbage.—1st, J. B. iKleen; 2nd, A. E. Kilburn; 3rd, Henry Webb.

Carrots, Intermediate.—1st, Edwin Parent; 2nd, Alfred Keen; 3rd, Bertrand Goodspeed.

Carrots, Oxheart—1st Henry Webb; 2nd, Allen Bezanson; 3rd. Frank Bezanson.

Carrots, Early Horn.—1st, Allen Bezanson; 2nd, Frank Bezanson; 3rd, F. L. Traer.

Celery.—1st, Miss Amelia J. Kirk;

In the dark winter mornings or cold raw days of Fall and Spring, it is no joke getting up in the morning. That job of cleaning the stable has to be tackled and it is mighty hard work.

Cleaning the stable with a wheelbarrow is a tiresome, disagreeable, task. It is just about the hardest job on the farm, particularly when the yard is sloppy and the planks slippery.

There is no need to do all that hard labor if you have a BT Manure Carrier. You take out three barrow loads at a time that means fewer trips. You are absolutely independent of the conditions in the yard, because the track runs overhead.

Fill the big open-mouthed bucket, windlass it up and run it out sixty or a hundred feet from the barn. Then pull the trip latch and dump the manure in a neat compact pile. In this way, rain and frost will not spoil its fertilizing value.

You will use your BT Carrier every day. It will save you time, labor, manure and hours of hard work. By saving an hour a day, you will have more time to work in the fields. On Sunday you can be done in lots of time for Church.

The coupon will bring our catalogue with full particulars. Cut it out and send it to-day.

FREE COUPON

BEATTY BROS. LIMITED
U388 HILL ST. FERGUS, ONT.

Please send me a copy of your illustrated catalogue on Manure Carriers. I have answered your questions below.

Are you thinking of putting in a Manure Carrier .....

If so, when .....

How many cows have you ?.....

Your name .....

P. O. .....

R. R. No. ..... Province .....

COBEQUID FARM HOLSTEINS

We have a number of fine young registered bulls, to offer. They are sired by Prince Colanthas Canary B., and out of good producing dams.

We can make prompt shipment. Correspondence invited.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

2nd, J. Bebbington; 3rd, F. L. Traer.
Celery, white Plume.—1st, F. L. Traer; 2nd, J. Bebbington.
Celery, Red.—1st, J. Bebbington.
Corn, Yellow Golden Bantam.—1st, Hayward Hawkins; 2nd, J. B. Kileen; 3rd, Pat Burns.
Corn, Sweet.—1st, F. E. & H. G. Smith; 2nd, Hayward Hawkins; 3rd, Bertrand oGodspeed.
Cucumbers.—1st, Sandy Estabrooks, 2nd, Allen Bezanson; 3rd, J. B. Kileen.
Collection of Herbs.—1st, Allen Bezanson; 2nd, F. L. Traer; 3rd, Willard R. Camp, Fredericton.
Melon, Musk.—1st, J. Bebbington.
Melon, Musk.—1st, Allen Bezanson; 2nd, Frank Bezanson.
Onions, white.—1st, Allen Bezanson, 2nd, J. Bebbington.
Onions, Yellow.—1st, Allen Bezanson; 2nd, Frank Bezanson; 3rd, Earl McKay.
Onions, Red.—1st, Frank Bezanson; 2nd, Allen Bezanson! 3rd, F. L. Traer.
Onions, White.—1st, Allen Bezanson; 2nd, Frank Bezanson; 3rd, J. Bebbington.
Onions, Yellow—1st, F. L. Traer; 2nd, Allen Bezanson; 3rd, Frank Bezanson.
Onions, potato.—1st, Donald Innis; 2nd, Allen Bezanson; 3rd, Frank Bezanson.
Onions, potato English.—1st, Donald Innis; 2nd, Allen Bezanson; 3rd, Frank Bezanson.
Parsnips, Hollow.—1st, Bertrand Goodspeed; 2nd, F. L. Taer; 3rd, Edwin Parent.
Parsnips, Intermediate.—1st, Bertrand Goodspeed; 2nd, Allen Bezanson.
Peas, Garden.—1st, Earl McKay; 2nd, Arthur Illingsworth.
Radishes.—1st, F. L. Traer; 2nd, J. Bebbington.
Savoys.—1st, F. L.Traer.
Squash, Marrow.—1st, Harry R. Duplissia; 2nd, Allen Bezanson; 3rd, J. Bebbington.
Squash, Hubbard.—1st, Walter Estabrooks; 2nd, Bertrand Goodspeed; 3rd, J. B. Kileen.
Squash, Warted Hubbard.—1st, H. W. Steen; 2nd, Bertrand Goodspeed.
Squash, Mammoth.—1st, J. Hartley Smith, Fredericton; 2nd, Harry R. Duplissia; 3rd, Bertrand Goodspeed.
Squash, Essex, Hybrid.—1st, Allen Bezanson.
Squash, English Veg. Marrow.—1st, Allen Bezanson.
Squash, A. O V.—1st, Harry R. Duplissia; 2nd, A. E. Kilburn; 3rd, Fred R. Haines, North Devon.
Salsify.—1st, Frank Bezanson; 2nd, Allen Bezanson.
Tomatoes, Red.—1st, G. Wllard Kitchen, Fredericton; 2nd, Frederick D. Parent; 3rd, A. A. Belmore, Fredericton.
Tomatoes, Green.—1st, F. E. & H. G. Smith; Allen Bezanson; 3rd, Bertrand Goodspeed.
Tomatoes, collection.—1st, J. Bebbington; 2nd, Allen Bezanson; 3rd, Hayward Hawkins.
Collection of Vegetables.—1st, Allen Bezanson; 2nd, J. B. Kileen.

Special Prizes

Collection, W. A. Burpee & Co.—1st, Allen Bezanson; 2nd, Bertrand Goodspeed.
Best Exhibit of Onions.—1st, Allen Bezanson; 2nd, Earl McKay.

(To be continued)

PRESERVE NURSERY STOCK DELAYED IN TRANSIT BY "HEELING IN"

It is sometimes difficult for communities or individuals located at some distance from the postoffice, along a rural mail route, to get trees and shrubs from nurseries in a fresh condition. Owing to the irregular mail service, often times nursery stock is pretty well dried out when received by the purchaser. Trees and shrubs must be fresh if they are to survive after planting. The following suggestion from Prof. W. J. Morrill, of the Colorado Agricultural College, may prove helpful:

"Have someone receive the stock immediately upon its arrival at the postoffice or express office at the other end of the route. Have them heel the trees in a moist, shallow, trench, covering the roots with moist earth and leaving the tops out but shaded from sun or protected from drying winds, and so hold until someone is coming to your place or until you can go in to get them. The trees will thus be protected from drying out and will be in good condition, with such treatment, for a week or so. In carrying them home, keep the roots moist and covered, away from the sun and dry air."

Saves Shortening

One of the first things you notice, after "Beaver" Flour comes to your house, is that you are using *less shortening* than you used with western spring wheat flours.

You also notice that the Pie Crusts, Cookies and Doughnuts are lighter and flakier—that the Bread Rolls and Biscuits have a delicate flavour, a delightful, nutlike, homey flavour that is doubly welcome after the tough, almost tasteless bread you used to make with western spring wheat flours.

BEAVER FLOUR

Milled of Blended Wheat

is really two flours in one, for two kinds of wheat are used in blending. "Beaver" Flour contains the choicest Ontario winter wheat, strengthened with western spring wheat.

This gives you the finest pastry flour that can be milled—with the right strength to make a good size loaf of bread or a big pan of snowy Rolls.

More than that, everything made of "Beaver" Flour has a deliciously appetizing, nutlike flavour that is entirely lacking in the strong, western spring wheat flours.

Try it yourself—see how you save shortening—see how you come to depend on the even strength and quality of this famous flour—see how everything tastes so much better. Your dealer should have "Beaver" Flour—or will get it for you.

DEALERS—write for prices on Feed, Coarse Grains and Cereals. 199

THE T. H. TAYLOR CO. LIMITED, - - CHATHAM, Ont.

FEEDS IN CAR LOTS

Are you interested in feeds in car lots? The Maritime Farmer is in a position to supply agricultural societies with feeds of proven worth, at prices which will save many dollars for those who are willing to co-operate in buying. We are offering 36 per cent protein cotton seed meal at prices which are most attractive. The terms are sight draft attached to bill of lading, payable on presentation. We offer car lots at about fourteen dollars per ton below some of the wholesale quotations, subject to acceptance by the mill. We will guarantee the goods to be equal to any you have ever used and superior to many brands of cotton seed meal on the market. Write us for quotations. We would ask you to remember that the tendency of the feed market is upward. Feeds are scarce and in great demand. There may be an advance in freight rates, too, which will increase prices. The early order is a winner.

A VERY VALUABLE BOOK

The Veterinarian, by Charles J. Korinck, V. S., is a work on the afflictions of horses, cattle, sheep, swine, poultry, etc., which every farmer should have in his home. The story of how treatment can best be administered is told in simple every-day English that any person can understand. The methods suggested by Prof. Korinek are simple and easily followed. The book will cost you seventy-five cents, postage paid. It may be the means of saving you as many dollars in the near future. How many men are there who meet trouble by writing to the Maritime Farmer or some other paper for information which will be found in the Veterinarian? It is strongly bound in cloth, has serviceable illustrations and is well indexed. Seventy-five cents will bring it to you.

MAKE YOUR OWN CALF MEAL

The Beaver Mfg. Co., Ltd., Galt, Ont., manufacturers of Herbagum, advise farmers to make their own calf meal as follows: 100 lbs. oil cake meal, 100 lbs. feed flour, 200 lbs. wheat middlings or fine shorts, 1 lb. fine salt and 4 lbs. Herbageum. Mix thoroughly and stir about two cupfuls in a gallon of scalding water and feed warm. If oil cake meal is not obtainable at a fair price use ground oats. By acting on this advice the best results at least cost will be ensured.

Herbageum is 25c per lb., so the cost of the 405 lbs. of calf meal is easily figured.—Advt.

Firshade Farm
Dual Purpose Shorthorns

P. R. L. FAIRWEATHER

Rothesay, N. B.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The address must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issue. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

FOR SALE—Registered Cheviot ewes and lambs, also high grade ewes.—R. FURNESS, Vernon Bridge, P.E.I.

FOR SALE—One Registered Holstein Bull, (No. 26112) Frank Cobequid. For particulars apply to S. DeWITT JOHNSON, R. R. No. 1, Norton, N. B.

FOR SALE—Pure bred Oxford Down ram lambs and ewes, also shearling rams, all registered.—R. G. McLEOD & SONS, Lansdowne Station, Pictou Co., N. S.

FOR SALE—2 Young Pure Bred Guernsey Bulls, one five and the other three months old. 1 grade Heifer (Guernsey) 11 months old.—H. C. CORSON, Middlehead, South Bay C.B.

LADIES WANTED—To do plain and light sewing at home; whole or spare time; good pay; work sent any distance, charges paid. Send stamp for particulars.—NATIONAL MANUFACTURING COMPAMY, Montreal.

GREAT WHITE LIGHT BURNERS—The lamp burner that doubles the light you get from your oil lamps. We have a few dozen to offer at 18c each, postpaid. They are a big investment for any person using oil lamps. In large size only. —THE MARITIME FARMER, Sussex, N. B.

THREE HUNDRED KEGS first quality wire nails, mixed sizes, suitable for repair work around farm buildings and other premiscs. Price $3.50 per 100 lbs. Apply by mail to "NAILS," care of Office Maritime Farmer, Sussex, N. B.

Bloomfield Stock Farm

Ayrshire and Guernsey Cattle—Shropshire Sheep

We are offering males and females, all ages. Have some good cows to freshen soon. Am booking orders for ram lambs for fall delivery. Write or phone for prices and description.

J. ROBIE MacDONALD,
Shubenacadie, - - Nova Scotia
Successor to J. MacDonald & Son

Five Ayrshire Bulls for Sale!

From good milking strain. All fit for service.

Prescott Blanchard,
Truro - Nova Scotia

FOR IMMEDIATE SALE

A number of Ayrshire Cows. Ask about them, it will be worth your while.
One pure bred Ram Lamb, Horned Dorset, from the best of stock, in good condition.
B. R. Cockerel from the best trap nest strain in Canada. $2.00 each while they last.

S. J. HAWKINS,
Stewiacke, Col. Co., N. S.

A PROFITABLE BUSINESS OPENING FOR YOU

I want an energetic man, with a little time to spare, to handle a high class line of Cream Separators, in your locality. Machines fully guaranteed, prices and terms to purchasers right, and a paying business for the dealer.

Write for particulars.

W. C. ROTHWELL
General Agent
11 WATED ST. ST. JOHN, N. B.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

APPLE CIDER

Prohibition has created a great demand for non-intoxicating beverages and nowhere is this demand more in evidence than in the case of our fruit juices. This fact should not be overlooked by those who have apples going to waste. There is a good chance to turn such fruit into a profitable source of revenue by making it up into cider.

It is predicted that with the increased demand, apple cider, this fall and winter, will sell for anywhere from thirty cents to one dollar per gallon. Much cull fruit which might not otherwise be profitably disposed of may be utilized in this way.

Care in washing the fruit used and in discarding the decay and wormy apples will help in building up a trade.

Hard cider is, of course, tabooed, and as sweet cider is a more or less perishable product, suggestions in regard to keeping it sweet may not be amiss.. Either of the following methods described in the American Fruit Grower is effective:

(1) "Cider can be kept indefinitely with flavor and appearance unchanged exactly the point desired and allowable —and you don't have to use poisonous preservatives either. Just filter it and then pasteurize it in the final container (bottle or jug) sealed tight at about 150 degrees F. and hold it at that temperature for half an hour and you can't tell it from fresh new juice."

(2) "Perhaps the most simple method known is to screen the cider through a cloth to remove the larger particles of solids, put in a copper kettle, evaporating pan, or steam evaporator and heat until it will just come to a boiling heat. Meantime keep skimming off the scum as fast as it rises. The moment the juice comes to a boil, shut off the heat and pour into sterilized gallon jugs or other containers in which it can be corked up tight. The corks should be pressed a little below the level of the top and covered over with esaling wax. Then store on the floor of a cool cellar and the juice will keep for many months."—R. A. McGinty, Colorado Agricultural College, Fort Collins, Colorado.

Auto Tires $17.50

Fine non-skid tire for small cars, size 30 x 3½, fully guaranteed for 3500 miles

The Maritime Farmer begs to announce a substantial reduction in the price of non-skid tires for small cars, Fords, Chevrolets, Maxwells, etc. They are FIRSTS, fully guaranteed and we will sell them to you, provided you are a paid-up subscriber to the Maritime Farmer for $17.50 f. o. b. Sussex. Plain tires for $16.25, fully guaranteed for above mileage. Tubes for same size tire $2.90. These goods are all A1 stock and are made by a well known tire house. Of course these prices are for spot cash with order. The Maritime Farmer was able to take advantage of the recent break in the market and its large buying capacity to get you the benefit of this substantial cut in price. IT'S THE BEST BUY IN CANADA Today. Write the Auto Department, Maritime Farmer, Sussex, N. B.

ELMHURST STOCK FARM

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

SUNNYSIDE STOCK FARM

Ayrshire Cattle and Chester White Swine

Present offering: one bull two years old, two aged seventeen months. Also a number of younger ones. Females any age. This herd is bred for production having the combined strain of "Jean Armour" and "White Heather"

J. FRANK ROACH, Proprietor,
Phone 111. - - - - Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.

We have young bulls for sale whose two nearest dams (both Canadian champions) average as high as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows; and one ready for service from a 41-lb. sire and an 18,000-lb. two-year-old dam. Send for our BOOK OF BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT

BELLEVUE STOCK FARM

Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross. Offering thirty ewe lambs and shearling ewes to avoid crowding winter quarters. Also a few ram lambs not booked yet.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, HAMMOND RIVER, N. B.

We are offering for sale calves of both sexes, sired by Dutchland Pieterje Count, a bull of splendid size and type, whose four nearest dams have records averaging 28.61 pounds of butter in seven days. His dam is a daughter of Colantha Johanna Lad, who has 101 A. R. O. daughters, 4 over 32 lbs., 7 over 30 lbs., three of them world's records for 365 days. If you want something choice, come and see these calves or write for further particulars.

We will also book orders for young Yorkshire pigs for next spring's delivery.

WM. S. HARDING, Prop.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

We have sold 13 head in the last few weeks but there are some dandy good ones left yet. Special offering—2 heifer calves and several bull calves, sired by Prince Colantha's Canary B. whose four nearest dams average 32.84 lbs. butter in 7 days; 105 lbs. milk in one day. These are beauties. A couple of yearlings and two-year-old heifers, bred to Prince, due in the fall. Severa young cows and heifers milking, due to calvc from August to December. We have a couple o bull calves fit to head the best herds in the provinces. Come and see them. We would be pleased to meet you at Truro if notified.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

BULL'S CREEK FARM

R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lbs. butter each in seven days. These cows have in turn been bred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkable combination of breeding and will sell a heifer calf or two. Get your orders in quick, they won't be here long.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM

Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

FOR SALE!

Our Shorthorns are about ready for the block. Parties wishing to start a herd can do so at reasonable prices from us. If not sold for breeding purposes, will go for beef. Both sexes, all ages. Come and see them before buying.

A few very nice Berks for sale.

L. M. ANDERSON, Sackville, N. B.

FIRSHADE FARM

DUAL PURPOSE SHORTHORNS

Present Offering:—Two Bull Calves

No. 1.—Son of Daisy Lodge, R. O. P. 11,638 lbs. milk, 480 lbs. fat. This cow led the four-year-old class in the Canadian Record of Performance.

No. 2.—Son of Queen Charlotte. She as a two-year-old has a R. O. P. of 7224 lbs. milk, 316 lbs. fat. This cow stands eighth in milk and sixth in fat production in the two-year old class.

The sire of these calves is Nivelle, whose dam as a two-year-old has a R. O. P. of 5496 lbs. of milk, 240 lbs. fat in 295 days.

P. R. L. FAIRWEATHER, Rothesay, N.B

Advertise in the Farmer

Willow Glen Shorthorns!

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

The
MARITIME FARMER
AND CO-OPERATIVE DAIRYMAN

REGISTERED TRADEMARK

Published Twice-a-month in the Interests of the Farmers of the Maritime Provinces of Canada

Vol. 24 SUSSEX, N. B., SEPTEMBER 30, 1919 No 24.

Agricultural Reading Room
College of Agriculture
E Davenport, Director
Urbana Ill.

"YOU SEE IT'S A MARITIME FENCE"

Maritime fences will stand the severest tests, because they are built throughout of extra heavy hard drawn No. 9 steel wire. The superior stretching power of No. 9 wire keeps the strands from snapping under heavy strains or hard frosts. Each fence is thoroughly galvanised and will sturdily resist the rust and rot of weather.

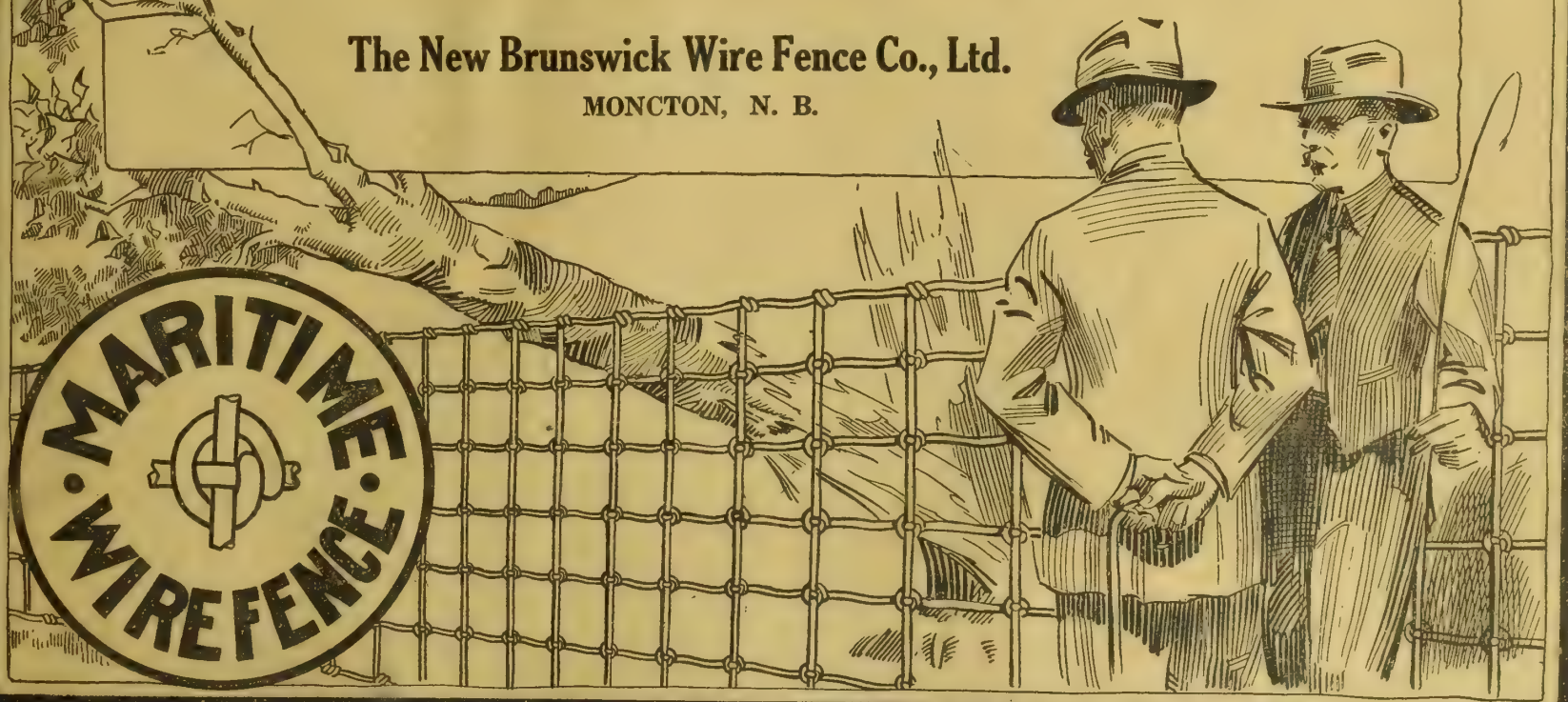
STANDS THE TEST OF MAN, BEAST, WEATHER and TIME

The strands and stays are firmly gripped at every join by our special time tried and tested never-slip lock. Even after years of hard service, Maritime wire fence retains its sagless shape and sightly appearance. All Maritime Fences are carefully inspected and rigidly tested before leaving the factory. When you buy it you know you have got something that is bull strong and hog tight, something that will withstand greater strain than it is ever likely to receive.

Before you buy fencing it will pay you to first learn what the Maritime has to offer in the way of real fence service.

For sale by agents and dealers in nearly every section.
If you don't know the local dealer, write to us direct.

The New Brunswick Wire Fence Co., Ltd.
MONCTON, N. B.



"Wabasso Cottons replaced with good advantage all imported lines during the war. Let Canadians buy Wabasso Cottons in preference to Imported Lines now that the war is over."

Our Principal Lines are :

Good as Gold White as Snow
WABASSO

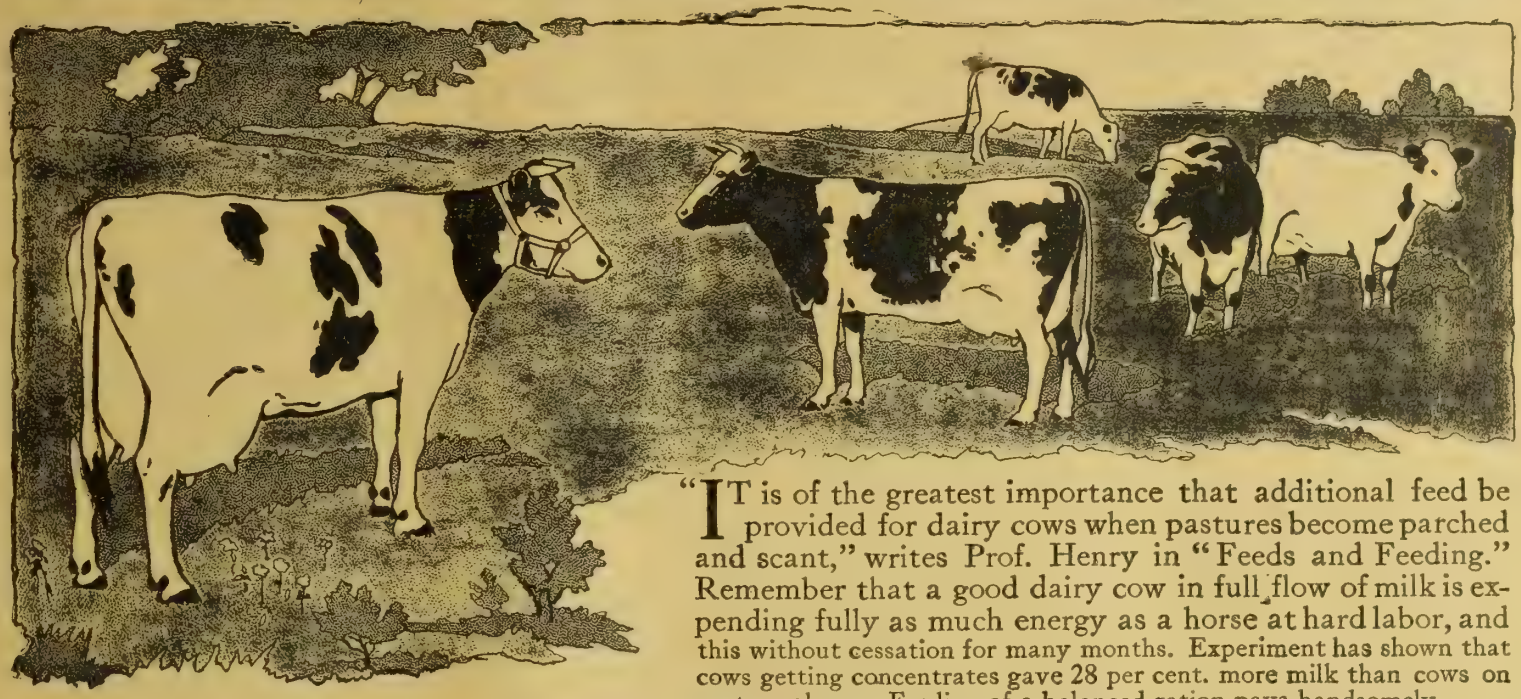
Lawns—Nainsooks—Madapolams—
Bridal Cloths—Voiles—Organdies
—Middy Cloths—Cambrics—
Longcloths—Sheets and
Sheetings

Slips and Circular Pillow
Cottons

The Wabasso Cotton Company Ltd.

Three Rivers, Quebec

Heavy Flow of Milk Over Long Periods



"IT is of the greatest importance that additional feed be provided for dairy cows when pastures become parched and scant," writes Prof. Henry in "Feeds and Feeding." Remember that a good dairy cow in full flow of milk is expending fully as much energy as a horse at hard labor, and this without cessation for many months. Experiment has shown that cows getting concentrates gave 28 per cent. more milk than cows on pasture alone. Feeding of a balanced ration pays handsomely.

Monarch Dairy Feed

is composed of oil cake meal, cottonseed meal along with such bulky feeds as bran, corn feed and barley feed. The oil cake meal has a rich store of crude protein and slightly laxative oil which accounts for the sleek coats of cows fed with Monarch Dairy Feed. Cottonseed meal is also a high protein feed, but is greatly improved when mixed in proper proportion with other feeds. In most cases cottonseed meal is the cheapest source of protein. Cottonseed meal is opposite in its effect to oil cake meal in that it is rather constipating and makes a hard butter fat. A combination of the two therefore gives ideal results. In feeding finely ground protein feeds, such as these, it is necessary to add bulk and to lighten them up for better digestion. For this purpose we use bran, corn feed and barley feed. These ingredients also make the feed more palatable.

Monarch Dairy Feed while being very rich, may be safely fed alone. Guaranteed analysis, protein 20%, fat 4%.

Monarch Dairy Feed supplies *all* the requirements of the cow, for concentrates, to give the highest production of milk.

Monarch Hog Feed

A special feed that meets all the requirements of the brood sow and the growing pig; consists principally of corn meal feed, shorts and digester tankage. Guaranteed analysis, Protein 15%, Fat 4%.

Sampson Feed

Meets the demand for a general purpose feed for both cattle and hogs. It is sold at somewhat lower price than either Monarch Dairy Feed or Monarch Hog Feed. Guaranteed analysis, Protein 10%, Fat 4%.

Give Monarch Dairy Feed a trial. Order a ton from your dealer; if he does not handle Monarch Feeds, write us direct giving dealer's name and we will tell you how to get Monarch.

The Campbell Flour Mills Company, Limited, West Toronto

Canada Food Board License, 6, 7 & 8. 50

LOCATION OF FARM BUILDINGS

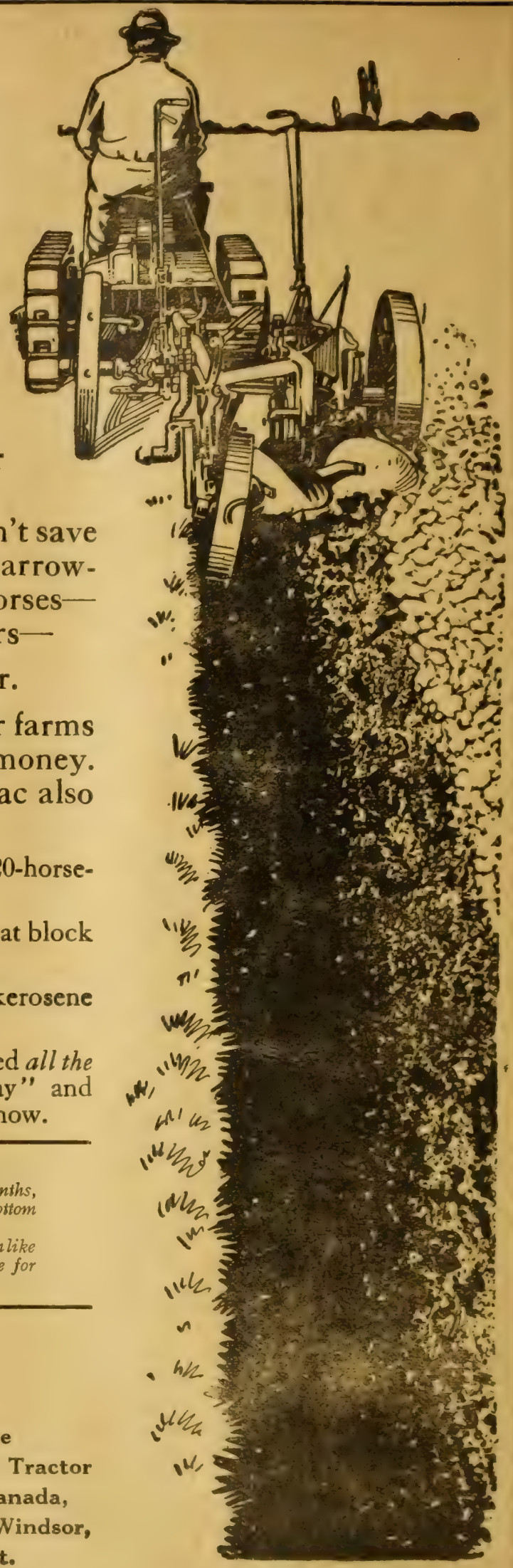
Location of farm buildings is of the greatest importance in saving time and labor. A different problem is present on different farms, so that it is impossible to lay down hard and fast rules for locating farm buildings. Local conditions, such as natural drainage or slope, will affect the location to a great extent. F. A. Meckel, of the University of Missouri College of Agriculture, gives the following suggestions for the location and arrangements for farm buildings:

1. The farmstead should be conveniently located with respect to the fields.
2. The farmstead should be near an improved road.
3. The barnyards and lots should be well drained, either by natural drainage or tiles.
4. Have troughs emptying into drains or cisterns will eliminate much mud in barnyards.
5. An exposed hill is undesirable, but a south slope is to be desired.
6. A timber windbreak will prove valuable on the north and west of the farmstead.
7. The buildings should be grouped around a central courtyard.
8. The granary should be convenient to the barn and hog-houses.
9. A water supply must be available. Running water in house, barns and yard is a great convenience.
10. Barnyards should not face the house or road.
11. The barn and yards should be 150 to 200 feet from the house, and not in the direction of the prevailing winds.
12. The house should be set well back from the road to avoid the dust.
13. The house should command a view of the barn door, the front entrance from the door, and the central courtyard.

Cletrac

TANK-TYPE TRACTOR

Puts More Land Under Crop



IT is a proven fact that the Cletrac Tank-Type Tractor saves money on the farm.

But—if the Cletrac Tank-Type Tractor didn't save a dollar of the cost of plowing, discing and harrowing—even if it cost more than farming with horses—it would still be a boon to progressive farmers—

—a sound investment and a big profit-maker.

Farmers who own Cletrac Tractors have their farms in good shape—more of their land is earning money. And because it fits the land better, the Cletrac also increases the yield per acre.

12-horsepower on the draw-bar. On the belt pulley 20-horsepower. Works 365 days in the year.

Plows 3½ miles an hour. Climbs in and out of places that block other tractors. Low-set—it can work under trees.

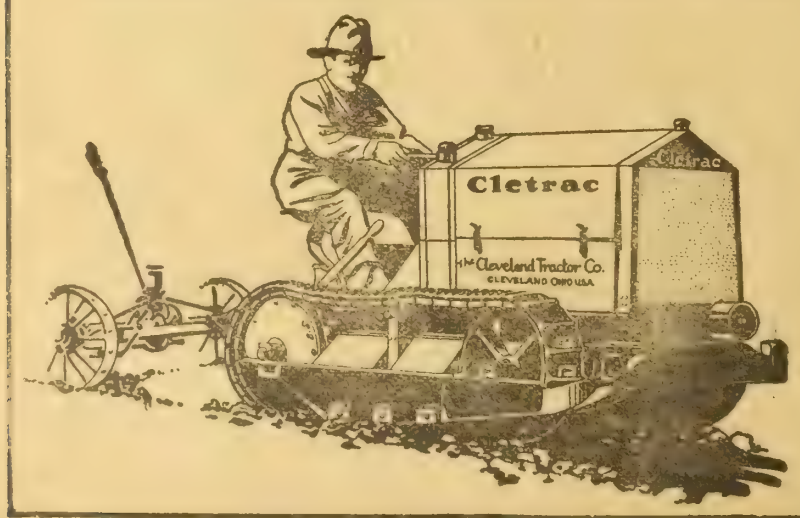
The Cletrac is a *kerosene* (coal oil) tractor—uses no more kerosene than most tractors use of gas.

Don't make a decision on the tractor till you have studied *all the facts*. Two most interesting books "Our Owners Say" and "Selecting your Tractor", free for the asking. Write now.

J. M. Boyd of Belleville writes us:

I have been operating my Cletrac Tank-Type Tractor for over three months, doing all my Fall plowing, discing, cultivating, etc., using three 10" bottom plows, with excellent results, on clay land which is more or less stony.

I have had it operating a 13" Gilson ensilage cutter on a 36-foot silo with like results, and was surprised at the simplicity in lining up this little machine for belt work—I used no bracing.



The Cleveland Tractor Co. of Canada, Limited, Windsor, Ont.

Wanted—

a man to represent in his home-territory and in his spare time, the world's largest cream separator manufacturer

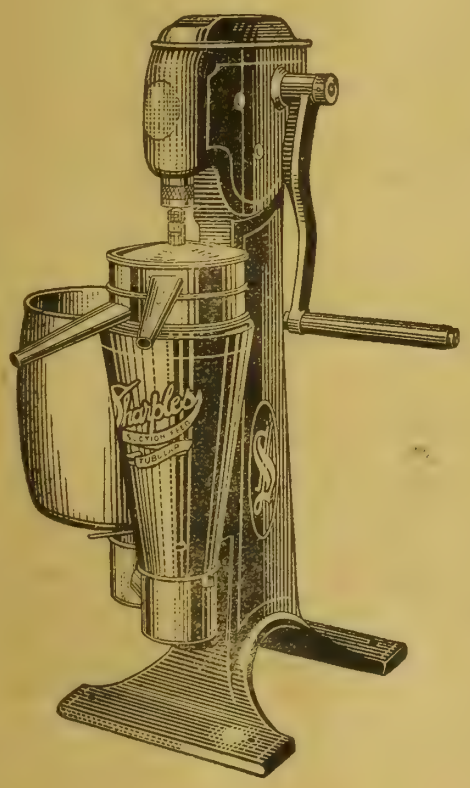
The Sharples Separator Company, the world's largest manufacturers of Cream Separators, Emulsifiers, Clarifiers, Whey Separators and Factory Separators, is about to enlarge its selling force.

The success of Sharples representatives in the territories that are now covered. insures an excellent opportunity in the new field for the right man.

The man we want is a capable successful farmer—who knows his neighbors and whose judgment is respected by them. If he is a Sharples owner so much the better.

He may devote to his work for us as much or as little of his time as he may elect. His territory will be his own.

He will find that the Sharples Suction-feed Separator has convincing and demonstrable selling points (skims clean at any speed, knee-low supply tank, no discs to wash, less than $2 a year guaranteed for oil repairs, etc.), that are not even **claimed** for any other separator.



He will find a host of Sharples users who will be glad to offer proof of Sharples' superiority in actual usage.

He will find that farmers already know of Sharples Separators through our extensive national advertising.

We want such a man in your territory. You can make this opportunity mean much to you if you will. Write today for exclusive contract and prices.

THE SHARPLES SEPARATOR COMPANY

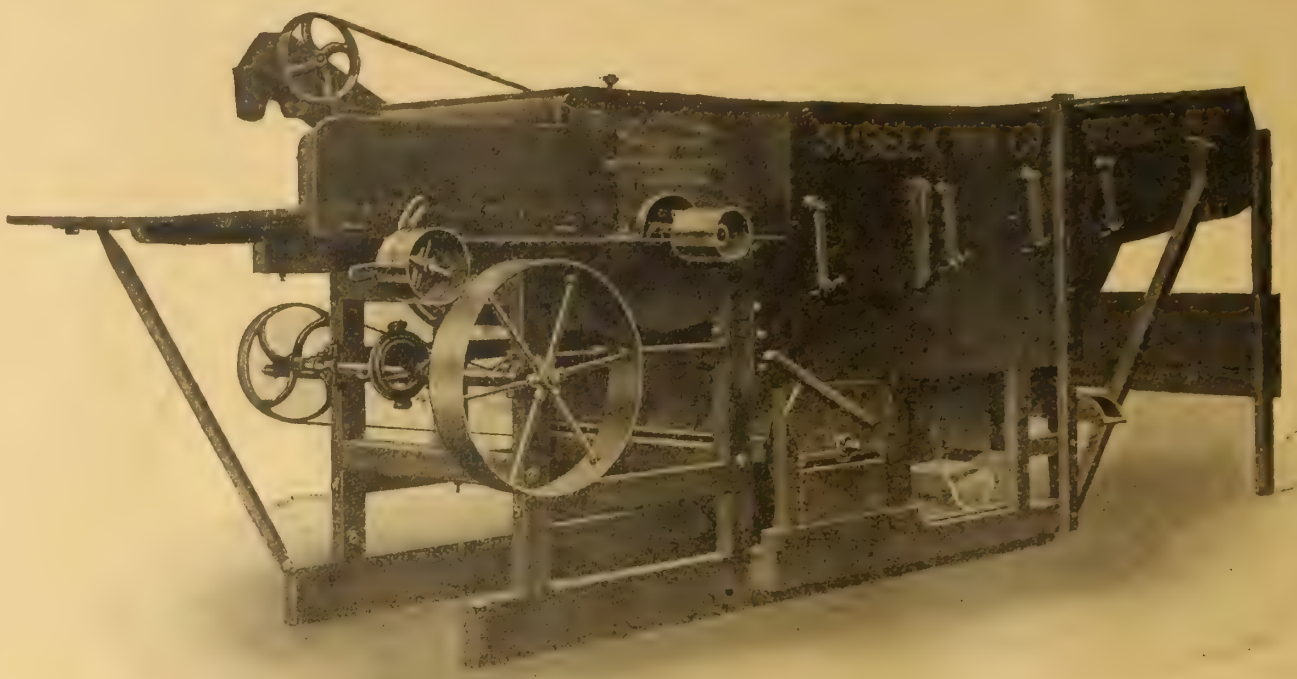
TORONTO, Ontario

All shipments made from St. John, N. B.

P—81

SUSSEX LITTLE GIANT THRESHERS

"THE PROVEN BEST"



NO. 2 WITH TAILINGS ELEVATOR

Made in four sizes. A size for every requirement.
Write to-day for Catalogue and Prices. IT WILL PAY YOU.

WALLACE MACHINE WORKS, Ltd. - - Sussex, N. B.

Every Young Farmer in the Maritime Provinces

SHOULD WRITE TO TRURO FOR A

FREE Copy of the Calendar of Agricultural College, Truro, N. S.

The College opens Nov. 4th next. Tuition is Free

A complete course is offerəd in all branches of Agriculture and the related sciences as well as English, Mathematics, etc.

An ordinary school education, plus farm experience qualifies for entrance. The age of former students varies from 16 to 35.

The course lasts two years at the conclusion of which students are awarded the Associate Diploma of the College. Graduates may complete their B.S.A. course at Guelph or MacDonald Colleges. Previous graduates have from year to year stood at the head of their classes at these institutions.

For further information write

M. CUMMING, Principal,
Truro, N. S.

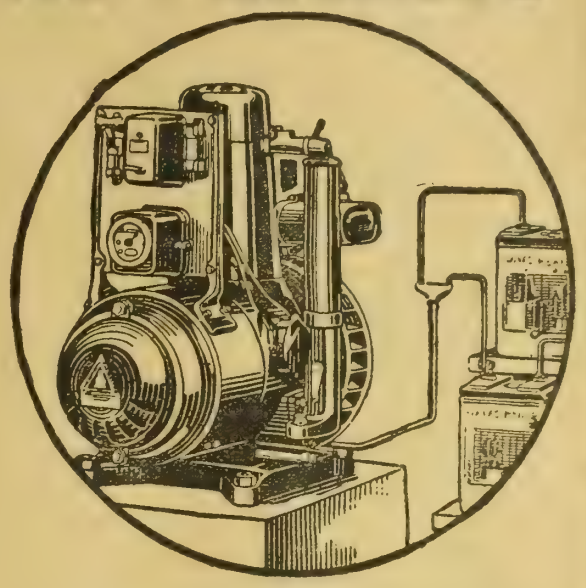
A Business Proposition for Farmers

WE want you to size up Delco-Light as you would a new farm hand before you hired him.

Will Delco-Light do a good day's work on the farm every day? Will it cost much to keep? Will it earn money for you? Will you get along pleasantly with it.

Over 75,000 Delco-Light users have answered these questions for themselves and for you.

Delco-Light gives them all the electric light and power they need.

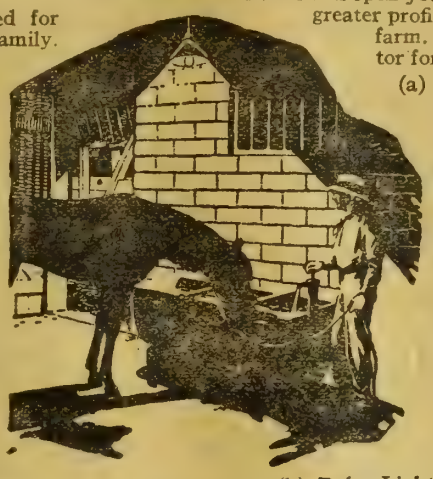


As a result—

They do chores before daylight or after dark, because house and barns are well lighted.

They have stopped working small machines by hand—milking machine, churn, separator, grindstone, washing machine, fanning mill, water-pump. They have running water wherever it is needed. They no longer hamper themselves with a lamp or lantern while working. There are no lamps to clean and fill. The ironing is done by electricity.

All this means time saved for every member of the farm family. It means more time spent at money-making work. On some farms it means doing away with hired help.



And the money now spent for coal oil will operate Delco-Light. Four times as much light from a gallon of coal oil is the record of Delco-Light over oil lamps. A few cents a day for all the electric light and power you can use.

Where there is a boy on the farm, he looks after Delco-Light. A few minutes each week is all the attention it needs. Note these exclusive features of Delco-Light construction. They insure care-free, long-lasting service for you.

It is direct-connected. There are no belts to slip, break or be replaced.

It is self-cranking. Pressing down on a lever starts the engine and it stops automatically when the batteries are charged.

It is air-cooled. There is no water to carry, to freeze, or to boil away.

There is only one place to put oil. There are no grease cups.

A simple mixing valve regulates the fuel supply. There is no complicated carburetor.

Ball and roller bearings cut down friction and increase efficiency.

Thick-plate batteries are long lasting.

You can see that on every point Delco-Light is a good business proposition—that it pays for itself. It does a lot of work for you. It saves you time. It gives you time for money-making work. It costs little to operate. It is easy to look after.

BESIDE ALL THIS, Delco-Light gives you the wonderful comfort and pleasure of electric light in the home. Floods of clear, bright light at the pressing of a button. No matches; no danger. Lots of light. Pleasant evenings; happy mother and children. You can't know the untold benefits of electricity until you try it.

Delco-Light users know all these things. They have written us letters telling us. We quote from some of these letters. We have printed some of them in a little folder. Illustrated with photographs. We want you to get this book and read it. It will open your eyes to the possibilities for greater profit and greater comfort on the farm. Write your nearest distributor for a free copy.

(a) DELCO-LIGHT has made it possible for us to do without one man, whose wages and keep amounted to $50.00—he would cost us more now.

By operating the above mentioned appliances Mrs. Peck has been so relieved from her ordinary household duties that she is able to spend a great deal of her time helping to care for the milk, and we are now able to do all of our own work, which has solved the hired help problem for us, and securing help nowadays is the farmers' greatest problem.

(b) Delco-Light saves us every day about one hour doing the chores around the farm—this would mean for my son and I about 730 hours a year at 30c. per hour, which is, figuring very low, about $219.00 saved.

(c) The time and labor saved every week over the old way is as follows:

Cream Separator.....	6	hours
Washing Machine.....	5	"
Flat-iron.....	2	"
Pumping water.....	6	"
Vacuum Cleaner.....	4	"
Power Stand on Fan Mill and various things...	2	"
Total.....	25	" per week

(d) I save about 2 hours a week on the washing, and 7 hours a week on separating. It saves one man about 4 hours to clip my team. On churning it saves my wife 3 hours a week. It saves about 30 minutes on grinding our sausage per hundred pounds.

(e) We figure that it has saved us in way of labor for pumping and milking not less than $1,200.00 during the two years. The plant requires very little attention and only about $2.00 per month for fuel. We could almost afford to buy a new one each year and still be ahead on labor and satisfaction, aside from the advantages of having the lights, of which we have 50 in the house and barns.

(f) I light my residence, a house of fourteen rooms and one of five, my garage, two barns and a workshop. I operate an automatic water pump, maintaining a pressure of 40 pounds for the entire water supply of the place, including hose for watering the garden. We have a ½-horse power Delco-Light Power Stand, which is used for churning and working the butter, turning the grindstone and running the washing machine. I expect to attach it later to the cream separator.

(g) This plant is paying for itself in several different ways. The fuel saving alone amounts to about $460.00 per year, as follows:

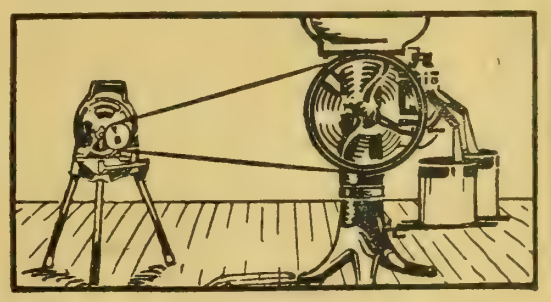
Where we formerly used 55 gallons of gasoline per week, at 25c. per gallon ($13.75) to operate the milking machine and pump alone, we now use 35 gallons of kerosene per week at 14c. per gallon ($4.90), which is a net saving of $8.85 per week, or $460.20 per year.

Also, in addition to this, we are lighting four houses, horse barn and cow barn and doing the washing and ironing.

Another instance of saving is that we save the time of one man (4 hours a day) handling lanterns alone in our cow barn. We figure this a saving of 30c. per hour, making $1.20 per day, $36.00 per month, or $432.00 per year.

(h) "I consider my purchase of a Delco-Light plant one of the best improvements I have made on my farm." DUNCAN MARSHALL,
Minister of Agriculture, Alberta, Canada.

(i) The plant has not given us a bit of trouble,



there have been no repairs to date and the operating cost has been less than $2.00 per month.

(j) Any child can run it and it beats any of your coal-oil lamps for light and safety. Before acquiring a Delco-Light I could not rest good at night for fear of children lighting a match and thereby possibly setting fire to something. Now I sleep like a log because all that is necessary for the children to do is to press the button and the light is there, and a most excellent light at that. It is much cheaper than Coal-oil and no danger of upsetting a lamp.

PROVINCIAL ELECTRIC LIGHT & POWER EQUIPMENT CO.
KENTVILLE, - - - N. S.

The Domestic Engineering Co.
Dayton, Ohio
Makers of Delco-Light Products

DELCO-LIGHT

The Complete Electric Light and Power Plant for Farms

100% Reserve Strength

Power at Lowest Cost Year After Year

WILL this light tractor, that develops no less than 2,000 lbs. draw-bar pull with only 3,700 lbs. weight, stand the strains of heavy work? Not only will it do so but it has no less than 100% of additional strength to spare for emergencies!

Why pay the extra cost of a heavy cumbersome tractor when this 100% "factor of safety" assures you not only of better service the first year, but of absolutely dependable service year in and year out? The

Happy Farmer TRACTOR

gives you its 2,000 lb. draw-bar pull, not by great weight of metal and correspondingly heavy engine power, but by the results of proper design.

Eighty-eight per cent of the weight is carried by the two big driving wheels. They grip the ground for heavy work, yet the whole tractor is so light that the wheels make less impression than horses' hoofs.

By this careful distribution of weight less metal is needed and strains are reduced to the minimum. There are but two-thirds the number of parts used in ordinary tractors.

Owing to less weight, less power is needed to propel the tractor. The power needed to move ordinary tractors along is, in the Happy Farmer Tractor, applied to the draw-bar where it really counts. As an economical source of power, the Happy Farmer knows no equal. It means more horse-power for your money.

If you want cheap power plus lifelong satisfaction, get a Happy Farmer Tractor.

Write us for free literature giving full details. Send a postal to-day.

Turns In Its Tracks

Line Drive Attachment

YOU can easily attach this simple line-drive to your Happy Farmer Tractor. With it one man can ride on binder and control both tractor and binder. The line-drive attachment soon pays for itself by saving the wages of extra man on binder, manure spreader, hay loader or mower. It works simply, easily and effectively. Write for particulars.

12-24 H.P.

The Renfrew Machinery Company, Limited

Head Office and Works

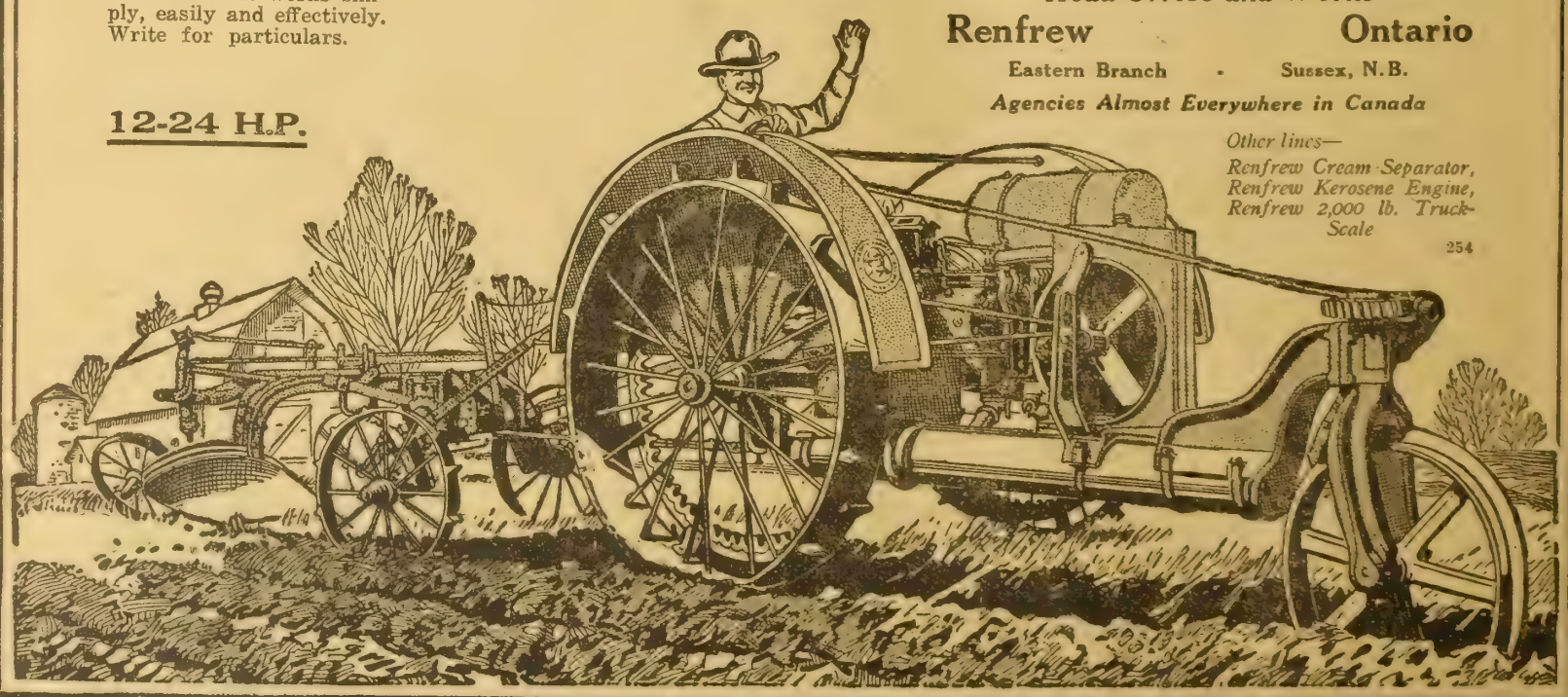
Renfrew **Ontario**

Eastern Branch - Sussex, N.B.

Agencies Almost Everywhere in Canada

Other lines—
Renfrew Cream Separator,
Renfrew Kerosene Engine,
Renfrew 2,000 lb. Truck-Scale

254



COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep

Orders now booked for EWE and RAM LAMBS for fall delivery, several extra good animals for sale out of Ewes clipping 10 to 12 lbs. and sired by an Imported Ram weighing about 400 lbs. with a clip of 18 lbs.

BREED LEICESTERS the Sheep with THE HEAVY FLEECE.

G. C. Cossar, Proprietor. J. Melkiejohn, Agent.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm

OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired by Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

Clearing Sale of Shorthorn Cattle

Am offering for sale my herd of pure bred registered Shorthorn cattle. These cattle range in age from 7 years to 3 years, or a little less, with one bull calf two weeks old, and are all fine in type and color.

I have also exceptionally good grade cattle of various ages for sale. All will be sold at a reasonable price and offer an unusual opportunity to anyone desiring to start a herd of choice stock or to renew an old herd.

J. E. HETHERINGTON, - Codys, N. B.

Springbrook Farm Ayrshires !

Females, all ages. Also a number of bull calves ranging from one month to eight months. Sired by the prize winning bulls "Morton Mains Amanth" Imp. and "Cherry Bank Cicero."

McINTYRE BROS.
SUSSEX CORNER, - - N. B.

AYRSHIRE CATTLE. KARAKULE-ARABI SHEEP

We are offering two Ayrshire Bulls, ages 9 and 14 months. They are from big producing dams. Prices very moderate.

We are also offering Karakule-Arabi rams and ewes, producers of the finest Persian Lamb Fur.

For particulars and prices write

THE EASTERN KARAKULE-ARABI SHEEP CO., LTD. WINDSOR, N. S.

CAULIFLOWER PLANTS

Genuine Early Snowball. 50 for 45c, prepaid. Shipped successfully everywhere. Ask for Price List of Cabbage, Celery and other Vegetable Plants.

HEROLD'S FARMS,
FRUITLAND, Ontario. Niagara District

FOR SALE

Two yearling Gurnsey bulls, well grown, and good pedigree, $50 each. Two yearling heifers, very promising. Two young cows, four and five years old. These cows are good in every way and due to freshen in a month or six weeks. A splendid heifer calf. All registered Guernseys.

SARAH E. M. SMITH,
Woodwards Cove, Grand Manan, N. B.

FOR SALE !

3 horned Dorset rams, from registered stock. Apply to

MAYNARD SMITH,
West Bathurst, R. R. No. 1, N. B.

Lawndale Stock Farm
Jerseys and Shorthorns (Pure Bred)

Jersey Offerings for the Summer of 1919—

3 year old registered heifer freshened in June, 1919, and now more than qualifying for the Govt. R. O. P. test. A splendid young cow of producing family. A few registered (mature) cows due to freshen in the coming fall and winter.

One 4-year-old Grade, heavy milker, due to freshen from pure bred bull, Oct. 11th, 1919.

Several pure bred calves, male and female.

Several yearlings, bred and not bred, registered and grades.

Shorthorn Offerings for Summer of 1919—

One young bull (pure bred and registered), dropped March, 1918, of splendid parentage.

Two yearling Heifers, very thrifty.

One Bull Calf, dropped Jan. 16th, 1919.

Several pure bred calves, male and female, by Imported English milking Shorthorn bull, out of splendid producing dams.

Apply for information to

I. M. LOVITT, M.D.,
Yarmouth North, - Nova Scotia

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B'

Ayrshire Cattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co,, N. S.
C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE PIGS

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Milking Shorthorns for Sale

We are offering some choice young Shorthorn bulls of the milking strain, ages 3 months to 15 months.

Also a limited supply of heifers, one and two years of age.

For particulars apply to

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett
Upper Sackville, - - - N. B.

KEEP
Holstein-Friesian Cows

1. The Holstein-Friesian is a large vigorous cow, full of energy and abounding in vitality.
2. Her physical organization and digestive capacity are such that she is able to turn to the best advantage the roughage of the farm, converting the same into merchantable products.
3. She yields large quantities of most excellent milk, fit for all uses and especially suited for shipping purposes.
4. Heredity is so firmly established through her long lineage that she is able to perpetuate herself for the production of strong, healthy calves.
5. When for any reason her usefulness in the dairy is at an end, she fattens readily and makes excellent beef.

If you can't buy a herd, buy a heifer

Information from the Holstein-Friesian Association

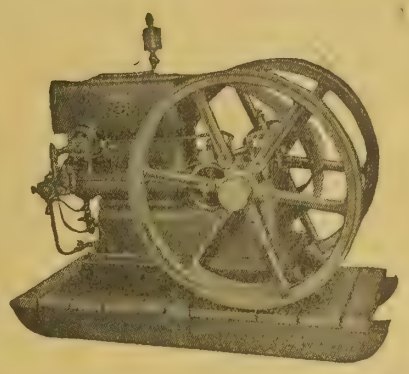
President, Dr, S.F. Tolmie. M.P. Victoria, B.C.
Secretary, W A. Clemons St. George, Ont.

AYRSHIRES BULLS !

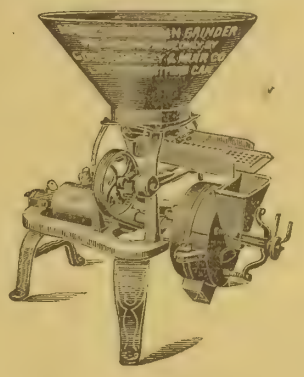
fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,
AMHERST, - - - N. S.

Brantford "Ideal" Kerosene Engines



An engine for every need. Also operated on Gas and Gasoline.



Maple Leaf Grain Grinders. 6 to 15 in.

Kerosene Light Tractors

WINDMILLS,

Pumps.
Tanks.
Waterboxes.
Steel Saw Frames.
Concrete Mixers.

Agents wanted in unrepresented territory.

GOOLD, SHAPLEY & MUIR CO., Limited
BRANTFORD, CANADA

FOR SALE !

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st, 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and 1st in grade cow, competing against all breeds at our late show at Charlottetown, with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

FOR SALE !

We have an exceptionally fine litter of 13 (living) of our large Berks for sale @ $12.00, four to 6 weeks old. Ready first of June.

Owing to scarcity of labor and we not being able to see eye to eye with certain Gov. officials, as to the type of Shorthorn to raise, we have decided to go out of the breeding and raising of pure bred live stock. Therefore our herd of 40 head of Shorthorns will be sold between now and fall for either breeding or for beef. Parties wishing to buy, please come and see them. We have seven very nice bulls, 10 months to two years.

L. M. ANDERSON, Sackville, N. B.

QUALITY BRAND
Rabbitry and Poultry Yards
Amherst, Nova Scotia
E. I. PEEL & SON, Proprietors

Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

Black Siberian Hares, the most profitable fur bearing animal living, price per pair..$25.00
Silver Siberians, price per pair..... 5.00
Belgians, price per pair 3 00
The above prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each
D. W. Young's stock, as good as money can buy.
White Leghorn 260 egg strain for hatching..... ..$2.00 per 15
White Leghorn, No. 1 exhibition stock for hatching.....$4.00 per 15

We Guarantee Safe Delivery. Terms Cash with Order

Glenrane Farm Holsteins

We have for sale a number of Cows due to freshen in Sept. & Oct. also yearling Heifers & a few Heifer Calves. We still have a few Bull Calves 8 & 9 months old.

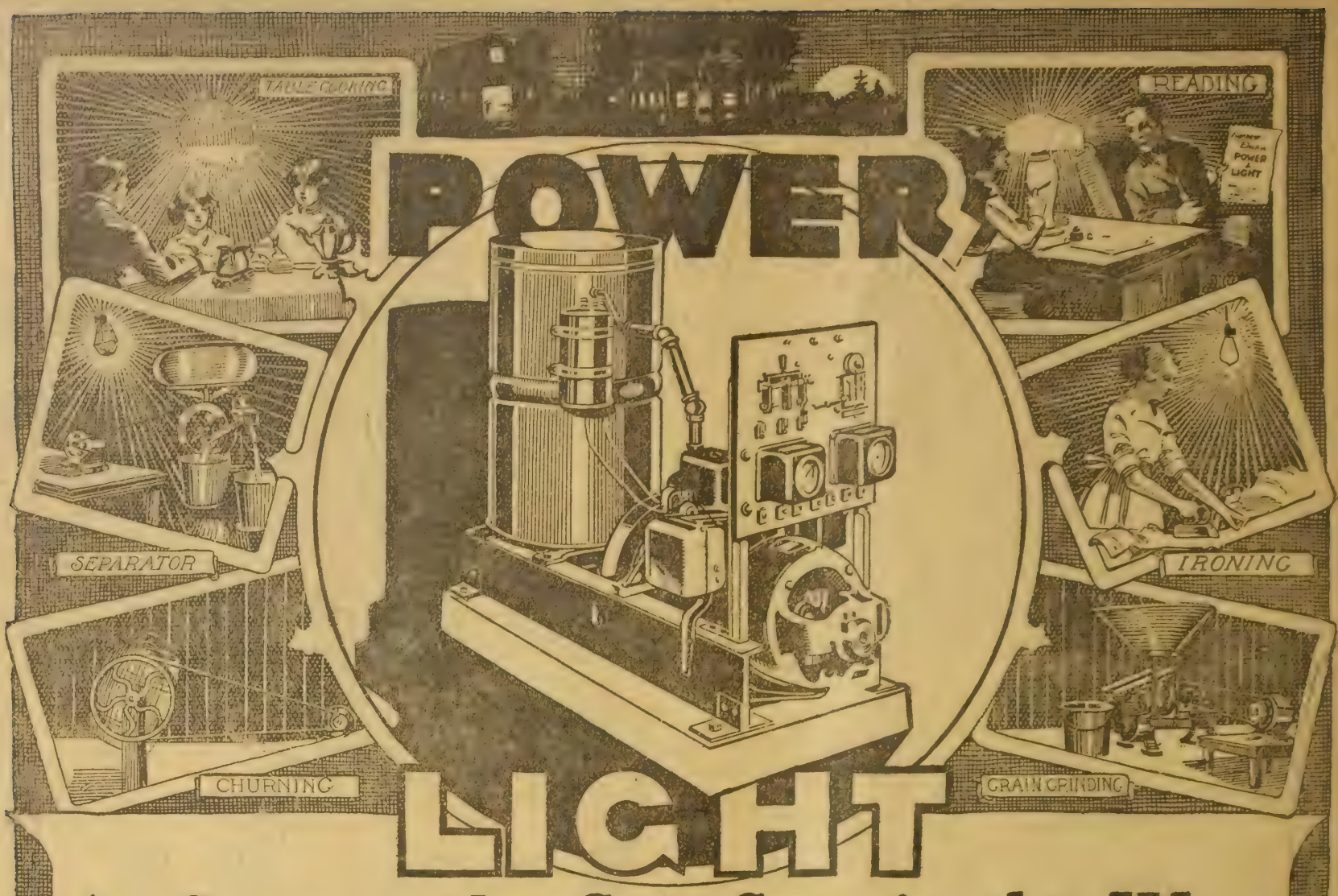
Our herd bull Homestead Hengrueld Rooker is also for sale after September. These cattle are all from stock backed by official records,

We will have a litter of York pigs due Sept. also our stock boars 16 months old for sale. These are the finest type of York pigs.

One Oxford grown Ram and a number of grade Ewe Lambs.

ROBT. HICKS
WEST BATHURST, - - N. B.

Advertise in the Farmer. Advertise in the Farmer.



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will do for you. Jobs that take muscle and time from the big end of farm work. Then, too, there is the domestic side of farming. Electricity in the home means wholesome freedom from many daily drudgeries. It will run the washing machine, iron, vacuum cleaner, sewing machine, operate the toaster and many other electric household utensils. It will flood your house and outbuildings with a safe, bright, clean and economical light. No oil lamps or lanterns to bother with.

Think what a help and convenience Electric Power and Light will be to you on the farm if you make it the Northern Electric way.

The system is entirely automatic; not even a button to press. No complicated parts or unnecessary frills to get out of order. Built for real hard work and long service with economy of upkeep. As simple and easy to look after as the Northern Electric Telephone you know so well.

NORTHERN ELECTRIC POWER and LIGHT is guaranteed absolutely reliable. Plenty of power; plenty of light. Progressive farmers all over Canada are buying the Northern Electric system because of its honest dollar-for-dollar value.

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